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Original Articles.

THE FRESH AIR TREATMENT OF ACUTE RESPIRATORY DISEASES, WITH ESPECIAL REFERENCE TO PNEUMONIA.*

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It is a well-established fact that when a cure is brought about in any of the infections for which we have no specific remedy or serum, the day is with the resisting forces. It is equally true that a most marked fortifying influence of the human system is to be found in certain natural agencies, among which fresh air is one of the foremost. In line with the same argument it may be stated that the most successful treatment of the great white plague is hygienic rather than medicinal, although it is to be earnestly hoped that we shall one day be in possession of a specific serum.

Doubtless one of the principal reasons for the slow progress that has been made in the treatment of pulmonary tuberculosis up to within a comparatively recent period, and still is being made in the case of lobar pneumonia, notwithstanding the already voluminous and ever-increasing literature on the subject, is ascribable to the foundationless and misguided hopes, which are too often based on the products of the manufacturing pharmacist, instead of recognizing the curative value of natural elements everywhere available; I refer particularly to absolute rest, fresh air, sunshine, and appropriate feeding. We may, on reasonable grounds, count this professional propensity to ring in a long list of drugs in the treatment of this disease, the majority of which rest on nothing tangible, but are like Mohammed's coffin, suspended in mid-air, as most unfortunate.

It required a long period of time for the profession to learn the great value of an outdoor existence in the treatment of tuberculosis, but its superior value has been finally recognized by the medical profession; and it has been before the public long enough in almost every quarter of the globe to prove its efficacy beyond question. Let us hope that no passionate infatuation of the professional mind for new therapeutic remedies will in future proffer a substitute, or lead to the neglect of a practice so efficient as outdoor living.

To be effective, fresh, pure air must be constantly applied, without regard to the seasons of the year or the periods of the day, although a certain degree of protection can and should be afforded during climatic extremes and under different conditions of disease.

*Read before the American Climatological Association, Atlantic City, N. J., May 14, 1906.

Without doubt, the combined sanatorium and climatic treatment of tuberculosis has given the most favorable results in that disease. These sanatoria take the form, as a rule, of cottages, pavilions, and tents, the object being to provide the sufferers abundantly with pure external air both by day and night. I am decidedly of the opinion that, next to appropriate and vigorous feeding with fat-forming proteids, the most effective element in the treatment of tuberculosis is constant purity of the atmosphere which is breathed, and also that rest, in cases presenting fever, is no less important.

Whilst this view needs no defence at date of writing, and whilst also the progressive element of the medical profession is wholly convinced of the usefulness of fresh, open air in pulmonary tuberculosis, there is still much missionary enterprise needed among the rank and file of that profession. It should be well understood also that to be effective the open-air treatment, whether employed in tuberculosis or any other pulmonary complaint, must be carried out in connection with a rigid system of living under the personal supervision of a competent physician.

This is equally true of the fresh-air treatment of the ordinary acute respiratory diseases, particularly lobar pneumonia, which, for the sake of convenience merely, has been placed in this category. The vast benefits of admitting fresh air freely to the sick-room in cases of pneumonia have attracted the attention recently of a few clinical observers, and in view of the very leading importance of the subject it deserves more extended consideration than it has hitherto received.

Undoubtedly, the normal human system has to a remarkable degree the power of accommodation, and unless exposed for too long a period to atmospheric impurities, no diseased conditions are the result. On the other hand, it is well understood that chemical and bacteriological impurities of the air are one of the most important factors in bringing about increased susceptibility to the acute infections, including diseases of the respiratory tract. No attempt can be made here to assign to the various impurities their precise rôle of pernicious activity. Stevenson and Murphy[1] have well said: "The evidences of injury to health from impure air are found in a larger proportion of ill helath—*i.e.* of days lost from sickness in the year—than under other circumstances; an increase in the severity of many diseases, which, though not caused, are influenced by, impure air, and a higher rate of mortality, especially among children, whose delicate frames always give us the best test of the effect of food and air."

Long since (1862) Sir John Simon stated that with a single exception "the 300,000 (coal) miners of England and Wales break down as a class prematurely from bronchitis and pneumonia, caused by the atmosphere in which they live. The exception is important. The colliers of Durham and

Northumberland, where the mines are well ventilated, do not appear to suffer from an excess of pulmonary diseases, or do so in a slight degree only." Notwithstanding the fact that, as the result of the introduction of more effective ventilation systems in the collieries of England and America, coal miners have been down to the present day peculiarly liable to bronchitis, asthma, emphysema, bronchopneumonia, and fibroid induration (pneumokoniosis), which often leads to chronic ulcerative phthisis. It is true that in these cases the lung texture is lacerated and irritated, to be followed by inflammatory processes, by the inhalation of coal dust floating in the atmosphere.

The usual mode of infection with microorganisms, which have been allowed to accumulate in badly ventilated habitations, is exemplified in the case of lobar pneumonia, diphtheria, chronic phthisis, and other infections.

At all events, bad or vitiated air is an important contributing factor in the causation of this class of affections by furnishing a nidus for the propagation of disease-producing germs and by accentuating their virulency. The fact that most cases of bronchitis, bronchopneumonia, asthma, and other lung affections show an increased incidence during the variable and cooler temperatures of spring and autumn, as well as the maximum prevalence of lobar pneumonia during the cold season, or from December to April, as compared with the exemption enjoyed during the warm season, would suggest that a low temperature and other meteorological factors form important factors in their production.

Granting this view, it is undoubtedly true that thorough ventilation combined with appropriate clothing is our principal hygienic measure in obviating the diseases mentioned above. "While prolonged exposure during the cold, inclement season is fraught with danger, careful, judicious 'habituation of the body to cold air and cold water' becomes at once an efficient and successful prophylactic measure." As elsewhere stated, "may not the higher incidence of pneumonia in winter and spring be due not so much to the direct effect of the low temperature, augmented barometric pressure, and velocity of the winds, as to the closer confinement of the populace indoors, in the stagnant air of living-rooms from which the sunlight is excluded, and which tends to lower vitality and decrease resistance on the one hand, and to favor rapid multiplication and increased virulence of the specific poisons on the other."[2] Again there is an evident tendency, as shown by statistical evidence, for pneumonia and other respiratory affections to prevail most extensively in overcrowded districts and among the impoverished classes. While there is no convincing evidence "as to the exemption of persons living entirely in the open air and thoroughly well-ventilated dwellings, and not exposed to infection from others," no doubt can be entertained that the breathing of pure air greatly lessens the incidence of the disease.

Naturally, then, pure air is primarily an effective prophylactic agent against the immense majority of both acute and chronic respiratory affections. While the foregoing facts are scarcely if ever called into question by physicians, there is a deep-rooted popular prejudice against the too free admission of fresh air into the sick chamber in cases of pneumonia and other acute respiratory diseases for fear of contracting "cold."

In victims of severe acute bronchitis with lowered resisting powers, a chill constitutes a dangerous experience as a rule. Hence, such conditions permit an outdoor existence only in fine weather and in the milder climates or seasons. But frequent changes of the indoor air without incurring a strong draught favors the cure of cases of acute bronchitis even in elderly subjects and children. Moreover, this method exerts a hardening effect.

This method, if conscientiously and persistently pursued, exerts an especially favorable influence in chronic bronchitis during the racking oscillations of the average American climate.

Fresh air appropriately applied, then, is generally to be recommended in the usual forms of bronchitis. In cases of neurotic asthma, marked improvement is often witnessed as the result of a suitable change of air. Now, whilst we cannot meet the variable climatic indications of this disease at home, the immediately beneficial effect of a flood of fresh air from an open window during a paroxysm is so well known as to make the suggestion appear superfluous.

The popular notion that there is an antagonism between pure, fresh air and the commoner respiratory diseases is clearly unfounded, and the profession should concern itself with the important question of giving the public the needed enlightenment on the subject. It is to be recollected, however, that fresh, cold air such as ordinarily admitted into our sick-rooms in winter does not mean that the patient is bathed in or breathes a germ-proof medium. Indeed, a subtle diffusion of the microorganisms that produce pneumonia and lung affections may be in progress at the same moment. The virtue, therefore, of fresh, open air does not reside solely in the quality of pureness, but also and largely upon its low temperature and dryness.

Cold is admittedly an effective tonic, if not combined with an excessive humidity. It is well known, as previously intimated, that the human body readily endures marked variations and even extremes of temperature remarkably well without obvious danger. Prolonged exposure to extreme cold, however, may prove positively injurious and even fatal. The question here arises, Is the influence of cold equally well, or better, tolerated under conditions of disease, such as lobar pneumonia, than in health?

The consumptive, as all know, can sleep with wide-open windows during the winter and at minimum temperatures, touching -10° to -30° F., with vast benefits to his condition. I have observed the application of the same principle with certain modifications to cases of lobar pneumonia with remarkably happy results. The question arises, By what immutable laws of Nature is the favorable effect of a steady cold produced?

In the first place, it is an undisputed fact that when the temperature rises above the critical point (Ranke) the organism defends itself from injury by increasing heat dissipation; the heat is removed in part by radiation and conduction from the dilated surface-vessels. When the sweat-glands become active a large amount of heat is also carried off by evaporation, and obviously the drier the surrounding air the greater the loss of watery vapor in this manner.

The critical temperature, according to Ranke, is from 59° to 68° F., and it is the "optimum temperature for man, securing the well-being of the organism with least expenditure of energy on its

part." It is of therapeutic importance to recollect that a lower temperature demands more active tissue change and per contra, that a higher temperature demands special means for getting rid of the heat generated. Obviously, however, the resistance to cold drops below the limit just mentioned in pneumonia, first, because of the artificial devices in the shape of bed-clothes which afford protection, and, secondly, the increased production of heat due to the presence of the morbid process.

In combating high temperature in various acute infections it is recognized that we have an efficient measure in hydrotherapy (cold baths directly abstracting the heat of the body), and also that water at a low temperature (70° F. or lower) produces a decidedly favorable effect upon the nervous system by stimulating the nerve centers, which preside over the organic functions (*e.g.* respiration, circulation). It is by reviewing our knowledge of the influence of hydrotherapy in this class of affections that we can measurably appreciate the value of a dry, cold atmosphere, which must exercise an analogous effect.

Briefly analyzed, the bracing and tonic effect of a steady cold is as follows: The principal influence exerted is that upon the nervous system; this is evidenced by its calming effect and the refreshing sleep induced thereby. The appetite and digestion noticeably share in the beneficial influences of this natural agency. In this connection it should not be forgotten that in the cold climate the system demands more nutritive material than in a warm one, or otherwise there will occur a loss of bodily weight. Fortunately, it is found that patients treated with fresh air can take more nourishment than those subjected to other methods, and readily assimilate it. Under the influence of low temperature the heart's action becomes slower and the pulse-tension increased—a desirable object to be attained in the treatment of lobar pneumonia. Cold exerts a tonic influence upon the nerves and vessels in the skin, and indirectly it has an important effect in lessening the tendency to internal congestion. Again, cold acts potently in stimulating the respiratory function, and, as an immediate consequence, more oxygen is absorbed.

It is obvious that an atmosphere containing the full complement of oxygen is demanded in pneumonia—a disease in which a large proportion of the air cells are rendered functionless. In speaking of the treatment of bronchopneumonia in children, Northrup[3] pertinently remarks: "Nothing stimulates the heart better than a current of fresh, cool air upon the face. Fresh air stimulates the heart, reddens the blood, quiets restlessness, favors sleep, improves secretions and digestion; in short, meets most of the indications for treatment of pneumonia in infants."

It has been the custom within the last quarter of a century to select as winter health resorts stations at great altitudes and in northerly latitudes. This is particularly true of foreign countries, where the medical profession has learned the lesson that these mountain resorts are better tolerated by invalids than the ordinary lowland winters, although the latter is in closer proximity to the tropics. The explanation is readily found in the fact that in the Alpine valleys the winters are intensely cold, combined with dryness and stillness of the atmosphere; and such a climate is more easily endured and more wholesomely stimulating to the bodily functions than the less severe climate of the lowland with its "penetrating damp and windy cold."[4]

We no longer believe in the absolute necessity for high altitudes in the cure of pulmonary tuberculosis, but, on the contrary, the majority of present-day sanatoria are situated at lower levels. It is generally accepted as a fact, however, that sanatoria should be located by preference in northern latitudes rather than too near the tropics, because of the differences in the peculiarities and effects of the different climates, already set forth. From the same facts it may be inferentially stated that home winter climates possessing such features as penetrating damp and strong wind currents would necessitate the exercise of care and caution in applying the fresh-air treatment in cases of pneumonia, although with sufficient covering and the proper adjustment of screens the patients can be efficiently protected.

At first sight, it might appear that the fresh-air treatment would diminish heat dissipation by nature's own methods, since cold, fresh air tends to contract the surface vessels, and thus retard loss of heat by radiation and conduction as well as evaporation of the cutaneous exhalations. It is admittedly important to maintain an active state of the cutaneous circulation and the secretions and by means of bed-clothes the resistance to cold is greatly increased, and under these circumstances mild perspiration may even be induced by systematic tepid spongings, combined with simple diaphoretics. At all events, the theoretical objections which might be urged against the fresh-air treatment are more than balanced by the salutary influences mentioned above, more particularly the bracing effect of the dry cold, with purity of the atmosphere, both of which are the features of this mode of treatment.

Indeed, it is not my purpose to advocate the fresh-air treatment to the exclusion of other accepted methods and means in the management of cases of pneumonia, but as a valuable adjunct to what is already known on the subject. The question naturally arises, May not a patient catch "cold" if exposed to currents of fresh air from open windows? May not such conditions be conducive to the occurrence of the more usual complications of this complaint, more especially bronchitis? It is generally conceded that generalized bronchitis of severe grade is an ominous complication; it intensifies the febrile movement and augments the dyspnea and cyanosis as well as the tendency to cardiac failure.

A personal acquaintance with the fresh-air method, although somewhat limited, justifies the statement and belief that pneumonia patients are in no danger of contracting a cold from perflation of the sick room with fresh air, and that the mere breathing of fresh air or the flowing of cool air over the face while the patient is confined to bed is practically unattended with risk in this respect.

In a severe case of lobar pneumonia, which I saw with Dr. George M. Boyd during the past winter, the nurses in attendance were obliged to wear wraps; this was also true of other cases without ill effects. My personal experience of its use, however, is limited to only five cases—too few to base thereon reliable inferences—yet the uniformly favorable results obtained furnish strong encouragement to its more general adoption.

The fresh-air treatment should not be undertaken without due deliberation upon the peculiarities presented by the individual case. Thus, in

certain forms of secondary pneumonia it might be inadvisable, *e.g.* when pneumonia supervenes in the course of advanced Bright's disease, or in persons having a highly sensitive nervous organization, and the like. The response to the action of a steady cold, be it remembered, is not always the same.

In general terms, it may be said that this measure is contraindicated in exceptional instances only; hence there is no difficulty in selecting suitable cases for its employment.

Lastly, among the particularly beneficial effects observed from the constant breathing of fresh, cool or cold air are a better general condition and increased strength, an improved appetite and digestion, refreshing sleep, lessened severity of the cough, diminished breathing rate, fever and pulse rate; in short, a less marked toxemia than in cases treated by the more usual methods. The nervous system, however, partakes largely in the general favorable effects.

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INDEPENDENT MEDICAL JOURNALISM A NECESSITY FOR THE PROFESSION.*

By KENNETH W. MILLICAN, B.A., Camb., M.R.C.S., L.R.C.P., Ed.

ST. LOUIS.

The *California State Journal of Medicine,* in its issue for January, 1906, quoted approvingly a statement from the *Journal of the Medical Society of New Jersey,* that "the day of the privately owned weekly medical journal is passing away. Its place will be taken by the *Journal of the American Medical Association* and the various State journals."

Let us for a moment suppose that this object has been accomplished and let us look at what the consequences of its accomplishment would be.

The American Medical Association is becoming a powerful, and therefore a formidable body. It can be powerful for good or for evil; in which direction its influence will be cast will depend entirely upon the character of the few men who from time to time must inevitably control its destiny. If they are earnest, honest, and tactful, its influence will make for good, as regards both scientific medicine and medical polity, including the liberty of the individual physician; but if they, or a majority of them—or even a minority of them, if that minority should consist of men of dominating force—lack any of these three essential qualities, the association will become a menace to the profession and through it to the public. For it must be remembered that while the system of government of the association *appears* to represent every member of the association, such representation fails practically, inasmuch as all the power is left, *without veto or revision by the general assembly,* in the hands of the House of Delegates, who, though nominally the overmen, are very liable indeed to be influenced by, and subservient to, the council. To say that the delegates are elected by their home constituencies, and must therefore adequately represent the profession, or at least that portion of it that constitutes the association, does not dispose of the objection to the inherent dangers of the plan; for the constituency is too far removed from the field of action—the *locus in quo,* wherever it may be, of the annual meeting—and the period of the session is too brief and its recess too prolonged, to safeguard the constituency against the very real and pressing danger of having schemes conceived and railroaded through any annual meeting, practically without reference to the wishes of the constituency at large. This danger is further increased by the filtering process through which the delegated authority has to pass before it reaches the council chamber of the national association. The county societies send their delegates to the State societies; the State societies in turn send their delegates to the national association; but it is the council which practically does all that is done; so that there is a constantly increasing leakage of current, so to speak, between the source of influence and the point of its application. That this idea is not imaginary is clearly demonstrated by the committal of the association to the purchase and future maintenance of a medical directory, before ever the matter had been broached to the constituencies. The fact demonstrates beyond a doubt how entirely and *arbitrarily* under the present system the association can be made the controlled instead of the controller. I am using this merely by way of illustration. I am not prepared to express any opinion on the desirability or otherwise of the directory matter—indeed, not being a member of the association, I do not claim any right to do so; but as a member of the profession at large, I do claim the right to observe whither the possibilities of the present organization scheme *may* lead—and land—the association, and through the association's influence every member of the medical profession. For there is abroad in this country, as well as in England, a spirit which is thus frankly expressed by a writer in the *British Medical Journal* for May 19, 1906: "it becomes us as an Association to discourage dissent among ourselves when, as we know, the day is not far off that the British Medical Association *will govern everything connected with the British medical profession.*"* In like manner we fear that the object of this over-elaborate organization of the American Medical Association is not merely to aid "the great aim of Nature, intellectual improvement" and to assist in the procuring of improved conditions of public health and safety, but to *govern everything connected with the American medical profession.* Now, in our opinion there is altogether too much "governing" being done in the present day. It is not "governing" of which the profession—and indeed the world—stands in urgent need to-day, but cooperation towards intellectual development. Let us ponder over the words of one of the greatest medical philosophers that has ever ornamented our profession, the late Dr. John William Draper, who says in his *History of the Intellectual Development of Europe*:† "It is to the honor of both these professions [lawyers and physicians] that they never sought for a perpetuation of power by schemes of vast organization, never attempted to delude mankind by stupendous impostures, never compelled them to desist from the expression of their thoughts, and even from thinking, by alliances with the civil power." If he were alive to-day, would he not view, think you, with jealous, anxious, and watchful eye, this threatened honor of the medical profession? In truth, "Eternal vigilance is the price of" liberty, as well as victory.

The association has grown too unwieldy to be managed in any other way than through some form

*Read at the annual meeting of the American Medical Editors' Association at Boston, June, 1906.

*Italics ours.

†New York: Harper and Brothers. Fifth Edition, 1874; cap. xviii, p. 408.

of delegated authority. Now, all history shows us, and all business men have found out for themselves and invariably act upon the principle, that no great body can ever be made workable, except through the dominating influence of a master mind or minds. There is not, never has been, and I believe never can be, such a thing as an ideally representative government, in which every unit shall have his just and proportional share of the responsibility, for the simple reason that "large bodies move slowly," which is tantamount to saying that in the "continuous adjustment of the organism to its environment" they are unworkable. By a process of continued delegation of authority the actual power must ever ultimately resolve itself into either a dictatorship or an oligarchy, in effect, if not in name. The nearest approach to a really representative government was that organized by Solon for the Athenians, in 594 B. C., as modified by Kleisthenes, in 510 B. C., in which the principle of a working council to consider conditions, prepare remedial measures, and expound them to the general assembly of the whole, who then accepted or vetoed them by their individual votes, secured both practicability and the safeguard of a direct popular control. But it is just this safeguard that the present constitution of the American Medical Association lacks and therein lies the danger. Power is the essential of government; it is necessary to all action. Power implies concentration; diffusion implies weakness. But man is so constituted that, with very rare exceptions, the possession of power suggests with the force of an obsession its exercise in the direction of the individual benefit of him who wields it. When, therefore, power which belongs to the whole is intrusted for execution to a part, it is a paramount necessity that some check should be retained in the hands of the source, lest the part become greater than the whole; a condition which—however impossible to mathematics—history, viewed as fact, has demonstrated to be practically possible, and viewed in the light of philosophy, to be inevitable.

It is therefore clear that if not now, at some future time—a matter dependent solely on the *personnel* of those into whose hands the delegated executive authority shall fall—under the present constitution of the American Medical Association, a tyranny—whether individual or oligarchical does not matter—will arise, in which the few will rule and the majority will be ruled. Issues will crop up in which the few, who, from the necessities of the case must assume responsibility, will dictate one course, while the majority will prefer another but will be powerless to enforce their preference, for a long time, at any rate. Of course, ultimately the matter will readjust itself, as always happens, by a revision of the conditions; but meantime what will take place? The few will have all the machinery of organization in their hands; the majority will be so many isolated units, powerless, because of their isolation. The pages of the official organ will be controlled by those who control the organization itself, and since the admitted purpose is *that it shall be the only medium of communication between members of the profession* (according to the dictum upon which this paper is based), there will be no opportunity for the malcontents, however numerous, to get together and organize in opposition to the oligarchy. As I have said, these things will always right themselves in the long run. When the tension becomes too great to be borne, the man and the occasion will ultimately arise, the thunderstorm will burst, and the atmosphere will be cleared. But in the meantime, what? Years perhaps, of oppression, of injustice, of futile kicking against the pricks, because the many individuals have no channel through which they can come together, can make known their views to one another, and can learn the extent to which their opinions prevail. Each man, with a few of his acquaintances, will realize his antagonism to the powers that be; but while the latter will present their views with a solid front, the former will remain in ignorance of the fact that scattered throughout the country are thousands of their fellows chafing equally with themselves, and that if they could only join hands the usurping oligarchy must fall before their united attack.

If it is true in commercial life that competition is essential to the public welfare, and that monopoly leads to tyranny—and can any one deny that that lesson is being borne in on the world with daily increasing force?—it must be equally true that to permit the establishment of a monopoly in medical journalism will be to sound the knell of medical liberty. The American Medical Association is, in essence, an excellent institution. It exists. It must continue to exist. Its journal can be a powerful instrument for professional and public welfare. No large association is workable, except on the principle of the intrusting of the power in the hands of a few. But the exercise of that power *must be fully safeguarded;* first, by a right of affirmation or veto on the part of the general assembly; and secondly, by the maintenance of independent means of communication that shall afford a means of expression to the dissenting factor, so that it may gauge its strength and learn whether it does not represent more truly than the delegated authority the opinion of the whole.

But there is another side to this question. Many a nefarious scheme has been borne to victory by the use of an incontestably worthy object as a slogan. The *Journal of the American Medical Association* has indubitable right on its side—whether its motives be pure and singleminded or not, is a question I am not called upon to decide—in a demand for a measure of publicity as regards the composition, and of honesty in regard to the claims, of proprietary remedies, those exploited to the physician as well as those offered directly to the public. Speaking to this association at its annual banquet at Atlantic City, in 1904, which I attended as the guest of its president, Dr. Sajous, I then insisted, when the question of advertising and of reading notices was under consideration, that what was most needed and what should be insisted on in the advertising world was *honesty*—the not proclaiming the thing that is not, or denying the thing that is, but everything showing for what it is. I recall distinctly a certain sense of having had cold water thrown over my ideas by one who is now in the forefront of the extreme clamorers for purity and honesty. Some of you may remember it.

But we cannot conscientiously join in the outcry that has been properly raised—and it is immaterial whether that outcry is due to a singleminded devotion to the public good or is simply the crafty use of a worthy object for purely selfish purposes—against patent medicines and nostrums that prey upon the public to its detriment, so long as we do not hold fast to first principles in regard to those preparations that appeal to us for our sanction. As the result of a careful and honest attempt to analyze the legitimate requirements of all parties in this controversy we published in the *St. Louis Medical Review* of *December* 30, 1905, a series of propositions which, with your permission, I will recapitulate, and which I think supply a basis upon which can be erected a rational touchstone, equally fair to the legitimate interets of the public, the profession, and the commercial man. They are as follows:

"(1) The spirit of 'commercialism' lies in the fact that the primary object sought is the material benefit of the individual; public benefit is, when present, a

secondary and incidental motive. (2) When these ends are sought honestly, not pretending the thing that is not, or denying the thing that is, and when they are sought in a legitimate sphere, that is honest commercialism. (3) In professionalism, the primary end is the rendering the service of a vocation; the reward is secondary, and is based on the theory that 'the laborer is worthy of his hire.' It is not accumulation of gain, but livelihood, that is looked for. (4) The physician must either prepare his remedies for himself or engage commercial men to prepare them for him. (5) Pharmacy is a commercial pursuit. (6) It must therefore be judged on commercial principles and its reward must be calculated in terms of gain, not of mere livelihood. (7) This implies the equity of acquiring property right in the results of labor, knowledge, exploitation, convection, and all the various factors that enter into a successful commercial undertaking; and so long as the methods are honest there is no sound reason why physicians should oppose it. (8) Proprietary medicines are in many instances only vastly more elegant, palatable, and in every way superior, forms of the various stock mixtures kept at hand by every dispensing physician, and to be found in every hospital formulary and even in the various national pharmacopœias, for use either alone or as a base, as occasion may require. Therefore (9) a proprietary is not objectionable simply because it is a proprietary. (10) Nor because it consists of a mixture of substances in place of being a definite chemical compound. (11) It is objectionable if, being a definite chemical compound, its chemical constitution, or being a mere mechanical mixture, its essential component ingredients are kept secret. (12) It is objectionable if, while containing any potent drugs, of marked physiological action or toxic character, it is exploited to the laity. (13) This objection,* however, cannot reasonably be made to apply to remedies of known composition, therapeutically classifiable as laxatives, tonics, and the like, which contain no potent or toxic drugs, but may be regarded as legitimate domestic medicines; to mineral waters and beverages as such, to external applications, disinfectants, nutrients, and the like."

Acting upon these principles the *Review* has established the following as its standard whereby an advertisement is judged as to its eligibility or ineligibility:

"We therefore shall not accept in future, and we have advised all our present advertisers that we shall not renew for 1906, the advertisement of any remedy that does not give its *essential* constituents, so far that the physician using it may know, or can ascertain by reference to a Dispensatory or a standard textbook of therapeutics, its physiological action and therapeutic character; and if it contains drugs of pronounced potent physiological effects or toxic character, the amount thereof that he is giving."

I think, gentlemen, that in the foregoing propositions we have honestly and with no ulterior motive, stated the case fairly and equitably for all parties concerned in the present controversy, and it is to me a source of particular gratification that the *Review* has lost only two advertisements as a consequence of insisting on compliance with these principles.

Let us at least, lay down for ourselves—if necessary, each one for himself—a certain definite set of principles which shall govern the admission or rejection of advertisements in the columns of our papers, publish them, and act upon them; by so doing we shall gain the sympathy of many within the association who are aware of the peril that the abolition of independent journalism would entail, but who are firmly and properly convinced of the necessity for some reform in the matter of proprietary medicine advertisements. Experience has convinced me that a moderate course will satisfy the wisest among these, and that a moderate course also, receives the approval of the vast majority of reputable advertisers.

One thing more. It has been said, "Oh, that is all very well, but what guarantee have you that these manufacturers who have 'complied' with your requirements are not fooling you?" I can only shrug my shoulders at such a question. If I write a prescription to-day for purely pharmacopœial products what guarantee have I that the druggist compounds it properly, especially if it suits his interest or convenience to make a change? We *must* trust somebody all the time, in every phase and relation of our life, and I absolutely decline to believe that there is a greater percentage of dishonesty in any one class of any community, or nationality, or religion, or political party, or anything else, than in the other classes. Scoundrels there are, no doubt, among drug manufacturers, as among all other kinds of commercial men, among retail druggists, clergymen, lawyers, physicians, politicians; but, to bring the matter to an *argumentum ad hominem,* because the newspapers daily record instances of marital infidelity is it necessary that every man should look upon his wife with suspicion? This attitude of perpetual suspiciousness indicates a contemptible nature. There is a certain proportion of bad in the world and any one of us may be the unlucky victim of it in one direction or another; but it is neither wise nor right to let it poison our minds in all relations of life. We trust people until we have particular reason to believe those people dishonest. When we find them so, the sensible man just strikes them off the list and looks for some one more worthy of his confidence. But he does not accept as gospel truth every *ex parte* statement that is made by every professional agitator.

To sum up the argument, then, I will, if permitted, quote the following editorial remarks from the *St. Louis Medical Review* for April 7, 1906: "The primal passions and emotions are to-day exactly what they were 2,000 years ago, and there is no reason to doubt that 2,000 years hence they will be exactly what they are to-day. Their mode of expression has altered, that is all. 'Robber barons,' it is true, no longer go forth a-foraging with the strong arm to ravage and waste and plunder; but have we not trusts, corners, combines, which effect with the astute brain exactly the same ends, from the same motive—lust of power, inherent, primal, eternal, as the pride of possession, the promptings of sex, the instinct of life itself? We aim these remarks at no one in particular; it is man, not men, that is to blame. When organization shall have stamped out all individualism, have suppressed all independent journalism, it will have rendered impossible for the minority all expression of dissent; then will it, perchance, be found that the guns mounted for the defense of the city have been seized and turned upon the city itself while men slept."

In conclusion, there is no more dangerous state of mind than that of the fanatic who thinks his mission is to reform the universe. Scholars have spent much time in discussing whether Hamlet was mad. Personally, I have no doubt that he was, and I base my belief on one couplet alone, which I consider ample demonstration of the fact:

> "The time is out of joint;—O, cursed spite!
> That ever *I* was born to set it right."

*To exploitation to the laity.

3837 West Pine Boulevard.

INFECTIONS BY THE BACTERIUM COLI COMMUNE WITH PARTICULAR REFERENCE TO THE URINARY TRACT.*

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THE text for my paper this evening was furnished by a patient who has recently been under my care. Before relating the details of this case, however, I shall take a few moments in stating some of the facts which have been found out as to this remarkable microorganism.

The colon bacillus is a short, thick, straight rod with rounded ends. Its length is on the average three or four times its breadth. It forms no spores and has a moderately active motion, and is found by twos, in small chains, or in groups. It ferments glucose and lactose, produces gas and indol, curdles milk, and gives a neutral red reaction. It represents great variability as to biological and morphological characteristics, such as movement, cultural peculiarities, virulence, etc., on which account there are recognized "colistämme," which, taken as a whole, form the group of the colon bacteria. This marked polymorphism has caused in the past much confusion and discussion with reference to its relations and properties. The virulence and reproductivity of colon bacilli are considerably decreased under the influence of an oxygen free atmosphere. It is an aërobic, faculative anaërobic, non-liquefying bacillus. This fact may possibly be of importance in the relations of the microorganism in the intestines. It produces marked toxins which Vaughan has shown are intracellular. It gives a specific serum reaction which is not as yet diagnostically useful, but is, however, an interesting fact.

Whether the colon bacteria possessed pathogenic properties was for a long time an unsettled and disputed question. It seems now, however, well established that it is a true pyogenic organism, setting up various inflammatory conditions in widely varying portions of the body. Animal experiments amply prove this point. Emmerich found that injections in guinea pigs produced severe gastro-enteric catarrh with cholera-like diarrhea, constitutional symptoms of fever, which were followed later by subnormal temperature, nervous and cardiac symptoms of various kinds, peritonitis, abscesses in liver, spleen, etc., and the appearance of general sepsis. The toxins are the substances which seem to cause death. Injections of cultures into the pleural and peritoneal cavities, into the urinary and gall-bladders produce purulent or serofibrinous inflammations. Several facts seem clear:

1. The colon bacterium varies both in its virulence and pathogenesis.

2. The resistance of the individual to colon bacterial infections is profoundly influenced by the state of the body nutrition.

3. There is little virulence of colon bacilli in cultures from healthy intestines.

4. There is much greater virulence in fresh cultures when taken from diseased intestines than from healthy.

In the healthy man we know that the intestines, particularly the lower, swarm with these bacteria. It has been estimated that 126 billions of bacteria are passed by an adult in 24 hours, and that at least a third of the dried substance of the feces consists of bacteria. With a normal intestine these microorganisms, when taken by mouth or when injected directly into the intestine, are harmless, whereas, when injected into the circulation, serious lesions and even death result. It is pertinent to inquire, then, why do not the colon bacteria in the normal intestine produce disease? We may account for this in several ways: (1) Either the poison must be decomposed in the intestine, or (2) it is held back by the liver and made harmless, or (3) it is not absorbed.

It seems certain that the intact epithelium of the intestines does not absorb the bacteria or their toxins. This absorption occurs only when there is a break in the mucous membrane. For example: as a result of the circulatory disturbances, and its attendant epithelial loss and necrosis, which occur in the walls of the intestine in a strangulated hernia, colon bacteria soon swarm in the fluid in the hernial sac. Experimentally this occurs in ten hours. Likewise severe, long-continued constipation seems to allow the bacteria to pass through the intestinal walls. In this way we find that metastatic abscesses may be formed. Examples of this on record are: A wound, following a thyroidectomy, subsequently suppurated and from the pus pure cultures of colon bacteria were obtained. The same occurred in a pneumonic consolidation following a strangulated hernia operation. Cases of liver abscesses resulting from diarrheas and giving pure cultures of colon bacilli are numerous. Colon bacterial septicemia is frequent in the new-born; this has a malignant course with hemorrhagic manifestations. An epidemic among the new-born was observed in Poland, in which there were icterus, cyanosis, and bloody diarrheas, but no fever; death resulted in from one to four days; postmortem, all the organs were found to contain colon bacteria; the cause was traced to a spring infected with colon bacilli. This microorganism likewise seems to be an undoubted producer of peritonitis and gall-bladder diseases. The bile is normally sterile and has no bactericidal qualities, but on the contrary is a good culture medium (Escherich and Pfäundler). Stagnation of the bile is necessary for bacteria to produce deleterious effects. Injections of colon bacteria in a normal gall-bladder produce no abnormal or pathological results, but twenty-four hours after aseptic ligation of the common duct in rabbits colon bacteria can be cultivated from the bile. It is believed that the "stone-forming biliary catarrh" is the result of the invasion of colon bacteria. This microorganism, in addition, has been isolated in pure cultures from abscesses, osteomyelitis, peritonitis, pleurisy, pericarditis, inflammations of the genitourinary organs in both sexes, meningitis, arthritis, inflammations of the biliary passages, hepatic inflammations both acute and chronic, otitis media, conjunctivitis, pancreatitis, appendicitis, and mastitis, and it may be the only demonstrable lesion in infected wounds, inflamed hernial sacs, splenic abscesses and infarcts, etc. It has been obtained in pure cultures from the blood, and is a cause of septicemia and pyemia. Howard reported a case of colon meningitis which followed an anal operation. In three children who died from colon meningitis, colon bacteria were found in pure cultures from the pus from the ears.

With this necessarily brief, introductory résumé of the more general characteristics of this remarkable microorganism, I desire to consider more specifically the lesions which it produces in the urinary tract.

Bacteriuria has been recognized as existing for a long time. Perhaps the most typical and best known

*Read at a meeting of the Hospital Graduates Club, February 22, 1906.

is that found in typhoid fever, where the typhoid bacilli are excreted from the blood by the kidneys. It usually produces no lesions or symptoms. Bacteriuria due to the colon bacilli we may divide into two classes as to origin;

1. Ectogenous, or bacteriuria from external causes. This is always prostatic or vesical in origin and is due to bladder injections, the use of the catheter or sounds, etc. It is usually benign and has a good prognosis, therapy being necessarily directed only towards the local lesion. Occasionally we find the infection ascending into the pelves and kidneys, either unilaterally or bilaterally.

2. Endogenous, or bacteriuria from internal causes. This variety will alone occupy our attention. It differs totally from the preceding in that (*a*) the bacteria arise in some other part of the organism and pass into the urine; (*b*) their origin is oftentimes difficult to trace; (*c*) it is very rebellious to treatment because the primary focus must first be treated and cured before the bacteria can be eliminated from the urine.

It will at once be asked how the urinary tract becomes infected in endogenous bacteriuria? In answer to this we may say that there are two routes, as follows:

1. By the migration of the bacteria from an organ infected with this organism to a neighboring portion of the urinary tract—that is, by direct contact.

2. By the excretion by the kidneys of bacteria circulating in the blood, absorbed from some primary focus.

Rostoki makes the statement that 80 per cent. of all infections of the urinary tract are due to colon bacteria. This is especially true in children and in women. Cnopf reports forty children who had colon bacterial cystitis, thirty-two being girls and eight boys. All had suffered from enteritis, which he considered the source of the infection. Wreden found that by injecting colon bacilli into the rectum after traumatizing it, colon bacteria could be recovered from the urine in the bladder. He also demonstrated by the microscope that oil and vaseline can be transmitted directly from the rectum into the bladder. A number of observers have isolated colon bacteria from the blood of children sick with intestinal diseases. Trumpp has examined the bladder contents of seventeen children who were ill with follicular enteritis. None of these had had any bladder symptoms, yet in fourteen, nine girls and five boys, he found colon bacilli in the urine. In men we may say that the most frequent endogenous, or internal, method of infection is by the intimate contact of the rectum with the prostate, favoring the emigration of bacteria from the rectum directly into the bladder and prostate. This probably occurs through the medium of the lymphatics. In women the shortness of the urethra as well as the nearness of the meatus urinarius to the anus favors the entrance of the bacteria by way of the urethra. Infections through the medium of the general blood-current seem to occur equally in the two sexes.

Infection of the prostate may remain limited to that organ, producing continuous or intermittent bacteriuria, or it may extend to the bladder. This cystitis may remain localized in the bladder or the inflammation may extend upwards into the pelves of one or both kidneys. This ascending infection occurs in one of several ways: 1. Upward through the ureter. Bond (Address in Surgery before the British Medical Association, 1905) recorded that he applied sterilized indigo granules to the orifices of various mucous passages and found that the granules were somehow transmitted up these passages in the face of the natural stream of contents, and after a day or two could be identified at various distances above. Thus, indigo applied to the lips of the uterus was found a day or so later in a pyosalpinx, an in another case even in the peritoneum around the ostium abdominale. Indigo placed in the rectum was found in a cecotomy wound three days later, although the bowels had been opened in the interim.

2. Along the lymphatics the infection may be transmitted upwards. The lymphatics of the prostate, seminal vesicles, and bladder connect directly with the lymphatics along the course of the ureter, which in turn connect with the lymphatics of the hilum of the kidney, and these with a subcapsular network around the kidney, which likewise sends branches into the cortex of the kidney and into the fatty capsule surrounding it.

We then have frequently, in an ascending infection, the following sequence of events: prostatitis, cystitis, ureteritis, pyelitis, suppurative nephritis with or without miliary abscesses, diffuse interstitial or parenchymatous nephritis. From the kidneys the organisms may press into the general circulation and produce septicemia or pyemia. Schmidt reports a case of ascending pyelitis in which colon bacteria were found in the pus taken from the knee-joint.

The kidneys are usually the first organ of the urinary tract infected when the general circulation contains bacteria absorbed from some primary focus, such as the intestines, etc. From the kidneys as starting points, there may be descending infections of the pelves, bladder, etc. Lastly, the kidneys may be primarily infected by the direct extension to it of an inflammation in the colen, such as rectocolonic appendix abscess, etc.

Barnard (*Lancet,* October 28, 1905) reports a number of cases of multiple, unilateral abscesses of the kidney, due to acute ascending infections of the normal urinary tract by the colon bacilli. The majority of these cases were treated by nephrectomy and the remainder by nephrotomy, with great success. Janet reports a number of cases of bacteriuria resulting from mucomembranous enterocolitis. Not until the colitis was cured was there any benefit seen from treatment of the bacteriuria.

Every attack of constipation doubtless sends myriads of colon bacilli through the kidneys, and from every infected wound a sufficient number of streptococci and staphylococci enter the circulation and pass through the kidneys, to cause suppuration many times over in those organs, if only they are vulnerable, but this is not the case. Unless there is some trauma, irritant, or congestion, the bacteria are passed off without so much as multiplying in the urine (Keyes). It is believed nowadays that the spontaneous infection of patients with enlarged prostates is due to the absorption of colon bacilli from the intestines as a result of constipation, hence great stress should be laid on keeping the bowels of prostatics clear in order to avoid this possible source of danger. While not generally appreciated, it is undoubtedly true that urinary disturbances seen in cases of appendicitis are often due to the presence of colon bacilli in the urine (Lancien, Thesis Paris. 1902).

Sir J. Barr (*British Medical Journal,* January 20, 1906), in an article on arteriosclerosis, says that he has suspected for some time that the toxin of the colon bacillus was an important factor in the production of this disease, for examination of the blood of arteriosclerotics showed that in 55 per cent. of the cases it gave complete agglutination with the

colon bacillus, as compared with only 20 per cent. with the blood from persons free from arteriosclerosis. Flexner has called attention to the fact that chronic Bright's disease and uremia are often complicated by a terminal infection with the colon bacillus. Hence the necessity for careful attention to the intestinal condition in patients with nephritis.

The frequency with which colon bacilli are found in infections in the various parts of the urinary tract is shown in the following tables:

Cystitis: Krogius found colon bacteria in 16 out of 20 cases; Morelle, in 13 out of 17; Denys, in 17 out of 25; Melchior, in 24 out of 35; Douglas, in 14 out of 20; Brown, in 31 out of 60; Schmidt, in 60 out of 73; Rostoki, in 80 out of 120. Total, 255 out of 370 cases, or 69 per cent.

Pyelonephritis: Albarran found colon bacteria in 15 out of 33 cases of ascending pyelonephritis; Schmidt, in 12 out of 14; Savor, in 13 out of 19. Total, 40 out of 56 cases, or 71 per cent.

Infections of the whole urinary tract: Escherich found colon bacteria in 58 cases out of 60; Brown, in 38 out of 80. Total, 96 out of 140 cases, or 68 per cent.

The effect of the colon bacterium on the urine is not to disturb the distribution of the nitrogen in urea, ammonia, and non-urea compounds. The urine containing this bacillus is not decomposed, but retains indefinitely its normal reaction to litmus. While remaining acid, the urine acquires a characteristic pungent odor, readily recognized, sometimes almost fecal, and shows a thick, viscous deposit. This persistent acidity of the urine is characteristic also of cystitis caused by the tubercle and typhoid bacilli and by the gonococcus. The ordinary pyogenic organisms always cause an alkaline cystitis. In a pyelitis unattended by cystitis the urine is almost invariably acid.

Diagnosis.—It must be borne in mind that suppurative nephritis and pyelitis are not independent conditions, although undoubtedly the inflammation has its beginning in the one or the other. It is impossible to distinguish clinically pyelitis without nephritis, or nephritis without pyelitis, except only those rare cases of renal abscess which begin in the renal parenchyma and do not implicate the pelvis. With this one exception, suppurative nephritis does not occur without pyelitis, nor does pyelitis, whether catarrhal or suppurative, occur without nephritis (Keyes).

To treat thoroughly and intelligently patients with urinary infections, it is essential to ascertain certain facts:

1. The past and present history, with particular reference to infectious diseases, bowel disturbances, venereal diseases, etc., onset and symptoms of the present difficulty.

2. Etiology of the infection—whether from external or internal causes, and, if internal, where the primary focus is located.

3. The nature of the infecting organism ascertained from cultures of the urine drawn by sterile catheter, etc.

4. Careful physical examination, including that by means of the cystoscope and the ureter catheter in appropriate cases, and this is to be supplemented by repeated complete chemical and microscopical examinations of the urine.

5. What organ or organs in the urinary tract are involved?

6. Is the infection an ascending, descending, or stationary one?

Simple bacteriuria is the presence of great numbers of bacteria (most frequently the colon bacilli) in the urine without obvious parietal lesion. Subjective symptoms are absent or there is only slight frequency of micturition.

The urine shows an even dusty cloudiness which is present equally at the beginning as at the end of urination. It is acid in reaction and has a peculiar sickening odor. There is no deposit on standing nor is the haze affected by heat or chemicals unless albumin is present. In a drop of the urine under the microscope can be seen innumerable, squirming colon bacilli intermingled with a few epithelia and leucocytes. This condition may continue for weeks or months, to disappear spontaneously, or to go over into pyelonephritis, cystitis, prostatitis, etc. The lesser grades of colon cystitis differ from simple bacteriuria only through greater tenesmus and burning on micturition, the increase of mucus and pus cells in the urine, tenderness over the bladder, etc. It is a common mistake to call every case of pus in the urine "cystitis." This is most erroneous, for the three characteristic symptoms of pain, pus, and frequency of micturition are often due to such widely differing conditions as pyelonephritis, prostatitis, and seminal vesiculitis without the vestiges of any cystitis whatsoever. Again the inflammation of the bladder is often only one part of an inflammation of the whole urinary tract. Therefore the surgeon has two problems to solve (Keyes): (1) The existence or absence of cystitis; (2) the presence or absence of pyelonephritis, prostatitis, and seminal vesiculitis.

A few points only can be mentioned in the differential diagnosis. In cystitis the urine is always purulent throughout both the first and second glasses. Pus from the kidney sinks to the bottom of the glass and forms a compact level base, like sand, while bladder pus, on the contrary, forms a billowy, fluffy deposit, and often does not sink fully to the bottom of the glass, but remains more or less suspended in the fluid. When cystitis and pyelitis exist together, a very simple test often suffices to distinguish them (Keyes). After the patient has urinated in two glasses the bladder is gently irrigated with a hot boric-acid solution until the fluid returns clear. An hour later the urine is drawn with a catheter, and if it is then as purulent as the second glass before the bladder washing, the pus comes from the kidney. In patients with pyelonephritis we always find in the urine pus, bacteria, albumin, renal casts, and epithelia with possibly deficient excretion of solids, and on physical examination we may elicit tender and enlarged kidneys. The relation between the albuminuria and the pyuria is one of the most valuable means we have of differentiating pyelitis from cystitis, the best being probably ureteral catheterization.

Chronic cases of colon-bacillus infections of the urinary tract often simulate closely tuberculous inflammations. Very recently Allen (*American Journal of the Medical Sciences,* March, 1905) reported a case of chronic pyelitis, diagnosed as renal tuberculosis by himself, and operated upon as such, which proved to be an infection of one of the kidneys with a pure culture of the colon bacillus.

The presence of complicating calculi in the renal pelvis, ureter, or bladder must always be considered as a possibility.

The bacteriology of the intestinal microorganisms is fully discussed in the *Münchener medizinische Wochenschrift,* Nos. 37, 45, and 46, 1905. These researches set at rest many speculations as to their functions of the bacteria in the intestines. It seems certain that the colon bacilli elaborate materials which exert marked inhibitory influences upon the putre-

factive bacteria in the intestines, particularly the *Bacillus putrificus coli*, and in this way prevent the origin of intestinal autointoxication. The same is true as to its inhibitory effects upon the growth of typhoid, paratyphoid bacilli, etc.

The history of my case is as follows: The patient was an intelligent, well educated man of fifty, single, and free from any previous venereal taint. Five years prior he had been operated upon for a gangrenous appendicitis of severe course. Following this for a full year he had a severe type of ulcerative colitis, from which he recovered, but which left him with an irritable condition of the colon and rectum. From time to time there occurred attacks of diarrhea with mucus in the stools. The patient was exceedingly gouty, the disease manifesting itself in neuralgias and muscular pains, for which he spasmodically dieted. As is so often the case in gouty patients, who seem predisposed to bowel disturbances, he was able to control fairly well the looseness of the bowels by the use of the salicylates. The urine had always been free from albumin and casts, but after the ingestion of a moderate amount of sweets, sugar would appear in the urine, only to disappear on cutting off the sweets. For a year prior, the man had been tormented with pains in the rectum and anus, from which there was a protrusion from time to time. Examination on December 18, 1904, revealed an exquisitely tender ulcer, the size of a silver dollar, situated on the anterior aspect of the sphincter ani and extending up the rectum for about two inches. In addition there was a number of fair-sized hemorrhoids. On December 23, 1904, one of our most distinguished and competent rectal specialists, under chloride of ethyl and ether anesthesia, dilated the sphincter, removed the hemorrhoids by the clamp and cautery method, and thoroughly cauterized the ulceration, after partially dividing the sphincter ani with the knife at the place where the ulcer impinged upon it. Catheterization was necessary that night at 5 P. M. and the next morning at 11 A. M. Preliminary to the passage of the catheter the hands were washed as well as the glans, and a new, previously unused catheter was boiled for ten minutes. If ever infection of the bladder by a catheter could be excluded, this would seem to be one of the times. Thereafter the urine was normally voided. Conditions remained without incident until the evening of the third day after the operation, when the temperature rose to 101.4°, the pulse was 100, and the patient began to urinate every hour. On the fourth day the bowels moved for the first time as the result of an enema. Vesical tenesmus then began to be torturing and was incessant. The temperature rose to 102.8°. On December 29, the sixth day after the operation, the conditions were much worse, the patient became delirious and unmanageable, the pain with each urination was excruciating and intolerable, micturition occurring every few minutes. The temperature was 102° at noon and 104.4° at midnight. Examination of the urine for the first time after the operation, on December 30, the seventh day after the operation, by Dr. H. T. Brooks, showed the following: sp. gr. 1020, excessive white sediment, acid, 10 per cent. of albumin with Heller's test and a strong trace with Esbach's, no sugar with Fehling's and Nylander's tests, urea 2.3 per cent., phosphates and chlorides normal, indican excessive, occasional hyaline casts, coarse granular, epithelial, and mixed casts, innumerable isolated and masses of pus cells. Forty ounces were passed in the twenty-four hours. Dr. Brooks made the note that the albumin was undoubtedly of renal origin. It was self-evident then that we had to deal with an infection of the whole urinary tract. If the bladder were the first organ involved, the inflammation had very rapidly ascended to the pelves and kidneys. Possibly the infection absorbed from the raw areas in the rectum was carried to the kidneys first by the blood and in descending had infected the bladder. These points will be discussed later. On December 31, the eighth day, the temperature in the morning was 99° and at 10 P.M. 102°, and pulse 88. No chills or sweating. Muttering delirium with intervals of consciousness. Excessive vesical tenesmus. Without catharsis, very loose movements with blood and much mucus, and considerable rectal tenesmus occurred. On January 3, the eleventh day, a culture of the urine drawn by sterile catheter showed (Dr. Brooks) "the biological and morphological characteristics of *Bacillus coli communis*, and it is my belief that this is the main if not the only factor." One hundred and twenty-eight ounces of urine were passed in the twenty-four hours (due to large amount of ingested water), sp. gr. 1007, acid, 5 per cent. albumin, normal indican, chlorides and phosphates, numerous casts, and much pus; no blood. The patient was wildly delirious at times. Urination was involuntary and frequent. Highest temperature, 101°. Conditions remained the same until the fifteenth day, January 7, when all the symptoms became worse: Wild and noisy delirium, frequent, painful, and involuntary micturition; the eyes were much swollen with edema and a conjunctivitis was present, probably due to infection carried to the eyes by the fingers. The urine contained 30 per cent. of albumin, indican excessive, and innumerable casts. This examination showed that the cystitis had lessened, but the nephritis had increased. The question which then caused the greatest anxiety was to what extent the infection would go on to involve the kidneys. The eye condition now gave grave concern for a number of days. The edema became worse and involved all the structures external to the sclera, and the lids were nearly closed. There was no edema elsewhere in the body. On January 12, the twentieth day, there began some improvement in the renal and vesical conditions, the albumin being 15 per cent. On January 14, the twenty-second day of the disease, the eyes markedly improved, coincident with an improvement in the urine, of which forty-one ounces were passed in twelve hours, showing slight trace only of albumin, excessive indican, urea 1.4 per cent., casts and pus the same. There was also some improvement in the delirium, which was not so wild, although the patient was constantly irrational and very restless, and needed to be continually watched, as he had a fixed idea that he was being poisoned by his attendants and that he must get out of bed to avoid them. General improvement continued until January 18, the twenty-fourth day. At this time he was not voiding urine oftener than every two or three hours and without pain, but it was often involuntary. There then began some exacerbation of the kidney inflammation, the specimen showing 5 per cent. albumin, urea 1.6 per cent., and numerous casts of all kinds. The patient was very restless and incoherent. The eyes were still swollen, but this caused no anxiety. Blood examination: hemoglobin 78 per cent., red cells 4,544,000, leucocytes 8,400, blood plates numerous, clot formation delayed, alkalinity 239 Mg. per 100 c.c. calculated as NaCH (diminished). No nucleated reds, numerous poikilocytes. Differential count: Polynuclear neutrophiles 73 per cent., lymphocytes 13 per cent., mononuclears 5 per cent., eosinophiles 6 per cent., transitionals 3 per cent. Dr. Brooks remarked:

"It is to be noted that there is no leucocytosis, which is usually pronounced in well-marked cases of pyelitis and cystitis. The increase in the eosinophiles may be due to gastrointestinal disturbance."

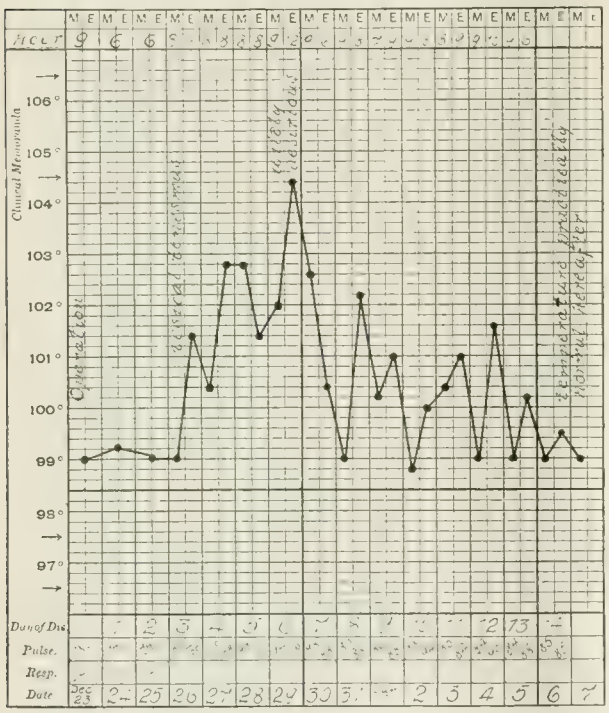
The condition remained practically unchanged until February 4, the forty-third day after the operation. The urine, which was never decreased in quantity, habitually contained 5 per cent of albumin and innumerable casts, with pus and mucus. The mind occasionally showed glimmers of intelligence, but these periods were rare; there was no sleep without large doses of hypnotics, and restlessness was distressing. Talking was incessant and incoherent. Micturition and defecation were often involuntary. The frequency of the former was much improved, the urine being retained about three hours and its passage being unattended with pain. The eyes had improved for a time with the improvement in the kidneys, but with the increase in the albumin and other elements, the edema returned, and with this began a superficial ulceration of the cornea under the upper lids, which caused grave concern. Encouragement, however, was derived from an examination of the fundus of the eyes under homatropine solution. No abnormality of the retinæ, optic discs, or blood-vessels was found. The cerebral excitation was thought to be due to colon bacillus toxemia rather than to faulty excretion from the kidneys. A culture of the urine again on February 4, the forty-third day, showed colon bacilli in large numbers. The patient's general condition was rapidly deteriorating. Exhaustion and weakness were becoming pronounced, and emaciation was steadily increasing. On February 9, improvement took place in the urine. The albumin had decreased to a trace, casts were less numerous, and the pus cells were present in small numbers. The ulceration under appropriate treatment now disappeared from the eyes and left no trace, and the edema of the conjunctivæ and lids was almost gone. Dr. Brooks remarked that "the evidence in the kidneys of a suppurative process had markedly declined." There was some slight improvement in the mental symptoms, but the patient was still irrational most of the time. On February 23, the sixty-second day after the operation, there began an exacerbation of the symptoms again. The urine was acid, 1022, albumin 10 per cent., excess of indican, urea 1.4 per cent., very numerous casts of all kinds, and many pus cells. Acetone and diacetic acids absent. Cerebral excitement was increased. February 28, albumin 15 per cent., and "evidences that the kidney parenchyma was becoming more involved." The patient refused food and medication, and was wildly delirious. Urine and feces always passed involuntarily, the former about every four hours. For the past few days and nights there had been intervals of Cheyne-Stokes breathing. The conjunctival tissues became enormously swollen so that they protruded between the lids. The conditions were alarming. On March 1, the sixty-eighth day after the operation, at 6 A.M., there was a failing of the pulse which required vigorous stimulation. The cerebral condition was one of apathy, but no coma. At 8 P.M. the temperature was 102.8° and the pulse 160 and bad. A hypodermoclysis was given of a quart of salt solution. This was repeated the next morning, and as a result the pulse was much improved and it remained so. March 2, temperature 102.4°, pulse 105. The patient was wildly delirious. Very free catharsis was now administered with the hope of getting rid of some of the poison, which was evidently very powerful. March 3, the seventy-first day after the operation, albumin 5 per cent., urea 2.7 per cent., excessive indican, numerous casts and pus cells. March 10, albumin 10 per cent. The patient was semi-rational for the first time on this day, the seventy-eighth day after the operation, for a short while. One of the puncture points for the hypodermoclysis showed an abscess, which was opened. Culture from this showed no colon bacilli, but *Staphylococcus epidermidis albus*. On March 13, the patient became conscious and remained so for four days. Evidence of colitis, diarrheal movements, with mucus and slight traces of blood. March 14, albumin 4 per cent., casts less numerous. March 18 and 19, irrational again. March 20, the eighty-seventh day after the operation, urine negative as to albumin with Heller's test, faint trace with Esbach's. Very marked decrease in the number of casts and pus cells. The patient was perfectly rational, but mentally excessively depressed; he would not speak, and often wept. Culture of urine showed still the presence of some colon bacilli, that is, eighty-eight days after the operation.

On March 23, the ninety-first day after the operation, the patient was perfectly conscious for the whole twenty-four hours for the first time. Urine acid, 1017, minute trace of albumin, excessive indican, urea 1.7 per cent., numerous casts, and a few pus cells. There was marked mental depression; the patient was hungry; he was emaciated to a skeleton, and suffered pitiable physical weakness, being unable to move himself in the bed; the eyes were normal.

From this time, however, the patient went on to make an uninterrupted recovery. A colitis of moderate severity caused some discomfort, but came easily under control. On March 30, urine 1012, clear, acid, no albumin with Heller's, minute trace with Esbach's test, urea 1 per cent., normal indican, a few hyaline and finely granular occasional epitheliated, rarely small, fatty casts, also an occasional leucocyte. Urinates about seven times in the twenty-four hours and can hold as much as seven ounces at a time in his bladder without discomfort. April 1, the ninety-ninth day after operation, culture of the urine showed the *absence* of colon bacilli. April 12, the patient sat up in a chair for the first time for half an hour. Extreme weakness. Urine 1016, clear, acid, no albumin with Heller's, minute trace with Esbach's test, urea 1.4 per cent., excessive indican, small number of small hyaline and finely granular casts, an occasional pus cell, and a few large uric acid crystals. April 27, examination of the urine gave the same results as on April 12. The patient was gaining strength very fast; mental depression and hebetude still continued. May 13, he went into the country. He was very emaciated, but could walk up one flight of stairs. He urinated about seven times in the twenty-four hours, without discomfort. Bowels a little irregular and some pain on defecation in the rectum, in the region of the operation. May 27, urine 1018, acid, clear, no albumin with Heller's, minute trace with Esbach's test, urea 1.7 per cent., excessive indican, numerous small hyaline and fine granular, occasional epitheliated casts, and a few isolated leucocytes. The patient eats, sleeps, and feels well. Flesh and strength rapidly returning. June 15, examination of the urine gives the same particulars as the last.

Physical examination of the patient at no time elicited any enlargement or tenderness of either kidney. The liver and spleen never were enlarged nor tender. There were no lung symptoms at any time, and the pulse throughout ranged from 80 to 90, except once for twenty-four hours, when there was a dangerous attack of cardiac failure which

nearly cost the patient his life. The urine at no time was diminished in amount, and there was no hematuria. The urea approximated the normal in amount. Albumin varied from a strong trace to 25 per cent. There was habitually an excessive amount of indican present, as well as an enormous number of pus cells and casts of all kinds. At times there was some decrease in the excretion of the solids. The most prominent symptom was the wild delirium which was always present with very slight intermissions, and lasted for practically eighty-five days. It was an active, busy delirium, attended by great restlessness and incessant bodily motion. It was certain that some powerful cerebral irritant was acting. No sleep was obtained except under the influence of massive doses of hypnotics. There never was any vomiting, and the stomach throughout maintained its functions perfectly. The bowels were inclined to be loose in the later stages of the disease, due to the previous colitis, while at first there was some tendency to sluggishness, easily relieved by enemata. Tympanites never was troublesome. There was not



the slightest evidence at any time of any edema of the body except that in the eyelids, which was probably due to a local infection. The first symptom was excessive vesical tenesmus and some rise in temperature on the third day after the operation. On the sixth day the temperature rose to 104.4°, following which it gradually declined to the normal, which it reached on the fifteenth day. The temperature continued normal throughout the remainder of the sickness except for some slight occasional rises. Urination continued frequent for about three weeks, when it became normal and remained so thereafter. Cultures showed that the urine contained pure growths of colon bacilli for about ninety-five days.

The etiology of the infection is somewhat uncertain, and opinions on this point have varied widely. There seems to be no way of clearing up the uncertainty. The catheter will be blamed at once by possibly the majority of physicians. Personally, I do not believe that this was the mode of entry of the bacilli, for all precautions were taken which could have been taken. The following seems to me to be a perfectly rational explanation: The man had had a diseased intestinal canal for some time, and, from what has been already said in the introduction, we may assume that the colon bacilli in his intestines were not only more numerous, but were also much more virulent than is normally the case. From the raw areas on the anterior surface of the rectum colon bacilli passed into the lymphatics of the perineum and thence into the bladder, from which they ascended, either by way of the ureters or by the lymphatics of the ureters, into the pelves and bodies of the kidneys. This ascending infection must have been a very rapid process, for the kidneys were severely involved four days after the onset of urinary disturbances. Another way in which this infection may have arisen is that the bacilli were absorbed from the rectal wounds directly into the general circulation, and the kidneys, in excreting them, were themselves infected, and descending infection of the bladder followed.

The prognosis as to permanent recovery from the ill effects of such a severe lesion of such important organs as the kidneys would seem to be poor. One would naturally expect permanent, serious changes in the kidney. This man, however, has regained perfect health in every way. He has no more frequent micturition than before the operation. The urine on February 12, 1906, ten months after convalescence began, is perfectly clear, acid, sp. gr. 1012; it is negative to each of the albumin bodies of serum albumin, nucleoproteid, serum globulin, and albumose, no casts, a few mucus cylindroids, no pus. His convalescence lasted four months, but his restoration to health has been perfect in every way.

The treatment of this patient presents certain points of interest. It was recognized early that the process was one of infection of the urinary tract, with severe systemic poisoning from colon bacillus toxins, rather than from defective excretion by the kidneys. The bladder was irrigated twice a day with 1-1,000 solution of permanganate of potassium, each irrigation being continued until the solution came away clear. Marked benefit of the vesical symptoms was quickly accomplished with this treatment. To combat the infection in the kidneys, sixty to eighty grains of hexamethylenamine (urotropin) combined with twenty to thirty grains of benzoate of sodium, were administered in divided doses in the twenty-four hours with large draughts of water. At no time did the urine become alkaline. Large doses of hypnotics were required to gain some rest for the patient. The most efficient combination was found to be ten to twenty grains of sulphonethylmethan (trional), combined with fifteen grains of chloralformamid (chloralamid), supplemented by half-grain doses of codeine, either by mouth or by hypodermic, repeated as often as necessary to effect the purpose, sometimes no less than three or four grains of the latter being given of necessity in a few hours.

Great difficulty was experienced in getting the patient to take any medication, as he had a fixed delusion that he was being poisoned. Rectal enemata of salt solution, although strongly indicated, on account of the tenderness in the rectum, provoked such a contest that they had to be abandoned. Milk in large quantities was well taken and well borne. Free catharsis was maintained by castor oil and proved very beneficial upon the cerebral condition. Disinfection of the intestinal tract was attempted by salol at first, but later izal oil (one of the cresols) was substituted with marked benefit.

In treating urinary infections it will be admitted at once that we must make the urine as antiseptic as possible. Probably the best agent that we have is hexamethylenamine (urotropin). This when administered by the mouth is broken up into ammonia and formaldehyde gas, which latter is thus liberated in the urine, and to which its antiseptic properties are due. It is my feeling, however, that large enough doses are not ordinarily administered in urinary infections, and I base this opinion on the following: Dudgeon (*Lancet*, January 20, 1906, page 159) reported experiments with solutions of this drug. He made these solutions with a broth medium in strengths of 0.1, 0.5, and 1 per cent. He obtained constant results with cultures in these solutions. Typhoid bacilli grew well in the 0.1 per cent. solutions, fairly well in 0.5 per cent. solutions, and there was no growth with 1 per cent. solutions. Colon bacilli from peritonitis and cystitis gave abundant growths in 0.1 and 0.5 per cent. solutions, and a fair growth in 1 per cent. solutions.

If these experiments are correct, then possibly we may be allowed the following line of argument: Basing the average amount of urine passed in twenty-four hours as fifty ounces, to produce a 1 per cent. solution with this amount of urine, it would be necessary to administer 250 grains of hexamethylenamine (urotropin) in the twenty-four hours. According to the above experiments, even with this amount we would be merely inhibiting somewhat the multiplication of the organisms. Certainly in most cases even half this amount could scarcely be given, for, while the drug does not disturb the stomach, at times it seems to produce vesical irritation (Keyes, also *Lancet*, December 9, 1905, page 1686), which is always the signal to decrease or temporarily discontinue the drug. At times it has produced hematuria, and in a few cases renal colic. The drug seems to act best in acute infections, and is of much less value in chronic cases. It is best to administer it tentatively in small doses at first, five grains every four or six hours, and to push it as rapidly as possible to fifteen or twenty grains every four hours. A convenient way to administer it is to dissolve the total amount to be given in the twenty-four hours in a quart of water, and in this way whenever the patient takes a drink of water some of the remedy will necessarily be administered.

If the urine be alkaline, it should be rendered acid by giving acid sodium phosphate, benzoate of sodium, boracic or benzoic acids, and when the urine is acid, it is best to make it alkaline by administering bicarbonate of sodium, or the citrate, acetate, or bitartrate of potassium (or all three in combination), because the urea-decomposing organisms have their growths hindered by an excess of acid, while the microorganisms which retain the acidity of the urine, or render it still more acid, are inhibited in their growth by an alkaline condition of the urine.

It must always be borne in mind that, if there be rebellious or recurring infections of the urinary tract, caused by absorption of colon bacilli as a result of enterocolitis, constipation, etc., there will be no cure of the urinary symptoms until the intestinal condition is overcome, to effect which a milk diet, intestinal antiseptics, colon lavage, etc., may be necessary.

50 East Fifty-third Street.

Cracked Pot Sound.—Mangolt says that this phenomenon may be elicited over the abdomen in conditions in which there is narrowing of the lumen of the gut through pressure, kinking, etc.

ALBUMINURIA: RECOGNITION OF THE ALBUMIN-BODIES IN URINE.*

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The term "albuminuria" is loosely used for the presence of any albumin-body, occurring in the urine, which responds to the tests for albuminous material. One may see at once, in looking over the subject of albumins and in considering the albumin-bodies existent in the human organism and their physiology, that it is possible to have in the urine several kinds of albumin-bodies dependent upon various conditions, and, further, if one take care to search for these various bodies they can be proven in many urines. During the last year and a half we have found, in going over the daily urine examinations carefully, most frequently serum-albumin and "nucleo-albumin" and the "mucin-like body," less frequently serum-globulin and fibrin and fibrinogen; histons we have not been able to demonstrate even when the urine was rich in hemoglobin and we have not found Bence-Jones albumin-body. The traces of digestive albumose (deutero-albumose), which occur not infrequently in urines, and peptone are not here considered since they do not respond to the usual tests for albumin (excepting Esbach's reagent) and have not the significance of the native albumins and proteids (Conheim's classification). Furthermore, the two bodies responding to the test for "nucleo-albumin," viz., nucleo-proteid of cell nuclei and "nucleo-albumin" (phosphorus-holding albumin), we have not attempted to separate, and the positive nucleo-albumin reaction apparently is of little or no significance; yet it must be recognized that such reactions may be readily confused with the slight reactions for serum-albumin when the ordinary tests are used, as we have demonstrated repeatedly with nitric acid, and heat plus nitric or acetic acid. Recognizing the valuelessness attached to positive nucleo-albumin reactions, the testing for albumin resolves itself into this — to employ a method which will rule out nucleo-albumin and at the same time show any trace of serum-albumin, serum-globulin, fibrin, fibrinogen and Bence-Jones albumin. The albuminuria following excessive ingestion of egg-albumin will not be considered, since its source is wholly exogenous and the condition is not related to the subject under consideration.

Theoretically the consideration of the various albumin-bodies possibly coming under the term "albumin in the urine" leads one into the study of a rather bewildering number of products having origin in or from the body tissues and a still more bewildering mass of chemical tests for these products.

The following outline has been divided into the albumin-bodies (1) occurring in the urine and (2) those uncertain and not considered.

(1) Albumin-bodies occurring in the urine:

a.—True albumins:

- Serum-albumin.
- Serum-globulin.
- Fibrinogen and fibrin.
- Nucleo-albumin.
- Bence-Jones albumin.
- Albumin from bacteria and vegetable cells.

*Read at a meeting of the Section in Medicine of the New York Academy of Medicine, March 29, 1906.

b.—Proteids:

Nucleo-proteids.
Hemoglobin.
Methemaglobin.

Hematin... } Derivatives of hemoglobin, not proteid, but thrown out of solution by acetic acid.
Hematoporphyrin...

Glyco-proteids:
Mucin.

Arising from albumin-bodies and related to them—

Give biuret. [Urobilin also gives a biuret color with $CuSO_4$ and NaOH.]

Albuminoses: Precip. with "salting" and acid; sol. in heat, reappearing on cooling.
Primary albumoses. } Not found in urine?
Hetero-albumoses.. }
Proto-albumoses... }
Deutero-albumose: Frequently found in traces.
Peptone: No response to "salting" and heat and acid.

(2) Uncertain and not classified:

a.—Cell-globulin:
"Harn-globulin" (= urine-globulin). Huppert says is hetero-albumose.

Histon; as globin in hemaglobin, particularly. Does not occur free, but with a prosthetic group as in Hb or with nucleo-proteid. Thrown out by ammonia and dissolved in excess; as albumose with HNO_3 cold, and heat; readily digested by pepsin and trypsin, not by erepsin.

Protamine; not in urine (unless possibly from tubercle bacilli or from the albumin radicle of nucleo-proteid); not thrown out by heat.

b.—Proteids. "Harn-mucoid," stands near mucin and acts as does mucin; forms the "nubecula," says Mörner (Conheim, p. 280).

c.—Albuminoids. Melanine; does not give usual albumin reactions (Conheim, p. 309).

For convenience the following headings under A (I and II), B, and C, may be made relating to the condition giving rise to albuminuria, detection of albuminuria, and the usual relation to faint and massive reactions to albumin-bodies found.

A.—Albumin-bodies in the urine may arise (I) from normal tissue, or through impairment of tissues along the genitourinary tract; the renal function is not disturbed; (II) not from the genitourinary tract, but from the blood-stream, lymph. through (*a*) normal or not necessarily impaired renal tissues (as a "foreign albumin"), or (*b*) through impaired renal tissues.

B.—Tests, and reasons for "salting" and acetic acid and heat test.

C.—Separation into (*a*) frequency of occurrence and (*b*) faint and massive reactions.

A. I.—Albumin-bodies from normal tissues, or through impairment of tissues along the genitourinary tract; not nephritic: mucin, nucleo-albumin, nucleo-proteid, serum-albumin, serum-globulin, fibrinogen, fibrin, hemoglobin and derivatives.

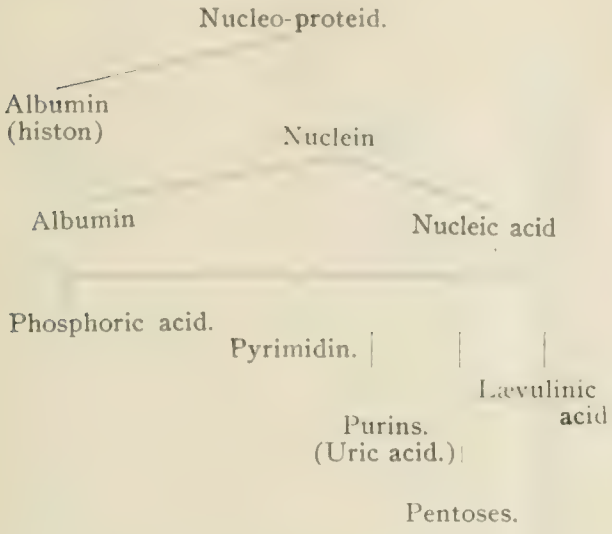
We shall consider, first, the various albumin-bodies which may arise from the normal tissues or through some impairment of tissues along the genitourinary tract with no disturbance of renal function; from the renal tissue and the cystic mucous membrane and in the male from other neighboring sources, as the prostate and reproductive glands, the "mucinlike" body, which in part forms the "nubecula" found in most urines on standing, is apparently thrown off under normal conditions whether as a secretion from the surface cells or from between the cells or from just what source is not known, and for practical purposes this body may be passed over, for it can scarcely be confused with other products since the response to ordinary tests is markedly different.

It is to be noted, however, that this "mucin" reacts in dilute solutions poor in neutral salts, after overacidulation in the cold, as does the nucleo-albumin, to be mentioned later. The large amounts of mucous material mingled with pus found in certain conditions of inflammation are probably not of the same composition as this "nubecula" mucin, and this again does not concern us, for the albumin-bodies in such gross inflammatory conditions are not of diagnostic importance. A mucoid nucleo-albumin is recognized as found in solution in the semen composed of testicular and prostatic and the allied gland secretions and an albumose-like body in solution, described by Posner as from the prostate, has not been recognized by other investigators. Thus, the proteids in solution in the semen may be classed, so far as we know, with the mucin-like bodies and the nucleo-albumin which may occur in the urine under normal conditions.

Whether the "nucleo-albumin" found so frequently under apparently normal conditions has any significance remains to be determined. According to Halliburton and Lilienfeld a nucleo-albumin is to be found in renal cells, and one frequently finds a substance responding to the tests for nucleo-albumin in the urine. It has been suggested that such an albumin-body is thrown off into the urine when the renal tissue is under "irritation"—an indefinite statement of little significance so far as we know to-day. Whether its source be renal, cystic, prostatic, testicular, or urethral, this body is of importance to us, from the fact that we find it alone responding to the tests for albumin, as a faint reaction (a "trace") in 30 per cent. of our examinations, and therefore one should take care to rule out this reaction before concluding in regard to the presence or absence of a pathological "albumin-body."

The nucleo-proteids which are so abundant in glandular organs and which may arise from the nuclei of pus corpuscles, for example in a case of pyuria, are quite distinct, in composition and in disintegration products, from this nucleo-albumin, although the reactions of both to the organic acids in dilute solutions poor in neutral salts are the

same. From the consideration of the digestion of nucleo-proteids from food stuffs—



it does not seem possible that there could be an exogenous source for urinary nucleo-proteids, and provided this be so, the nucleo-proteid from nuclei of the pus corpuscles would be found in the urine under inflammatory conditions only, in which conditions other more important and more easily detected albumin-bodies are present, such as serum-albumin, and therefore the nucleo-proteid may be neglected.

The forms of albumin with which nucleic acid and nuclein are bound to form nucleo-proteids are histon and protamine, so far as known, and thus theoretically, the nucleo-proteids of food stuffs might be a source of histon and protamine in urine, but so little is known in regard to these bodies (histon and protamine) as related to food-stuffs that it is impossible to consider them.

Whether or not such true albumins as serum-albumin and serum-globulin occur in minute amounts in normal urine need not disturb us, for under normal conditions there is not a sufficiently large amount of such a body to react to the tests used ordinarily for the detection of "albumin." Bearing in mind that we are still considering the "albuminuria" of normal tissues or of locally impaired tissues of the genitourinary tract, not coming under the term "nephritic" as the term is usually understood, we may consider the causes of the condition under four divisions, viz.: (1) infectious, with exudation; (2) congestive, with transudation; (3) traumatic, with hemorrhage or exudation and diapedesis; (4) neoplastic, with hemorrhage or exudation and diapedesis, any one of which general conditions may produce an albuminuria, consisting of the presence in the urine of serum-albumin alone or with serum-globulin, fibrinogen or fibrin, bodies which may be found in a nephritic's urine, but in the nonnephritic cases the urines are usually cloudy, contain pus and blood cells and in other respects the specimens are unlike the urines of nephritis (excepting acute nephritis) and, most important of all, the clinical manifestations are quite different from those of nephritis.

It is a fact that in these nonnephritic conditions nucleo-albumin is usually present with serum-albumin, and it should be emphasized that while the former may come from cell-disintegration, the latter (serum-albumin) is a part of the exudate and is derived from blood-plasma and not from cells, which is contrary to the current idea that in a urine containing "pus cells" in small or large amount the "albumin" comes from the pus cells. In a woman's urine the source of the trace of "albumin," as also of the squamous cells and leucocytes found, is often vaginal. The urine of chronic nephritis rarely contains nucleo-albumin, as a rule serum-albumin alone: the urine of acute and subacute nephritis frequently contains both.

Bacteria.—A source of error must be recognized in urines which have been standing and have collected from the air bacteria. We have repeatedly sterilized non-albuminous urines, infected one-half of the sterilized portion with typhoid, colon, or lactis aerogenes bacilli, and noted the appearance of an albumin-body acting like serum-albumin in "salted," heated, and acidified solutions, particularly when all or a part of the bacteria are killed by heating above 65° C. for ten minutes and this heated suspension of bacteria in urine is allowed to stand for a second period of twelve hours. The process suggested is that of autolysis and the liberation of an albumin-like body from the dead disintegrating bacilli.

A. II.—Albumin-bodies from blood-stream, or lymph, (*a*) through normal or not necessarily impaired renal tissue; Bence-Jones albumin, melanin, or melanogen, hemoglobin, methemoglobin, digestive albumoses, peptones; albumin-bodies from the blood-plasma in conditions with "impoverished" blood in cachexia and anemia, and in chyluria with fibrinuria and fibrinogenuria. (*b*) Through temporary or permanent impairment of the functions of the renal tissue: serum-albumin, serum-globulin, fibrinogen.

A. II.—Albumin-bodies not from genitourinary tract tissue, but from other sources carried by the blood (or lymph?) to renal tissues; (*a*) secreted in the urine through renal tissue not necessarily impaired in function or normal are among the rarest cases of albuminuria—such as the albuminoid melanin or its urinary counterpart melanogen, Bence-Jones albumin ("albumosuria"), hemoglobin, methemoglobin, true peptone—and again some among them are common enough, but unimportant, as the "digestive albumoses" ("peptone"). Probably here should be placed also the cases of albuminuria in many cachexias and anemias in which the "impoverished" blood is supposed to bear a causal relation to the urinary condition.

In the rarer conditions of hemoglobinuria, methemoglobinuria, and hematoporphyrinuria one finds serum-albumin and maybe serum-globulin, and yet from other considerations one will not confuse them with nephritis; and other such true-albumins as histon, and its type globin from hemoglobin, and albuminoids as melanin need not be considered separately, since they are accompanied by demonstrable traces of serum-albumin, and their separation and identification are obtained by methods and reactions not likely to lead to confusion with other albumin-bodies.

Bence-Jones albumosuria is the only one of this group necessary to consider in testing for albumin. In the condition known as Bence-Jones "albumosuria" the albumin-body has its origin in the bone marrow, is carried to the kidneys by the blood-stream, and is excreted in the urine, whether with impairment or none of the renal tissues is not definitely known, and such impairment does not seem necessary, since albumin-bodies "foreign" to the plasma of circulating blood are known to be excreted by *normal* renal tissues. Achard and Gaillard emphasized this fact in 1901,

when they determined by experiment that the *diseased* kidney is more permeable to the albumins "foreign" to blood plasma, as casein, than the normal kidney, and proposed the intravenous injections of casein together with hypodermic injections of methylene blue as a method for testing the permeability of a contracted kidney, the casein output in the urine being greater than normal, and the crystalloid (methylene blue) output being less than normal if the renal condition is that of a contracted kidney. Moreover, these observers found experimentally in dogs that when the renal tissues were called upon to eliminate an albumin "foreign" to the blood plasma (as casein), serum-albumin also passed through the normal renal tissues and that the albuminuria is increased in amount when the damaged kidney is called upon to excrete such "foreign" albumins (as casein). (*b*) Most important is the group in which the albumin bodies of the blood-plasma are excreted in the urine through temporary or permanent impairment of the functions of renal tissue. The body most frequently found under such conditions is serum-albumin, usually with casts, and maybe with serum-globulin; fibrinogen and fibrin may be present also, and under such circumstances the albuminuria is supposedly the consequence of an impairment of renal function leading to increased permeability of the glomerular and tubular tissues. In acute and subacute conditions exudation plays a part, but in the chronic nephritic lesions exudation, in the sense of "exudate from an inflammatory condition," is wanting and the albuminuria has its source from the blood, the albumin passing to the urine in consequence of an increased permeability of the tissues for "albumin." It seems best to include here also the conditions of "cyclic," "postural," "orthostatic," "intermittent," and "physiological" albuminurias, since there is at least disturbance of renal function if not impairment, congenital or acquired, of renal tissues.

From such considerations one is enabled to eliminate from a large number of albumin-bodies all but four, which should be borne in mind in testing for "albumin," viz., nucleo-albumin, serum-albumin, serum-globulin, Bence-Jones albumin ("albumosuria"). The following may be disregarded: mucin, because it does not respond to the tests to be described below for serum-albumin; fibrinogen and fibrin, because they do not occur without serum-albumin, and the nucleo-proteids, from the pus cell nuclei and histon, and other proteid bodies, for similar reasons. It is well to retain serum-globulin as a body to be recognized, since in a massive albuminuria it should not be confused with Bence-Jones albumin.

B. *Tests.*—The objection to some tests is that they will not throw out a well-marked trace of "albumin" in urines poor in neutral salts, *e.g.* cold nitric acid, as in Heller's test; and other tests throw down peptones and all other albumin-bodies, some mucin, *e.g.* potassium ferrocyanide and acetic acid, and citric and picric acids—in other words, these are too "delicate." But the subject is not so puzzling as it seems if one studies these reactions with such complex fluids as urines.

The tests described for albumin run into a disheartening number, most of them with some peculiar feature to recommend them, and all of them with some objections. One most commonly used, Heller's with cold nitric acid, is to be criticised for two reasons, one that it will produce a positive test with the proper ring at contact with some urines containing nucleo-albumin alone and the high ring reaction mentioned in the text-books is one due to the reaction to the mucin-like body in the urine and not to the nucleo-albumin at times found—and these two bodies, mucin and nucleo-albumin, are distinctly different; and another, which is more important, that it will not show up very distinct amounts of serum-albumin in urines poor in neutral salts. Lieberkühn, Heynsius, Neumeister, Halliburton, and Hewlett were among the first to show the effect of neutral salts in solution upon the precipitation of certain proteids by acids and heat. Purdy emphasized this fact years ago, that urines poor in neutral salts, no matter what the specific gravity, do not react well to acid and heat tests for albumin, and that such urines should be enriched in neutral salt content by addition of sodium chloride before carrying out tests; and along this same line Purdy recommended the potassium ferrocyanide-acetic acid test, which was equivalent to "salting"* the urine, but this test throws down nucleo-albumin as well as other albumin-bodies, which is an objection, as will be seen later. Simon has recommended this "salting" as essential to the precipitation of all the "albumins" in many urines. Conheim is the one investigator who has shown definitely that "salting," overacidulation with acetic acid, and heating thoroughly to boiling are the three simple steps to take in order to detect traces of serum-albumin and to throw down completely the albumins commonly found in the urine.

In this country Emerson has used this method for quantative estimations in nephritic urines, under which circumstances he found the percentage amount of albumin excreted in the urine a good guide to the severity and the progress of the nephritic condition. If one will compare this method of Conheim's with the twenty or thirty other methods suggested and used to date, one will find that traces of serum-albumin may be detected in urines "negative" to the tests in vogue, this occurring in urines poor in neutral salts; and on the other hand one will find negative reactions by this method where heat with addition of mineral or acetic acid and Heller's test give faint positive reactions.

There is no use in noting in detail the many tests for albumin-bodies, since trial of many of them and the examination of some 5,000 urines has led to the recommendation for few reasons of one of the simplest—that of adding to the urine to be tested one-fifth to one-sixth its volume of saturated sodium chloride solution (30 per cent. aqueous solution), heating the upper portion of the tube, adding 3 to 5 drops of 50 per cent. acetic acid, and heating a second time to boiling.

C.—Separation of albumin-bodies in urine according to (*a*) frequency of occurrence and (*b*) faint and massive reactions.

a.—Turning to the bodies of import in diagnosis —those which should be and can be readily differentiated—they may be placed in order as follows, according to their frequency of occurrence, judging from some 5,000 urine examinations; naturally the order would vary with climate, country, and surroundings; for example, fibrinuria and fibrinogenuria and hematuria would be much more frequent in tropical countries, where parasitic invasions, such as filiariasis and hematobiasis (Bilharzia) are endemic and common. With us the frequency of occurrence is as follows: Nucleo-al-

*The term "salting" will be used in reference to the ddition of a saturated aqueous solution of sodium chloride (30 per cent.) to the urine.

bumin, serum-albumin, serum-globulin, fibrinogen and fibrin, albumose (Bence-Jones albumin).

b.—Again, they may be divided for sake of convenience in testing into those which respond with "faint" or "slight" reactions (and the term "reaction is used and emphasized purposely instead of the word "amount") to the "salting," heat and acid test, and those which respond with massive reactions to the same tests. Faint reactions: serum-albumin, nucleo-albumin [deutero-albumose (disappears after acidulation)].

Massive reactions: serum-globulin with serum-albumin, serum-albumin alone, fibrinogen and fibrin, Bence-Jones albumin.

Since "salting" the urine not only brings out the serum-albumin in a urine poor in neutral salts, but also holds in solution the nucleo-albumin which may be thrown out by heat and acid in a urine with a poor neutral salt content, these two facts may be combined with two other very simple tests, requiring only heat, saturated "salt" (sodium chloride) solution (30 per cent. aqueous), 50 per cent. acetic acid, and distilled water to make possible the ready separation of nucleo-albumin, serum-albumin, serum-globulin, and Bence-Jones albumin, as outlined in the following:

Tests for albumin-bodies in the urine:

Test-tube 2-3 full of urine. Heat upper one-third of urine; cloudiness may be

Nucleo-albumin... Serum-albumin... Serum-globulin...	Addition of 2-5 drops of 50 per cent. acetic acid and second heating = increased cloud or lessened cloud persisting.
Albumose (Bence-Jones) Phosphates Carbonates	Addition of 2-5 drops of appearance of cloud or and second heating, dis- 50 per cent. acetic acid partial clearing.

If reaction is faint ("faint trace"), probably serum-albumin or nucleo-albumin, or both:

Presence of nucleo-albumin tested for by diluting 3 to 5 c.c. of urine with five to six times its volume of distilled water, adding to one-half of this diluted urine 1 to 2 c.c. of 50 per cent. acetic acid *cold*, not heating: a diffuse cloudiness in the acidulated one-half is nucleo-albumin (may be mucin, but mucin will not respond to first heat and acetic acid test).

Nucleo-albumin is not precipitated by heat and acid in highly "salted" urines: to prove serum-albumin, therefore, to the urine add 1-5 volume of saturated sodium chloride solution, heat upper one-third, add 2-5 drops of 50 per cent. acetic acid, heat a second time: a persistent cloud equals serum-albumin. May be with serum-globulin.)

If a massive reaction, usually serum-albumin with serum-globulin, may be albumose (Bence-Jones), may be serum-albumin alone or with fibrinogen.

To separate serum-globulin and albumose (Bence-Jones): To the urine add 1-5 volume of saturated sodium chloride solution and 2-5 drops of 50 per cent. acetic acid, without heating = cloudiness, may be serum-globulin or albumose (Bence-Jones) (rarely serum-albumin alone).

*Digestive albumose not uncommonly occurs as a faint reaction, but does not persist with heat and acid (acetic) tests, so will not be confused with faint reaction for serum-albumin; true peptone does not respond to heat and acid.

Heat upper one-third = heavy cloud followed by partial clearing suggests albumose (Bence-Jones) = persisting cloud is serum-globulin, or serum-albumin, or both. Boil entire tube, filter, heavy cloud reappearing in filtrate on cooling = albumose (Bence-Jones). A faint reaction on cooling, due to deutero-albumose, often appears, and this has practically no clinical value.

For serum-globulin.—To a test tube of distilled water add urine drop by drop to 8 or 10 drops, no heating, a cloud (cold) = serum-globulin, which clears after addition of 2 to 5 drops of 50 per cent. acetic acid (cold).

Recently we have followed the urines of pneumonia cases in respect to the chlorides, as the type of neutral salt most abundant in urine, and the albumin reactions, and have found as one would expect, that marked reactions may be checked by the low salt content of the urine which develops during the course of the disease, and yet one cannot say that the one depends absolutely on the other, although low salt content and a checked albumin reaction do occur in the same specimens. Such facts suggest that the condition of the renal tissues as evidenced by the urine albumin-content is not to be followed accurately unless one makes allowance for this poor salt content and "salts" the urine before testing with heat and acetic acid. And this statement holds, also, for the many cases of chronic nephritis in which the specific gravity is low and the percentage salt content poor, for the absolute amount of neutral salt excreted in twenty-four hours is not of import, but the percentage neutral salt content in any one specimen, in its influence upon the albumin reaction.

When the sodium chloride content, in pneumonia, is below 0.4 per cent. to 0.5 per cent., the albumin reaction in "unsalted" urines may be quite misleading.

In routine urine examinations errors are apt to occur with urines containing small but well-marked amounts of albumin, and one should be cautious in respect to faint albumin reactions which may be due to nucleo-albumin, and in respect to the trace of serum-albumin which is not readily thrown down in urines poor in neutral salts: and it is well to state that such errors may be avoided by making use of this one test for albumin, viz., that of "salting" the urine by addition of saturated salt solution, acidulating with 5 to 10 drops of 50 per cent. acetic acid, and heating to boiling the upper one-third of the tube. Under such conditions a positive reaction is due to the presence of a pathologic albumin-body. If this test is carried out as a routine one will sooner or later be surprised to find how much less variable and more satisfactory are results than those obtained by the older methods of testing for "albumin."

Conclusions.

1. Many of the albumin-bodies which theoretically might occur in urine may be excluded from consideration for various reasons: serum-albumin, nucleo-albumin, serum-globulin, and Bence-Jones albumose should be considered.

2. For purposes of excluding false reactions due to bacterial disintegration the urine should be examined within six hours after voiding, unless the reaction is massive.

3. The most reliable test for serum-albumin in urine is that of "salting" the urine with a saturated solution of "salt" (sodium chloride), acidulating with 50 per cent. acetic acid, and heating to

boiling; this throws down all traces of serum-albumin and prevents a nucleo-albumin reaction.

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Trachoma and Its Treatment.—Cornelius Williams declares that trachoma flourishes in any place in which there is crowding and lack of cleanliness. This disease is looked upon by the greater number of physicians with indifference. Trachoma with and without treatment may last for fifty or seventy-five years. It may in some cases get well of itself in a shorter time. The writer condemns the application of crystal of copper sulphate in the treatment of this affection. He has had a very extensive experience in the treatment of trachoma. He prefers the silver nitrate method, since it has given better results in his experience than any other remedy. This method is attended by no pain. Neither is any lesion of the tissue induced. The microorganism of trachoma is destroyed, and the disease in time is cured. He believes it advisable to suspend the use of the silver salt now and then, for a few days, substituting for it a very weak solution of iodine in the normal saline solution, with the addition of iodide of potassium. Cleanliness is an absolute essential in the treatment of trachoma.—*The St. Paul Medical Journal.*

The Psychology of Disease.—Mary M. H. Johnstone emphasizes the fascination of the study of this subject. She speaks of the condition of euphoria which has been noted in the development of general peritonitis during the puerperium, contrasting this with the anxiety displayed by patients suffering from perforative peritonitis. The difference, says the writer, is simply one of degree in intoxication. The cases with delirium tremens are overmastered by fear. The patient with carcinoma conceals her disease. The alcoholic displays various interesting mental states. Certain toxins pick out special organs or groups of nerves. It would seem that each toxin and antitoxin has its special action upon the psychic cells, causing in one case marked irritability, in others hopefulness, fear, or despondency. The writer concludes by declaring that the practical bearing of all this is that a better knowledge of the physiology and physiological chemistry of cells, especially of psychic cells, is needed. The pathology of cells should be studied, their reaction under different abnormal physiological conditions, and to different chemical stimuli. Each patient should be made a special study as to diagnosis and therapeutics from the psychical as well as the physical point of view.—*The Woman's Medical Journal.*

A Method of Estimating the Opsonic Content of Blood and Other Fluids.—Charles E. Simon and R. V. Lamar, in the course of their experiments, have ascertained that human leucocytes, when washed with normal salt solution containing 0.1 per cent. of ammonium oxalate, promptly lose their phagocytic power, but that this can be restored by the subsequent addition of normal serum. They describe, as follows, the method by which it is possible to obtain non-phagocyting leucocytes in sufficient quantity for all ordinary purposes in a very convenient manner and with the least expenditure of time. To this end the blood is obtained from the finger or the lobe of the ear, as in ordinary clinical work. Approximately 0.5 c.c. is drawn up into a calibrated tube, transferred to a washing tube of 0.5 cm. diameter, mixed with an excess of normal salt solution containing 0.1 per cent. of oxalate, and centrifugalized. When the corpuscles have been well packed, the supernatant fluid is twice replaced by normal salt solution, the tube inverted a few times, and again centrifugalized. The leucocytes after this are devoid of phagocytic action, and ready for use, when it is desired to determine the opsonic content of the second specimen of blood or other fluids. In the case of the blood a corresponding amount, as in the first instance, is obtained by puncture, placed in a drawn-out tube, and at once centrifugalized, until the corpuscles are firmly packed and the supernatant fluid is clear. With this serum, dilutions are made with normal salt solution in varying proportions. Small tubes are charged with a few drops of diluted serum, inoculated with the microorganisms under consideration, so that a moderate milky turbidity results, further treated with a small quantity of washed corpuscles, and incubated for thirty minutes at 37° C. Smears are finally prepared on slides, and, when air-dry, stained with a strong solution of methylene blue, containing a trace of sodium hydrate. As index of the opsonic content of the blood under examination, the writers then take that degree of dilution at which phagocytosis has practically become extinguished, or when the number of non-phagocyting cells exceeds 90 per cent. This they designate as the opsonic coefficient of extinction. They have thoroughly tested the practical value of the method as just outlined and have every reason to regard it as established.—*Bulletin of the Johns Hopkins Hospital.*

A Plea for a More Prominent Position of Glandular Fever among Infectious Diseases, with a Report of Twelve Cases.—Albert E. Vipond defines glandular fever as an acute infectious disease characterized by an inflammation of the lymph nodes of the anterior and posterior triangles of the neck, generally involving as well the lymphatic nodes of the axilla, and often those of the inguinal region. The writer declares that it is quite impossible to diagnose glandular fever until the lymph nodes become involved. Even then a thorough examination of the throat, mouth, scalp, and so on, must be made in order to exclude any local source of infection. West's ninety-six cases occurred in forty-three families, while four of the writer's twelve cases were found in one family, and two were found in each of two other families. Although this disease does not occur with such frequency as the more common infectious diseases, the writer thinks that it might rank in this respect with rubella.—*Archives of Pediatrics.*

Physiological Action and Indications of Mechanotherapy.—I. Gunzberg tells us that mechanotherapy is largely used and much appreciated at the present day. It consists of the application of movement regulated by therapeutics. It utilizes the force inherent in the muscles, liberates the latent energy, and utilizes all the physiological properties of the reflexes and the elasticity of the tissues. Its action is local and general. By proper dosage fatigue is avoided, while it localizes exercise. It is indicated in paralysis the result of accident, compensated cardiac affections, affections of nutrition, gastrointestinal atony, scoliosis and other deviations of the spinal column. It is also useful in a series of other affections of diverse nature, in which the physical agent, movement, may be applied. The contraindications are few and may be easily found out on examination of the patient. The era of empiricism in mechanotherapeutics is passed. This agent has become indispensable to the clinician. A union of massage and kinesotherapeutics may be of inestimable value in medicine.—*Annali di Elettricita Medica e Terapia Fisica.*

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ANKYLOSTOMA INFECTION THROUGH THE SKIN.

SINCE Looss in 1898 made his first observations on the entrance of *Ankylostoma duodenale* into the human body by way of the skin, his work has been repeated and confirmed by Boycott, Tenholt, Bruns, and, in this country, Claude Smith. Looss has not only repeatedly demonstrated the truth of his first announcement, but has further done much toward tracing the exact route taken by the larva on its way from the surface of the body to the intestines. At the present time, therefore, there can be no reasonable doubt as to the correctness of his first observations. The choice of such a roundabout journey for an intestinal parasite had no biological analogy, and while its actual occurrence, in spite of strenuous opposition by Lichtenstein, Grassi, and other authorities, could not be refuted, it was nevertheless regarded for a long time as, at the most, a laboratory curiosity which could not be considered as etiologically important.

Looss himself, soon after his first announcement, studying the habits of the Egyptian farm laborers, a class much afflicted with the disease, expressed the opinion that possibly a very considerable percentage of sufferers were infected in this way. These people do most of their work standing with bare feet in the freshly irrigated fields, ankle deep in the mud, which is one of the best media for the development and preservation of the ankylostoma larvæ. Their habits in regard to the natural necessities are not the most fastidious, and as the stools of many of them contain ova, infection through the skin of the feet and legs seemed more than probable. Additional support for this view was furnished by the frequency with which these laborers suffered from a dermatitis of the feet, similar in many respects to the dermatitis produced in persons experimentally inoculated.

From the report of the United States Commission on Anemia in Porto Rico, it appears that the discovery of Looss will truly play a most important part in the prophylaxis against this disease. The Commission concludes, after a careful analysis of its cases, that, in Porto Rico at least, the infection with ankylostoma is generally contracted by penetration of the larvæ through the skin. It appears that in this island the large majority of the victims to the disease are the unshod farm laborers. During the rainy season they are almost without exception annually attacked by a dermatitis which they know as "mazamorra." Of 284 patients who were found infected with ankylostoma, 263 gave a definite history of "mazamorra," and most of these seemed to trace some connection between the illness from which they were suffering and this initial dermatitis.

Two very striking cases are cited in this report. The first was that of a negro who was employed in digging the latrines for the burial of the infected stools used at the laboratory. Soon after beginning his work this man complained of being "eaten up by mazamorra." Sixteen days later he reported himself too weak to work, and at this time examination of his stools revealed the ova of *Uncinaria* in large numbers. A still more convincing case was that of a soldier who was admitted to the San Juan Hospital suffering with severe mazamorra. He had been employed in cleaning some pits near Morro Castle and had been doing his work barefooted. This man was sent to get some of the mud of the pit which he held responsible for his disease. In this mud larvæ of the parasite were found in abundance.

There seems to be no link missing in the chain of evidence necessary to prove that entrance through the skin is a frequent and dangerous source of infection; and the discovery of this mode of entrance —made almost accidentally by Looss in 1898—now corroborated by many other observers, promises to put the prophylactic measures against ankylostomiasis on an entirely new and simple basis.

THE VOMITING OF PREGNANCY.

WHILE a certain degree of nausea and vomiting is the rule at some stage of pregnancy, the pernicious or fatal type of the disorder is quite uncommon. The difficulty of the situation resides in the fact that one cannot foresee whether or not in any given case the mild form will be converted into the severe. From the existing evidence it would appear that the condition when present is not always due to the same cause, so that the measures of relief to be employed must be varied accordingly. It is important, in the first place, to make a sharp distinction between vomiting occurring incidentally in the course of pregnancy and that which is a direct outcome of pregnancy. As the result of a most comprehensive study of the subject, based upon a thorough survey of the literature and a not inconsiderable personal experience, Dr. J. Whitridge Williams (*Bulletin of the Johns Hopkins Hospital,* March, 1906) differentiates three distinct types of the disorder, namely, reflex, neurotic, and toxemic, in accordance with the varying etiological factors present in the individual case.

Reflex vomiting of pregnancy results from disorders of the generative tract precedent to or coincident with pregnancy, such as abnormalities of the uterus, particularly displacement, endometritis, ovarian tumors, and abnormalities of the ovum, such as hydramnios, hydatidiform mole, or twin pregnancy. The treatment consists in removal of the underlying disturbance; and in the presence of hydramnios and hydatidiform mole the pregnancy should be promptly terminated. The neurotic variety of vomiting of pregnancy is referable to the attendant disturbance of mental, moral, and nervous equilibrium, and it responds most readily to suggestive and supporting treatment.

From the earliest times it has been held that the vomiting of pregnancy is due to the presence of toxic substances of varied origin, and opinions still differ as to the nature and source of these. Such intoxication, it has been thought, may arise from the gastrointestinal tract, from the ovum and its appendages, from ovarian secretion, or from hepatic lesions. Examination of the urine from women suffering from the vomiting of pregnancy often discloses the presence in increased amount of uric acid, indoxyl, syatoxyl, aromatic sulphates, phenol, and nucleoalbumin, and also of acetone, diacetic acid, peptone, urobilin, etc., indicating absorption of toxic materials derived from decomposition of carbohydrates in the stomach and of proteids in the intestine. In another group of cases symptoms of profound derangement of metabolism are present, together with lesions in the liver analogous to those of acute yellow atrophy. The characteristic clinical feature under these conditions is a marked decrease in the amount of nitrogen excreted in the form of urea, together with a marked increase in the amount excreted in the form of ammonia. The treatment consists in prompt evacuation of the contents of the uterus.

THE REAL ENEMIES OF THE AMERICAN MEDICAL ASSOCIATION.

We are informed that an effort is being made by the supporters of those in power in the councils of the American Medical Association to create the impression that the Medical Record, which has not hesitated to criticise their arbitrary and unconstitutional methods, is inspired by enmity to the Association. The charge is ridiculous, but that it should be made by the men who have acquired control of the Association, and who know that the only way to retain their power is to down opposition, is natural. No reader of this journal, however, who is not so blinded by prejudice that he cannot sense what he reads has any excuse for saying or believing that the Medical Record is inimical to the American Medical Association. The editor is a member in good standing of the Association, and every word he has written in criticism of the oligarchy which now rules has been dictated by the sincerest desire to promote the welfare of that great and useful organization. It is a belief shared by many of the best men in the organization, even by members of the House of Delegates, that the worst enemies of the American Medical Association to-day are those who make up the little group that governs the Association, while its truest friends are those who oppose this unpopular rule and are working to save the organization from impending ruin. It is a consciously shaky government that would stifle criticism of its acts; honest governments, like honest men, invite criticism and welcome opposition. The Medical Record and other open critics of "bossism" in the Association are no more enemies of the organization than are the critics of our national rulers traitors to their country.

The American Medical Association is apparently more prosperous to-day than ever before, but this apparent prosperity rests upon a precarious foundation, and the organization is in jeopardy of its very existence as the one great bond of union in the medical profession. There is loudly expressed disaffection with the present management all over the country, from Texas to Michigan and from the Atlantic to the Pacific, disaffection which is assuming definite form in the organization of new State medical societies owing no allegiance to the national body. There is even serious talk of a rival national association. The leaders in this revolt confound the Association with its temporary rulers—a confusion which is shared by these same rulers—but they forget that the great body of the Association is composed of earnest, honest men, caring naught for medical politics and as yet barely awaking to the fact that they are governed by unwise men, who, wittingly or unwittingly, are dragging down the medical profession of the country into the mire of disunion. When once they are fully alive to the dangers which threaten their organization they will be not slow to make a change in methods, if not in men.

A rupture of the Association and the formation of a rival body would be a grievous disaster, for a disunited profession would bring ridicule upon itself and lose what influence it now has in matters of public health. It is in the hope of arousing the members of the Association to a sense of their peril that the Medical Record has assumed the thankless task of criticising the management, exposing its policy of concealment, and condemning its dictatorial methods. It believes the Association can be saved from disruption only by curbing the intemperate zeal of those who now control it. Those men must be made to realize that they are the servants of the Association, not its masters. One or two of them are men of ability, but so much the more dangerous if their talents are employed to further selfish ends rather than in the interests of the American Medical Association, whose creatures they are. The Medical Record claims the right to speak for the Association when the natural protectors of the latter are turned against it; it is they, not we, who are the real enemies of the Association, since it is their acts, not our criticism, which have brought this great body to the brink of disruption.

The Normal Daily Temperature Variation and Its Manifestations in Pulmonary Tuberculosis.

We are accustomed to observe diurnal variation in the normal body temperature in man and in warm blooded animals. In the evening, towards the end of the period of physiological activity, the temperature is higher than it is in the early morning, towards the end of the period of rest. Alteration in the character of the temperature variation is a characteristic of many diseases, but in none of these are its manifestations so varied as in pulmonary tuberculosis. In order to determine what effect modifications of the periods of rest and activity would have, J. J. Galbraith (*Practitioner*, February, 1906) undertook a series of observations on the monkey. This writer found that by reversing the routine of the monkeys' lives—that is, by making them sleep during the day time in a darkened room, and keeping them awake at night by lighting the room with an artificial light, he was able to produce a reversal of the normal temperature variation. Among these

monkeys which had been under observation there was one which was markedly tuberculous, and its temperature throughout the experiments differed from that of the normal individuals of the same species. Although these experimental animals were very sensitive to changes, the tuberculous monkey responded even more quickly than the others. The effect of alimentation on the temperature was next investigated and the animals were deprived of solid food for seventy-two hours, water alone being allowed during this period of starvation. The temperature fell after the first day, but in the tuberculous monkey, whose temperature at this time was fully a degree higher than the normal, much the most marked fall was noted. The fact that the temperature of all the monkeys fell simultaneously shows that the depression must have been due to the same cause. It is not likely that any change in the diseased conditions could account for a fall so identical in character, occurring in both the normal and the tuberculous. At the close of the period after food was taken the temperature resumed its former high level. This seems to show that gastrointestinal metabolism has a very distinct influence in sustaining a rise of temperature in tuberculosis. The excessive action of gastrointestional metabolism is quite in accord with clinical experiences, although the above observation would tend to emphasize its importance.

Plague Vaccination.

Since plague is fortunately one of the diseases against which a rigid quarantine is entirely protective, there is little in connection with it that will, we hope, ever be of directly practical importance to the American physician. But laxity in quarantine methods has been known to occur, and in any case considerable general interest must be aroused by any advance in the therapy of a malady which has been able to claim a million lives in one year in India alone, and which is a constant and dangerous scourge in many of the countries of Eastern Europe, Asia, and Africa. Such an advance seems to have been made by Dr. R. P. Strong of the Government Bureau of Science at Manila, during the past year. The previous attempts at protective inoculation against this disease have consisted either in the very early and primitive endeavors to produce a mild form of the disease by vaccination with pus from the plague bubo, or, more recently, as the result of the work of Haffkine, Yersin, Lustig, and others, in protective inoculations with dead cultures or bacterial extracts of *Bacillus pestis*. The latter methods have had extensive tests. In Zanzibar during the recent epidemic they were applied to some 20,000 individuals, and in India Haffkine has used his own "prophylactic" upon thousands of people in various districts. Slightly favorable results undoubtedly were obtained, but experiments made by Kolle have shown the method to be, on the whole, disappointing and not at all reliable. The work done by Strong was based directly upon experiments by Kolle and Otto, who in 1904 and 1905, had succeeded in immunizing a number of guinea-pigs by treating them with attenuated cultures of the pest bacillus. This had been previously done by the German and Austrian Plague Commissions, but was abandoned as a practical method because of the great difficulty in producing cultures of a sufficient degree of attenuation. Kolle and Otto weakened their organisms by growing them for a long time upon artificial media at high temperatures (41° to 43° C.), and by adding alcohol to the bouillon used. They succeeded in procuring cultures of *B. pestis* which seemed almost entirely to have lost their pathogenicity, but which nevertheless were able when injected into guinea-pigs to immunize the animals absolutely against later injections of virulent cultures of the same organism. Strong obtained strains of these attenuated cultures from Prof. Kolle, and after carefully determining upon animals their harmlessness, injected extremely small doses into some criminals under sentence of death. The doses were gradually increased without noticeable harm until at the present time forty-two persons in all have been inoculated with large doses of these organisms. Animals treated with the same strains have already proven immune to virulent cultures of *B. pestis*, and it does not seem to be straining analogy to believe that the human beings so treated have been immunized as well. Dr. Strong's precautions appear to have been perfect, and his note of warning in regard to the thorough attenuation of cultures before their use for human immunization proves the utter absence of the element of recklessness in his rather daring experimentation. It appears not unlikely, if his results are confirmed by others, that true vaccination against plague will be a thing of the near future and a boon to many countries.

An Unsatisfactory Medical Term.

There are a number of descriptive terms applied to a variety of diseases which are acknowledged to be unsatisfactory and indefinite, and yet the numerous suggestions made for substitutes have failed of adoption. Among these may be mentioned the word "rheumatism," which is still in constant use to denominate pathological conditions which it entirely fails to describe. Like so many other medical terms, its adoption by the laity has fixed it in our language, but this fact should not interfere with the attempts to find a more suitable scientific appellation descriptive of this systemic disease. It has come to be quite commonly accepted by many medical writers that a toxemia constitutes the basis of all disorders ordinarily classified as "rheumatic." Some believe that this is of exogenous source, others that it is the expression of a disordered metabolism; but very likely it is a combination of both, and until we are more intimately acquainted with the specific nature of the disease general terms must still be employed to describe it. H. A. Fairbairn, writing in the *New York State Journal of Medicine* for March, 1906, suggests that the generic term "toxic" will satisfy both theories, and as the local manifestations are of an inflammatory nature, the ending "itis" may be appended to the part most prominently affected. Thus there results the combination, "toxic arthritis," and although this is also somewhat indefinite, it nevertheless suggests the source of the disturbance, which the other does not. In order to avoid confusion with gout, the writer applies the term "uric-acidæmia" to the latter. Both "malaria" and "rheumatism" have constituted a haven of refuge for obscure complaints without end, which have been admitted to one of these classifications because it was the most convenient thing to do. When a disease condition is without pathognomonic characteristics, we must rely on a certain symptom complex in order to make a diagnosis, and this method has been applied in those states denominated rheumatic. We are unable in the present state of our knowledge to determine the specific agent which causes the condition to which the term rheumatic is ordinarily applied, but it bears most of the earmarks of an infectious process, the result of which we may describe as a toxemia. Fairbairn's suggestion that we refer

to the condition alluded to as a toxic arthritis, seems quite logical, and it might well be adopted until a more intimate knowledge of the etiology will afford the means of furnishing us with a more appropriate appellation.

Restriction in the Use of the *X*-Rays.

It is quite generally admitted that in the *x*-ray we have a very powerful therapeutic agent which is of undoubted value in inoperable malignant disease of a superficial character and also as a preventive against recurrences of the same after operation. But the field of application of this procedure has been gradually extended by its enthusiastic advocates to a varied assortment of pathological conditions, and among these we find very prominently noted certain affections of the lymphatic and glandular systems. Notwithstanding the many favorable reports which have been circulated regarding the effects, there are numerous uncertainties connected with the employment of the *x*-rays in this class of cases. If the expected result does not materialize, resort must finally be had to surgery, and in many of these cases, on account of the alterations produced in the tissues by exposure to the rays, operations which would ordinarily be simple and easy dissections become formidable and dangerous. W. J. Taylor, in an article in the *Annals of Surgery* for March, 1906, calls attention to this matter and illustrates by practical example how the change in the character both of the skin and of the underlying tissues may interfere with the otherwise favorable outcome of surgical operations. The alterations referred to are particularly well marked in cases of enlarged cervical glands, especially those of the tuberculous variety. Ordinarily these glands are comparatively easy to enucleate and the neighboring blood-vessels and nerves retain their distinct characteristics, but after treatment with the *x*-rays has been employed, the glands are hardened and perhaps shrunken, and while it is true that in cases of recent origin many of the swollen glands may disappear, this is not usual. In addition to the changes in the glands themselves, the surrounding structures, blood-vessels, nerves, etc., are so altered that they can be distinguished only with difficulty and the danger, the difficulty, and the time consumed in the operation are thus materially increased. This report is in line with others of a similar nature regarding the disadvantages connected with the use of the Röntgen rays as a therapeutic agent in cases in which it is not distinctly indicated.

News of the Week.

Children's Seaside Hospital.—The Association for Improving the Condition of the Poor has received contributions completing the sum of $125,000 necessary in order to secure Mr. John D. Rockefeller's promised gift of an equal amount for the erection of a seaside hospital devoted to the treatment of tuberculous children. The time limit had almost expired and $19,850 were still lacking when an anonymous contributor pledged himself to make good the deficiency. Now that the money for the hospital has been raised the city is to be asked to provide the site, and the Acting Mayor has promised to bring the matter before the Board of Estimate.

A Tuberculosis Sanatorium for Yonkers.—A tract of land in the Seventh Ward, comprising 110 acres, has been purchased by Mr. Alexander Smith Cochran, who will erect on it a sanatorium for consumptives and present it to the city of Yonkers. The estimated total cost is $500,000, and an endowment sufficient to pay all expenses for the first five years is promised. The treatment will be free to the patients, and incipient cases will have the preference. It is expected that the hospital will be opened late in the fall.

For the Physical Welfare of School Children.—Announcement is made of the organization of the New York Committee on the Physical Welfare of School Children. The formation of this body is the direct outcome of the very large number of appeals made last year by the principals of schools to the Association for Improving the Condition of the Poor in order to secure for children clothes, shoes, eyeglasses, better nourishment, etc. It is not expected that the committee will itself provide material relief or fresh-air outings for needy children. It is believed, however, that there are private and public agencies in existence that will effectively cooperate with health and educational authorities to secure prompt attention for children whose physical condition is below normal, and the committee will assist in the distribution of assistance.

Panic in New York Public Schools.—Owing to a report made by the school authorities that a number of children in one of the East Side schools required removal of adenoids and tonsils, and that their parents were too poor to pay carfare to go to a dispensary where they would be treated, several hospital physicians offered to go to the school and operate upon those children whose parents consented in writing thereto. Consequently three specialists, assisted by seven inspectors of the Health Department and as many nurses, operated on eighty-three children on June 21. Six days later a large number of parents, believing that the children in all the schools were to be operated upon, or, as the rumor had it, murdered, rushed to the schools, demanded their children, and, becoming excited, demolished windows and doors before the pupils could be dismissed. This occurred in the districts east and south of Houston street, where the Russian and Polish immigrants live. The next day the Italian district was the scene of a similar excitement. There was no intention of visiting other schools, but in this particular school the children who were operated upon were the ones selected by the Society for Improving the Condition of the Poor to be sent to the country, and it was the opinion of those interested that the fresh air benefit would be enhanced if the operations were performed first.

Cholera in the Philippines.—A dispatch from Manila reports that cholera has reappeared in that city and the surrounding provinces. Four Americans in Manila had been stricken up to July 3, and one had died. Twenty-one cases and sixteen deaths were reported on that date in Manila, and in the provinces there were twenty-six cases and twenty-five deaths.

The President of the Chicago Union Hospital has asked the Circuit Court to restrain the Building Commissioner and the Chief of Police from interfering with the erection of a new hospital building at Wellington avenue and Dayton street. Work on the building has been ordered stopped by the Commissioner of Buildings, for the reason that the building is being erected in violation of a city ordinance which forbids a hospital within four hundred feet of property used for public school purposes.

Dr. Darlington Injured.—Dr. Thomas Darlington, Health Commissioner of New York City, was severely hurt in a runaway accident on June 30,

while on a tour of inspection of the city's new tuberculosis sanatorium at Otisville, N. Y. While his injuries are severe, they are thought not to be dangerous.

The "Canadian Journal of Medicine and Surgery" devotes the greater portion of its July number to matter relative to the meeting of the British Medical Association, which is to be held in Toronto in August. The issue contains many photographs of men prominent in the Association and of Toronto's public buildings, and is replete with information of value to all who may be interested in the British Medical Association and its approaching meeting—the second, we believe, which has been held in the Western Hemisphere.

A New Gastrointestinal Clinic.—The Brooklyn Central Dispensary, 29 Third avenue, has created a Department of Gastrointestinal Diseases, which will be under the supervision and direction of Dr. Mark I. Knapp of New York. Clinical lectures on gastrointestinal cases will be held by Dr. Knapp every Wednesday afternoon at 3 o'clock, to which all physicians are welcome. Regular postgraduate courses in gastrointestinal diseases will be given at the dispensary, commencing in the fall of this year.

Philadelphia Slaughter Houses Condemned.—The Philadelphia Bureau of Health on June 26 condemned thirty-seven of the one hundred and seventy-one slaughter houses in the city, on account of unsanitary conditions.

A Hospital for Bronxville.—Mr. W. V. Lawrence has purchased a tract of land in Bronxville, comprising about two and one-half acres, and has signified his intention of erecting on it a hospital and presenting the same to the town Bronxville.

"Using" the Illinois State Board of Health.—Dr. James Egan, Secretary of the Illinois State Board of Health, has issued a statement correcting certain assertions made in regard to the cure of an alleged advanced case of tuberculosis by some specific remedy. Wide publicity was given to the assertion that the patient's sputum had been examined by Dr. Egan and that he had stated that the patient was suffering from advanced tuberculosis. Dr. Egan says that since the publication of this story the State Board of Health has been flooded with inquiries in regard to the remedy, whereas the only connection of the board with the case is that the patient's sputum was examined at the official laboratory at the request of a physician, and that it was found to contain a few tubercle bacilli. No opinion was expressed as to the stage of the disease, and, owing to the way in which the facts of the case have been distorted, it is suggested that the whole matter is merely an advertising dodge to exploit some new "consumption cure."

New Medical Society.—The Medical Society of the Twenty-sixth Recording District of Indian Territory was organized at Marietta on June 17 by Dr. H. P. Wilson, Councilor for the Oklahoma State Medical Association. The following officers were elected: *President,* Dr. A. E. Martin; *Vice-President,* Dr. B. S. Gardner; *Secretary and Treasurer,* Dr. J. D. Batson.

Lake Keuka Medical and Surgical Association.—The seventh annual meeting of this society was held this week at Grove Springs, Lake Keuka, under the presidency of Dr. W. B. Jones of Rochester, N. Y. The secretary for this meeting was Dr. H. B. Nichols of Poulteney, N. Y.

West Virginia State Medical Society.—At the annual meeting of this society, held on June 22 at Webster Springs, the following officers were elected: *President,* Dr. W. W. Golden of Elkins; *Secretary,* Dr. E. W. Moore of Huntington. The next meeting will be held at Huntington.

American International Congress of Tuberculosis.—The officers of this congress announce its next session for November 14, 15, and 16, 1906, in this city. The president is Dr. F. E. Daniel of Austin, Tex., and the secretary is Dr. M. M. Smith of the same city.

Mississippi Medical College. — This institution will open the session of 1906-1907 in October in its new building now in course of erection. The officers elected are as follows: *President,* Dr. W. W. Hamilton; *Vice-President,* Dr. T. A. Barber; *Secretary,* Mr. O. W. Bethea; *Treasurer,* Dr. T. J. Houston; *Dean,* Dr. N. L. Clarke.

Chicago Clinical School.—The annual meeting of this school was recently held, and the following officers were elected: *President,* Dr. W. T. Eckley; *Vice-President,* Dr. George F. Hawley; *Secretary,* Dr. Arthur M. Corwin; *Treasurer,* Dr. John S. Nagel.

Death of Manuel Garcia.—Manuel Garcia, celebrated as an operatic tenor, as a teacher of singing, and especially as the inventor of the laryngoscope, died on July 1, at his home in London, in his 102d year. The achievements of this remarkable man were brought prominently forward on the occasion of his centenary, celebrated on March 17, 1905. Born in Madrid of a family unusually gifted in vocal music, he was educated as a professional singer, but in 1829 he gave up the stage and began to devote himself entirely to teaching. His ability soon won recognition, and in 1835 he was appointed Professor of Singing at the Paris Conservatoire. In 1840 he presented his "Memoire sur la Voix Humaine" before the French Academy, which, as well as his "Traité Complet de l'Art du Chant," published seven years later, gained for him a world-wide reputation. The manner in which an inspiration coming suddenly to him in 1854 led to the development of the laryngoscope may be found, described in his own words, in an article by Dr. James E. Newcomb, appearing in the MEDICAL RECORD March 25, 1905. He preserved almost until the last a degree of mental and physical vitality characterized as nothing short of marvelous, and his later years were passed in peaceful enjoyment of the distinction which his achievements had secured for him.

Obituary Notes.—Dr. W. G. ALBAN of Walla Walla, Wash., one of the oldest physicians in the State, died on June 20, at the age of eighty-five years. He went to California in 1849 and removed to Washington in 1878. He continued in active practice until two years ago, serving twelve years as city health officer.

Dr. L. Y. GREEN of Chattanooga, Tenn., died on June 21, at the age of seventy-seven years, after a long illness. He was born at Perryville, Ky., and began the practice of medicine in Mississippi in 1851. He removed to Chattanooga four years later and served in the Confederate army as a surgeon. Declining health compelled him to give up active work three years ago.

Dr. H. C. WILLISON of Port Townsend, Wash., died on June 12, at the age of sixty-one years. He was born in Indiana and was a graduate of the Michigan State University, at Ann Arbor, and the Bellevue Medical School, at New York. In 1875 he went to Port Townsend, which has been his home ever

since. Dr. Willison was for several terms President of the Washington State Medical Association and served for a number of years as a member of the State Board of Medical Examiners.

Dr. J. I. Boone of Chickasha, Ill., died on June 10, at the age of thirty-five years. He was graduated from the Missouri University Medical School at Kansas City in 1903.

Dr. John H. Henry of Montgomery, Ala., died on June 19, at the age of seventy-seven years. He was born in Montgomery and was graduated in 1850 from the Philadelphia College of Homeopathy.

Dr. Arthur G. Cabell, a retired surgeon of the United States Navy, died on June 19, in Richmond, Va., at the age of fifty-two years. He was born in Richmond and was graduated from the Medical College of Virginia, entering the naval service immediately afterward.

Dr. T. E. Sanger of Littleton, N. H., died on June 6, in Boston, at the age of seventy-four years. He was born at Troy, Vt., and in 1856 was graduated from the Philadelphia College of Homeopathy. He first located at Hardwick, Vt., and in 1858 removed to Littleton. He was the first President of the Connecticut River Valley Homeopathic Medical Society.

Dr. Thomas J. Yarrow, son of the late Dr. Thomas J. Yarrow, of Philadelphia, died at Cape May, N. J., on June —, at the age of forty years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1894.

Dr. Jeremiah W. Rowe died at Altoona, Pa., on June 30. He was graduated from Jefferson Medical College in the class of 1871.

Correspondence.

APPENDICITIS *VERSUS* COLITIS.

To the Editor of the Medical Record:

Sir:—In my opinion, Dr. Dieulafoy has lately brought before the Academy of Medicine of Paris a subject of great importance, relative to the diagnosis and treatment of so-called appendicitis. He has shown that in many instances French surgeons have operated where there was no appendicitis, but the symptoms properly understood, before and after operation, pointed undoubtedly to typheocolitis as being the disease present. The appendix in these cases was shown to be normal, and in those instances where strictures and thickening were present they were probably caused by or connected with a preceding attack, or attacks, of colitis. Dieulafoy limits the errors accused to cases of mistaken differential diagnosis of "mucous colitis" and appendicitis. In my judgment his appreciation should be broader. Ordinary cases of colitis of the catarrhal variety probably are often confounded with appendicitis, and operated on as such. The differential diagnosis has not been made with sufficient care, and error has arisen mainly because the so-called McBurney's point may exist, and does exist, quite frequently with simple colitis, and because the irregularities of the bowels seem to be explained by the presence of appendicitis, when in reality they are caused by colitis.

The appendix is removed and examined almost invariably —macroscopically and also microscopically—by careful men. The disregarded cecum is not, cannot be, examined, and consequently is to-day ruled out as practically non-existent. There is no doubt in my own mind that formerly, as we know, the cecum was made much of—too much—and the appendix ignored. To-day we see just the reverse of the medal all the way along the line. Happily someone arises finally who sees and talks straight, and this one may be and now is such a commanding personality that he challenges inquiry which must be listened to and regarded with closest, most earnest attention. Many great surgeons of France oppose his views, and yet they respect and honor them, because he rings true. He, Dieulafoy, as the writer, has always desired and endorsed sane and wholesome surgery; what he is opposed to always, and unalterably, is surgery that he feels will ultimately be obliged to retrace its steps and grant the medical man the hearing and consideration which proceed from the larger view of the physical organism of man, and which recognizes inactivity at times as "masterly" and the greatest human wisdom, when all sides of a question are calmly and rationally considered and duly weighed in the balance. I have written what precedes, filled with the importance of it, and corroborating and re-echoing only what Dieulafoy has so forcibly and truly, as I believe, defended and sustained.

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AMERICAN BORN BUT OF FOREIGN ADOPTION.

To the Editor of the Medical Record:

Sir:—In your issue of June 23, Dr. Hartzell writes as follows: "In 1896 Darier prepared the term *tuberculide* for a series of dermatoses, the individual members of which had been described from time to time under a variety of names. This name was at once adopted by the French, and has been slowly taken up by writers in England and Germany, and, to a less extent, in America."

That it has been "slowly taken up in America" is possibly due to the fact that the name really originated here. Some writers appear to prefer to quote from or refer to European authors, rather than to their American colleagues. In a paper read by the undersigned before the New York Academy of Medicine, April 2, 1891, as published in the Transactions of that body, will be found the following sentence: "If we now accept the prevailing doctrine, that certain cutaneous affections are the result of infection by the tubercle bacillus, it may be convenient to group them under the common title of *tuberculides*," etc.

The coolness with which the French adopt American ideas and rechristen them may be exemplified by the following instances: (1) The *undulatory* galvanic current described by me in the *New York Medical Journal*, July 11, 1891, reappears in the *Revue internationale d'Électrothérapie*, 1899, p. 318, as the discovery of d'Arsonval and Apostoli. (2) In the Medical Record of July 21, 1877, I strongly advised curettage *followed by the actual cautery* in the treatment of lupus. Some years later this method was signalized in France as "Brocq's treatment."

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OUR LONDON LETTER.

(From Our Special Correspondent.)

THE KING'S SANATORIUM—FOOD INSPECTION—METCHNIKOFF ON SYPHILIS—INFANT MORTALITY—UNIVERSITY AND COLLEGES—TROPICAL SCHOOL—HOSPITALS—COLLEGE OF SURGEONS —THE LATE SIR HALLIDAY MACARTNEY, M.D.

London, June 15, 1906.

King Edward VII. Sanatorium, respecting which I have kept you informed, was opened on Wednesday by His Majesty, who was accompanied by the Queen. It was a great day for the little town of Midhurst, and all along the three and a half miles from there to the sanatorium their majesties were cheered by the enthusiastic people who had come to see them, while arches, festoons, and flags made all the route gay. You will remember that when Sir Ernest Cassel offered the King £200,000 for philanthropic work His Majesty determined to devote this munificent donation to a sanatorium which should be as perfect as possible and thoroughly equipped for research. The site selected is admirably adapted for the purpose, about 150 acres in extent. The building is on the southern slope of a hill 494 feet above sea level, and the ground behind rises to 630 feet. The intention is not to provide for the very poor, but rather for the professional classes who fall victims to phthisis and are not able to afford the expense of treatment in private sanatoria.

But His Majesty desired that wealthier persons should not be absolutely excluded, and accordingly twelve rooms are set apart for them at a rate of 8 guineas per week, the other eighty-eight rooms being for those who can afford 2 guineas a week. Isolated from the other buildings is the pathological laboratory. Clinical and research laboratories are also provided, where it is intended that scientific work, both preventive and curative, shall be one of the prominent objects of the institution.

In the course of an interesting speech on the occasion the King said it gave him and the Queen much pleasure to be present, that it had always been their endeavor to do all within their power to mitigate suffering and to check the ravages of disease. He referred to the Queen's interest in the fight against tuberculosis as having become the patron of the institution at Davos, and then added: "It is our earnest wish that the sanatorium now opened and its research laboratories, equipped with every resource of modern science, may assist to advance the physiological knowledge of pulmonary diseases, and that this institution may, by

treating the disease in its early stages, be the means of prolonging the lives of those whose career of honorable usefulness has been interrupted by this terrible malady. I pray that God's blessing may rest upon this building and upon all who work within it, and all who come to it for aid, and that it may be a means of alleviating suffering and saving life for this and many generations to come."

Their Majesties then went for a long tour of inspection over the buildings, accompanied by members of the advisory committee, and at the conclusion expressed their great pleasure at all they saw.

The public is just now greatly exercised on one sanitary matter—its food supplies. Tinned meat is tabooed, and the press is demanding whether our home products can be as disgusting as importations. There is a reform regarding the matter, that medical men have demanded for years, that may possibly be now obtained, viz., security of tenure for medical officers of health and inspectors. At present in many country districts these officials are elected from year to year, and it is easy for an unscrupulous district councillor who has had an unfavorable report made about him to oppose the reelection of the officer who has done his duty. There seems no reason why the London law should not be extended throughout the Kingdom. The qualification of inspectors is also beginning to receive more attention. The Royal Sanitary Institute established examinations several years ago which have been approved by the Local Government Boards of England, Scotland, and Ireland. These examinations are held in the chief centers and are very practical, specimens of meat, fish, tinned and other preserved foods being submitted to candidates. Nearly 200 certificates of competency have been issued, and a good proportion are held by those having appointments in the principal towns or ports. But if the public is to be assured and inspection to be efficient, it will be necessary for a qualification of the kind to be made compulsory on all inspectors. The Chicago revelations have been discussed in the House of Commons, and the War Minister has sent a lieutenant-colonel to inspect and report. Challenged as to why he did not rather send a qualified medical officer, he maintained that an officer of the Army Service Corps had sufficient knowledge of sanitation. His action gives dissatisfaction, and people say it is a new lesson in "how not to do it."

Professor Metchnikoff devoted his concluding Harben lecture to hygienic measures against syphilis. Some of his ideas and statements seem to have excited considerable surprise, but the facts he related are very interesting. He called attention to the prevalence of nonvenereal syphilis where hygiene is altogether neglected; *e.g.* in some of the rural populations of Russia ignorance, poverty, and promiscuity disseminate the disease among little children by means of their games and caresses. Admitting that it is not by itself a fatal disease, he said malignant cases led to septicemia and others tended to shorten life by bringing about mortal diseases, and that next to tuberculosis syphilis exercised the more important rôle on the death-rate of insured persons, that is, the most vigorous part of the population. He referred to the subject of regulation of prostitution, to the proposal of some to instruct young persons as to the dangers of infection, and of others to promote early marriages. The objections to such means of prevention were mentioned, but indeed they have not abolished disease. The suggestion of vaccines must wait, he said, until cultures of the organism could be had. But he related recent experiments showing that the virus may be attenuated by passage through different animals. An accidental inoculation of an assistant in his laboratory who often handled infected monkeys is instructive. One day he noticed an ulcer on his lower lip which seemed suspicious, but the glands were not affected. It healed and was forgotten until a month later, when a similar lesion on the same lip induced him to ask advice. The glands were still unaffected, but to be quite sure a Javanese macacus was inoculated from the small ulcer, and, to the surprise of those concerned, four weeks later two typical primary lesions appeared on the macacus, and these lesions teemed with Schaudinn's spirilla. Fournier was consulted by the assistant and found nothing to justify a diagnosis of syphilis or to require mercurial treatment. No symptoms occurred for six months, which supported Fournier's opinion. Thus this assistant did not suffer from syphilis, but the ulcer on his lip caused a primary lesion on the monkey. This contradictory result the lecturer explained by assuming that the man was accidentally inoculated with a virus which acted as a very attenuated one.

Of course the professor satisfied himself that he might exclude the hypothesis of a former syphilis. Then he consented to the inoculation of a human being with virus passed through a macacus. Twelve days after there appeared two small nonulcerated pustules of a reddish brown just like those of secondary syphilis, which after disappearance left two pigmented spots. No glandular or other affection followed for six months. From these facts it was said the macaci may attenuate the syphilitic virus both for themselves and for man. Still, the professor said, they were but a first indication, and we are far from possessing an antisyphilitic vaccine, while, even if later the existence of one could be proved, it could be used only under very exceptional conditions. In fact, it might cause serious complications, for it is known that general paralysis and tabes occur in patients with quite insignificant signs of syphilis. But the lecturer seemed to think that further researches may make it possible to resort to such a measure of prevention in some cases, and he instanced children exposed to infection from relatives. But so many difficulties would beset this plan that other means of prevention deserve attention, and Professor Metchnikoff mentioned the suggestion of Cohn and Guiard as to mercury, and added that from a long series of experiments with mercurial preparations applied after inoculation of monkeys he concluded that such methods were valuable. He had afterward inoculated at his own request a medical student from chancres of two men. An hour afterward, the parts inoculated were rubbed for five minutes with calomel ointment, 1 in 3. Nothing followed. Four macaci were similarly treated as controls. Two showed lesions seventeen days later. The third was treated with calomel in an hour and remained free. The fourth, treated twenty hours after, had a primary lesion on the thirty-ninth day. That experiment showed that prophylaxis was attainable. Professor Metchnikoff did not pretend to discuss the morality of people who acquired syphilis through illicit sexual intercourse, but he suggested that many victims are absolutely innocent and should be protected. Those who regard prophylactic measures as immoral, he said, should apply the same arguments against antiseptics in midwifery, because they facilitated criminal abortion, and, to carry the argument to the end, they should oppose treatment as well as prophylaxis. True morality, he held, should promote prevention of all diseases, should not try to lead, but should rather follow, hygiene.

Mr. Burns, President of the Local Government Board, spoke at the National Conference on Infantile Mortality and said his department would render all the practical help it could. He might bring in a small bill to legalize municipal milk depots. Drinking among women he put as one of the serious tragedies confronting society. If he had his way married women should not be allowed to work in factories for three months before or six months after lying-in. "To reduce infant mortality they must concentrate on the mothers: let them glorify, purify, and dignify motherhood." Dr. Sykes reinforced this and added that the mothers should be urged to suckle their infants, for no strong race could be reared on the bottle. At the adjourned meeting yesterday resolutions were passed in favor of earlier registration of all births, and, as to still-births, that a medical certificate be required for burial. In regard to insurance, about which much has been said, Dr. Fraser said that a few years ago he instituted inquiries at Portsmouth and obtained irrefragable proof that there was no foundation for the sweeping statements that had been made as to children being insured by unscrupulous parents for the sake of the money insured for. Child insurance as regards causing infant mortality he declared to be an absolutely negligible quantity. A resolution was passed that steps ought to be taken to supervise the persons and places where infants are received for day nursing.

Sir Donald Currie on Monday laid the foundation stone of the new buildings he is presenting to University College Hospital. They comprise a School of Advanced Medical Studies, a Maternity Students' House, and a Nurses' Home. They cover an area of 18,290 square feet. Sir Donald expressed pleasure at the progress made with the work and his confidence in the future usefulness of the hospital.

Sir A. W. Rücker delivered the "Foundation Oration" at University College on Wednesday, in which he spoke of the extraordinary novelty of a number of distinguished gentlemen banding themselves together to establish what was intended to be a London University—undenominational—at a time when the only two universities in England were strictly denominational. He found one in every twenty-two students of the college were from the colonies, showing it had done its work, not only for London, but for the Empire. The approaching incorporation with the university would in no way injure the college, and he believed Kings College also would follow suit. This would lead to the confederation of London colleges with the university.

Your papers are probably circulating telegrams from Paris, such as ours are receiving, to the effect that Drs. Calmette and Guérin from many experiments on animals with tubercle bacilli conclude that they can be rendered immune by taking by the stomach bacilli which have been treated by heat. They even suggest that infants might be rendered refractory to tuberculosis by a dose of the properly

prepared bacilli given a few days after birth, followed by a second dose a few weeks later. Drs. Roux and Vallée are said to have been working on the same lines and obtained similar results.

The Hon. Bomanjee Dinshaw Petit, the munificent Bombay merchant who did much towards founding the London School of Tropical Medicine, went over it on Monday with the teaching staff and was entertained at luncheon. He expressed confidence that India would give substantial assistance toward its investigations concerning plague.

H. R. H. the Duchess of Albany opened a bazaar and floral fête yesterday on behalf of the Waterloo Hospital for Women and Children. The reception of nurses was an interesting ceremony, many being brought by infants in arms. The first, in fact, was conveyed by the infant of Prince and Princess Alexander of Teck and contained a gift of Mr. J. S. Watts, who sent with them 120 guineas. Altogether £700 was given in purses; and it is expected the bazaar will realize £2,000. The Lady Mayoress is to open it this afternoon. Mrs. Longworth and Mrs. Whitelaw Reid are to be at the American stall.

Yesterday at a meeting of the Governors of St. Mary's Hospital it was stated that the Clarence wing, although finished and capable of accommodating sixty beds, remains empty for want of funds to furnish. The cost per bed last year was £88-13-2, comparing favorably with £100-13-2 in 1904. The reduction cannot be expected to continue at the same rate. As to the new wing, it looks as if the managers had been in too great a hurry to indulge in building. Hospital managers seem always to be reckless in so far as not counting their cost beforehand.

The Council of the Royal College of Surgeons yesterday received the report of the committee appointed to consider the question of admitting women to the examinations. The committee recommended that the fellows and members be consulted as to the desirability of approaching the Royal College of Physicians on the subject, and the Council adopted the recommendation.

Sir Halliday Macartney, M.D., late Counsellor and English Secretary to the Chinese Legation in London, died rather suddenly on the 8th inst. He retired about six months ago, after a long and distinguished career. When a student he joined a contingent of volunteers for service in the Crimea. At the close of that war he returned to Edinburgh and graduated M.D. He then entered the Army Medical Service and went to India and China. After the peace he took service in China, being given military rank and command. He established an arsenal at Nankin and was governor of it for twelve years. In 1876 he was sent to England on a special mission. Later China established a permanent mission, of which he was appointed European Secretary. He was intimately acquainted with Chinese customs and did much to promote accurate notions of Western ideas in the East. He received the C.M.G. in 1881 and the K.C.M.G. in 1885. He negotiated the Burmah treaty in 1904, the Opium convention (1885), and that relating to the Chinese in the Transvaal, 1904.

OUR PARIS LETTER.

(From Our Special Correspondent.)

PROPHYLAXIS OF SYPHILIS—MILITARY SANITATION—ESOPHAGOTOMY FOR A FOREIGN BODY—A NEW SIGN OF PYOPNEUMOTHORAX—THE REPRESSION OF QUACKS—FOURTH COLONIAL CONGRESS.

PARIS, June 23, 1906.

AN interesting communication was presented before the French Academie de Médécine by Metchnikoff and Roux of the Pasteur Institute on the prophylaxis and cure of syphilis. After reviewing the observations they had already made on the transmission of syphilis to the monkey the authors reported the results of new experiments undertaken to demonstrate that inoculation with syphilitic virus can be made harmless to man if certain preliminary measures are taken. Before making the experiment the authors carried out a series of tests on monkeys which demonstrated conclusively that the application of a 30 per cent. ointment of calomel made at the point of inoculation several hours later prevents the development of all syphilitic lesions. After having obtained this same result in thirteen cases the authors then repeated the experiment on man. A medical student free from hereditary or acquired syphilis volunteered to serve as test object. On the first of last February the inoculation was made in the preputial sulcus with virus from two hard chancres, one of which had existed eight days and the other one month. Five monkeys were inoculated with the same virus, but one of these died of bronchopneumonia several days later. One hour after the inoculation the calomel ointment was during eight minutes massaged into the inoculation wound of the student and one of the monkeys. The same thing was done twenty hours later to a second monkey, and the two others were kept as controls. The initial lesion appeared in these seventeen days later, and in the case of the monkey treated after twenty hours on the thirty-second day. On the other hand, no evidences of disease appeared in the student either in the skin, the mucous membrane, or the glands, and the same thing was true for the monkey that had been similarly treated. Three months have passed since the experiment, and it therefore seems that in future it will be possible to use calomel ointment as a prophylactic against syphilis.

Hallopeau stated that he had taken up these observations with Neisser, who, after having repeated the experiments on monkeys, admitted their correctness. Hallopeau asked whether the use of such concentrated ointments did not give rise to manifestations of irritation. Metchnikoff replied that the present experiment on man was insufficient in some respects, but was of great interest, since it was in entire conformity with experimental results. The calomel ointment did not cause any irritation.

Lemoine and Simorin read before the Académie a paper on sanitary conditions in the army in which the barracks of the soldiers were discussed. The authors had investigated one hundred and thirty-four barracks in which a total of 95,000 men were lodged. It appeared that the mode of construction of the barracks was not of the greatest importance for the health of the troops. The dissemination of contagious diseases in the regiments was rather dependent on the size of the garrison, and also on the sanitary condition of the cities in which the barracks were situated. Accordingly it was found that in old barracks sheltering only four or five hundred men infectious diseases were less common than in new buildings containing from nine hundred to a thousand soldiers. The character of the buildings did not seem to play any rôle in the origin and spread of typhoid fever. Though pulmonary tuberculosis is more often observed in old barracks, this is because the latter are usually situated in large cities where the life of the soldier is much more strenuous, so that here again the buildings cannot be incriminated. The conclusion is that the military authorities should attempt to put smaller numbers in each dormitory, and preferably to construct small buildings for reduced numbers, and to insist on improvement of the sanitary conditions in the cities.

Richelot reported before the Société de Chirurgie a case of external esophagotomy for a foreign body followed by death. The patient was a man of sixty-five years who had swallowed his false teeth while asleep. After several vain attempts had been made to remove the foreign body Richelot was called the second day after the accident. Further attempts with esophageal instruments were unsuccessful, and on the fourth day external esophagotomy was performed with a temporary gastrostomy for purposes of feeding. The patient died forty-eight hours later of pneumonia. This report gave rise to a long discussion in which Sébileau, Pozzi, Picqué, Tuffier, Kirmisson, Delbet, and Quénu took part. All of these surgeons were unanimous in stating that foreign bodies in the esophagus, when irregular in shape, like false teeth, demand immediate esophagotomy, whereas the removal of smooth elastic bodies, pieces of money, buttons, etc., should be attempted without this measure. They also recommended suture of the esophagus after esophagotomy, which was not done by Richelot on the ground that it is not likely to hold. It was stated that on the contrary it was not unusual to obtain healing by first intention, and that even when the suture held only partially the resulting sinus closed much more rapidly than when the esophageal wound was left open. Mauclaire closed the discussion by recalling a case in which he removed by esophagotomy false teeth which had remained in the tube twenty-three days; recovery followed without complications. He stated that in such cases esophagotomy should never be done without making an attempt to remove the object with the aid of the esophagoscope.

A new sign of pyopneumothorax was described by Chauffard before the Société Médicale des Hôpitaux. In cases of pneumothorax in which the fluid is in great excess it is known that Hippocratic succussion as ordinarily practised is negative. The speaker had found in three cases that although succussion was negative while the patient was seated or standing, the phenomenon could be elicited in the recumbent position, or even

when standing with the body very much bent forward. This observation may be explained as follows: To obtain succussion it is necessary for a layer of air to exist over a layer of fluid, and if there is little liquid and much air the conditions are most favorable; if, on the other hand, the volume of air is too small the fluid waves cannot produce sufficient resonance and no succussion is obtained. With the patient in the horizontal position the relation of the two layers is changed, and owing to the greater area of the layer of air succussion is produced. This was illustrated by showing two bottles, one half filled with water and the other filled well into the neck. With the first succussion could be obtained in any position, but with the second the sound was produced only with the bottle in the horizontal position.

For the first time a congress is being held in Paris for the repression of the illegal practice of medicine, with the object of securing suitable legislation. The members of the legal profession are aiding the physicians and are assisting in the effort to exterminate the horde of quacks, charlatans, magnetic healers, etc., which is continually increasing in numbers and under the present inadequate legislation has become a menace to the body medical. The congress was held May 28 to 31 under the presidency of Professor Brouardel.

On June 18 the Fourth French Colonial Congress will be opened at Paris with numerous departments on important medical subjects.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

TETANUS—HOURGLASS STOMACH—PRIMARY TUBERCULOSIS OF THE NOSE—PUERPERAL SEPSIS—DISTENTION OF THE CECUM—EXTENSIVE INTESTINAL RESECTION.

VIENNA, June 18, 1906.

THE subject of tetanus was discussed before the Society for Internal Medicine by Professor von Frankl-Hochwart, whose experience in this field has been unusually great. His dissertation was based on the histories of no less than one hundred and sixty cases, fifty-five of which were discussed in some detail. One-fifth of the patients died as a result of the disease, the fatal termination for the most part being due to pulmonary involvement, from which observation the conclusion may be drawn that tetanus is to be regarded more as an intermediate cause of death, since it appears to reduce the powers of resistance against other infections, especially those of the lung. The course of the disease varies greatly in different cases, and the symptoms may subside entirely or may go on to a condition of chronic invalidism. The location and the type of the convulsions are also very irregular; the hands are principally affected, the legs less often, though the abdominal muscles, and even those of the eye, may also be involved. Some patients complain of peculiar spasms in yawning; sometimes a peculiar twitching appears in other parts of the body associated with nervousness, mental hebetude, disorders of vision, loss of memory, etc. One patient suffered from spasm only in taking objects in his hand; another only on crossing his legs. Enlargement of the thyroid gland is a frequent condition in tetanus which may be of considerable importance, and the fact that it was absent in the cases in which recovery took place suggests the possibility that when present it renders recovery more difficult. Every case of tetanus is serious, since even after complete disappearance of the symptoms there is danger of relapses. In one case tetanus recurred ten years after the original attack. Even after the characteristic manifestations of the disease have subsided a state of chronic weakness persists, comprising trembling of the extremities, general nervousness, brittleness of the nails, and falling of the hair. The evidence so far seem to show that few people ever recover completely from tetanus.

Blazs operated on a remarkable case of hourglass stomach due to cicatrization of an ulcer. The patient was a woman of forty years who was much emaciated and very anemic on coming under observation. Conspicuous features were the retraction of the epigastrium and the prominence of the meso- and hypogastrium, while a transverse sausage-shaped tumor was palpable above the umbilicus. Colicky pains and vomiting were observed after meals. At the operation it was found that the stomach was divided into two parts in its middle third by a scar running from the greater curvature to the lesser. Gastroenterostomy was performed, as the excision of the cicatricial band was impossible, owing to the dense inflammatory adhesions between the stomach and the head of the pancreas. Since the operation the pain and vomiting have disappeared, the patient takes a mixed diet, and has gained weight.

A case of primary tuberculosis of the nasal mucosa was presented before the Society of Internal Medicine by Panzar. The boy had suffered from nasal obstruction for some months, and on the right side of the cartilaginous septum there was a lesion the size of a ten-cent piece with necroitic surface covered with mucopurulent secretion. The edges of the ulcer were surrounded with small yellow nodules. The infection of the mucous membrane probably followed picking the nose with a dirty finger. The prognosis of tuberculosis of the nose is rather favorable. The treatment consists in curetting and cauterization, and in the case in question injections of tuberculin are also to be tried.

Vertes of Buda Pesth has reported the cure of a case of puerperal fever by extirpation of the uterus. The patient was a woman of forty years who had a difficult still-birth complicated bya large myoma of the cervix. On the third day of the puerperium chills, fever, and offensive lochia were noted. The diagnosis of purulent endometritis was made, secondary to the myomatous condition, but this was soon changed to that of septic infection. As the process was still at its beginning and as a uterine operation would have been necessary later in any case, the author decided to obviate further intoxication by removing the uterus. A panhysterectomy was accordingly done and a Mikulicz tampon was introduced into the peritoneal cavity from the vagina. Staphylcocci in pure culture were found in the uterine veins and in the parametrium. The patient recovered.

Silbermark, together with Ghon, has made experiments on cadavers in order to determine why the cecum should be the favorite seat of overdistention following acute or chronic strictures of the colon. They conclude that this is due to the fact that the peritoneal covering of the cecum permits greater mobility to this portion of the intestine. On this account the cecum is least able to withstand increased internal pressure. Silbermark also found that the anterior and posterior teniæ are the sites of predilection for diastasis of the cecal serosa and ascribes this fact to the lessened elasticity of this portion of the intestinal wall.

Lorenz performed a successful intestinal resection on a woman of fifty-five years from whom half of the small intestine and a considerable portion of the colon were removed for new growth. A primary carcinoma of the cecum had led to the formation of a large sharply circumscribed metastatic tumor of the lymph nodes. This was firmly adherent to the primary growth, and had also become fixed to the freeborder of the omentum and anterior abdominal wall. Several loops of small intestine were also adherent to the mass. It was therefore necessary to resect the portion of the colon involved in the primary growth, the ascending colon, and the hepatic flexure, as well as a section of the small intestine, which in the collapsed condition measured 292 cm. A lateral anastomosis was made between the remaining small intestine and colon. After some complications the patient recovered so rapidly that on the fourteenth day she was able to leave her bed, and some days later returned to her home. In the fourth week after the operation she passed successfully through a severe erysipelatous infection, accompanied by high fever and chills. She has not appeared to suffer from the removal of so large a portion of her intestine, has gained weight, and though the stools at first were mushy, of late they have been becoming formed.

Progress of Medical Science.

New York Medical Journal, June 23, 1906.

Joint Diseases, Especially Those of Childhood.—This topic receives a lengthy consideration from DeForrest Willard, whose main ideas are summarized in the following propositions: (1) Early diagnosis is the most important of all considerations. Physicians are responsible for a large majority of joint destructions, chiefly from carelessness or indifference in the examination of their patients. A child with any peculiarity of gait or carriage should be examined naked. (2) Every physician should abandon the thought that pain in a single joint in a child means rheumatism. A limp or peculiar gait, with rigidity of periarticular muscles, in a child always means some form of invasion, probably tuberculous, possibly septic. (3) Abort tuberculous in-

fection by immediate absolute rest and fixation of the joint. (4) Put the patient out of doors, day and night, for a long period of time. (5) Wise conservatism consists in the prompt application of all methods of relief, whether hygienic, mechanical, or surgical. In children conservatism should be the rule, since youth has remarkable recuperative power. In adults, however, operative measures are much fore frequently demanded. A limb that can readily be saved in a child, in the adult will demand amputation. If an operation will best accomplish a cure, such operation is true conservatism. (6) In septic cases following streptococcic, staphylococcic, pneumococcic, or gonococcic infection, open early and freely.

Digitalis and Barium Chloride.—M. R. Lamela reports a case which suggests that barium chloride is capable of replacing digitalis without the accumulative action of the latter, and without also its instant action on the gastrointestinal mucosa. His patient was a man of sixty years who had the usual sequence of polyarthritis and cardiac disease. On one occasion he took an overdose of digitalis and was pulled through with difficulty. Finally he arrived at the stage of orthopnea, nervousness, numbness of fingers, etc., and was put on one dram three times daily of a solution of barium chloride, gr. v to the ounce of water. After two weeks' treatment the pruritis disappeared, and later visible improvement was evident in the cardiac condition.

Bite of the Ombuta Treated with Potassium Permanganate.—F. C. Wellman reports the successful treatment of snakebite with the remedy named. The patient was a male negro in West Africa, who was bitten by the ombuta (*Clotho arietans*, Gray). The bitten area was excised, the wound filled with the crystals of the salt, while an aqueous solution of the latter was injected into the surrounding tissues. Alcohol was given freely. The wound sloughed, but at the end of a week it began to clear off and satisfactory granulations appeared. From this time on, the course was uneventful. The case presented the following distinctive features: (1) Loss of the coagulability of the blood after passing through the tissues at the seat of the bite. (2) Vomiting of blood (which, however, may have been due to violent retching), possibly from extravasations from the coats of the stomach. Such extravasations are attributed to the direct action of a special constituent of snake venom more abundant in the poison of the *Viperidæ* than in colubrine snakes. (3) Violent epistaxis. (4) Remote selective action of some ingredient in the venom, noticed by its effect on the respiration. (5) Sloughing of the site of the puncture, which cannot be attributed to the permanganate, as it is a common feature in snake wounds. (6) The stirring up of a latent malarial infection and the finding of parasites in the blood. (7) The complete recovery.

Journal of the American Medical Association, June 30, 1906.

Malarial Keratitis.—E. C. Ellett remarks that this disease, which consists in a branching linear ulcer of the cornea best manifested by staining with fluorescin, with variable surrounding infiltration, is an unusual complication of malarial disorders. It occurs most commonly in late summer and autumn, is never multiple, is very rare in the chronic forms of malaria, rarely occurs in both eyes, and not infrequently causes serious damage to the cornea. One attack predisposes to others, but not invariably. He believes that the lesions are probably trophic, and that they follow the nerve fibers of the cornea, and the fact that the corneal nerves lose their sheaths after penetrating about 1 mm. from the corneoscleral junction may possibly explain why the lesions never reach the edge of the cornea, but follow only the unprotected course of the nerves. As regards treatment, he says that the general condition should be looked after and a change of climate may be necessary. While he cannot say that he has seen striking results from quinine, it is nevertheless considered a necessary medication. Post-malarial anemia may call for iron, and blood examinations may be a valuable aid. Locally, an antiseptic wash and atropin should be always used and the eye protected. The most striking results will often follow the application of tincture of iodine, but this is very painful, even with cocainization and immediate irrigation, and is not always beneficial. Hot applications are useful and grateful to the patient. When the epithelium is regenerated, yellow oxide ointment or some similar preparation should be used to lessen the opacity. Refraction should be looked after and proper glasses supplied as needed.

Infantile Scurvy.—Alice M. Steeves reports two cases of infantile scurvy observed by her and describes the condition. She believes that the disorder is common in large orphan asylums and similar institutions, and in examining the mouths of 180 girls at the Lancaster Industrial School she found 20 per cent. with thickened, spongy gums, saliva purulent and mucoid, and with the nose, mouth, and throat inflamed. These girls all complained of having rheumatic pains, and while the condition, she says, is not strictly scorbutic, it seems to her to suggest a field for investigation.

Mounting Museum Specimens.—E. Albert describes his method of mounting pathological specimens in glycerin jelly. Like Coplin, he uses the ordinary Petri dishes, but he also adds stained microscopic sections of the tissues in the same Petri dish so that by placing the Petri dish on the stage of a microscope, the histological features corresponding to the gross characteristics of the specimen can readily be compared. The section, mounted between cover glasses, is attached to the under side of the cover of the Petri dish, at one side. If the cover is perfectly clear, as it should be, the section may be mounted directly on its inner surface with only the lower cover glass. An excess of glycerin jelly is used, so that when the cover is pressed down a little is squeezed out. After hardening is complete this excess is trimmed away and scraped out, and the whole sealed securely with gauze and paraffin.

Hypertrophy of the Brain.—J. H. Haberlin reports the case of a child, aged two, dying in convulsions, in which the apparently symmetrically enlarged brain weighed 1,712 grams (53 1-2 ounces). The membranes were not adherent, there was no flattening of the convolutions, no disproportionate increase in the size of the ventricles, and the gray and white matters were developed proportionately. Clinically, the case could not be differentiated from hydrocephalus.

The Lancet, June 16, 1906.

Metrorrhagia After the Menopause in Cases of Ovarian Tumor.—A. H. N. Lewers reports three cases. This symptom occurring at the time mentioned is generally regarded as evidence of malignancy in some part of the genital tract, but it is necessary to be sure in forming this opinion that the menopause has actually occurred. Of this fact we may feel reasonably sure if two years have passed without any mensstruation. Occasionally a postmenopause bleeding will occur without any morbid condition to account for it. Or we may be able to find some changes occurring in a uterine fibroid which has been quiescent for a long period, possibly a mucous polyp or even a subacute senile vaginitis, though the discharge here is generally yellowish, with the admixture of a little blood, and quite different from the actual hemorrhage of malignancy. Other possible causes are senile endometritis or ulcers on prolapsed tissues. The three tumors reported were two of multilocular cyst and fibroma, the corresponding ages of the patients being 60, 74, and 58 years. While, therefore, the appearance of a red discharge after the menopause should always excite suspicions of malignancy, and lead to a careful examination, yet it should be remembered that there may be other conditions to account for the discharge of a less threatening nature.

Intranasal Chancre Simulating Diphtheria.—J. D. Rolleston gives a brief summary of previously recorded cases and reports one personal case, his patient being a man of twenty-eight years, certified as suffering from nasal diphtheria. He had had diphtheria fourteen years before. One month before his first visit his nose became sore and began to swell. The right ala was thickened and tender, and lined with a membranous deposit, from which on pressure a serous fluid exuded. Left submaxillary and sternomastoid glands were considerably swollen and slightly tender. The throat appeared normal. There was on chest and abdomen a polymorphic rash, without pruritus. The nose was obstructed, and there was considerable right frontal headache. There was a very slight rise of temperature. Smears and cultures revealed no diphtheria bacilli. A diagnosis was therefore made of chancre from the objective appearance alone. The patient was placed on hydrarg. cum creta, two grains t. i. d., and the lotio nigra was freely applied to the nose. The beneficial effects of this plan were soon apparent, and in ten days the nose was nearly well. Other symptoms disappeared more slowly.

Examination of the Feces.—R. Baumstalk says that in trying to form an estimate of the capabilities of the intestine we must adhere to a special diet containing a necessary amount of calories and suitable proportion of the three principal groups of food stuffs. It must be taken readily, be digestible and agree well with even a disordered intestine. Coarse macroscopical fragments must not appear in the dejections and the diet must be

obtainable in any household. Such a diet is given in full by the author. The feces should then be examined macroscopically, microscopically, and chemically. Full details of the methods are given. The conclusions to be drawn from findings are then set forth. The author notes, among other facts, that the presence of connective tissue remnants in the test-diet stools points with certainty to a disorder of the digestion, as only the gastric juice is able to dissolve raw connective tissue, *i.e.* from the center and not from the well-cooked part of the meat. Achylia or hypochylia would usually be accountable for such a condition. Excessive peristalsis perhaps also plays an important part in some of these cases. Again, in excessive acidity associated with insufficient pepsin secretion (cases which not infrequently occur) the raw tissue meets with unfavorable conditions and appears again in the stools. A very minute examination of the stomach should be carried out in these circumstances. If muscle remnants are found macroscopically, or even in considerable amount microscopically, disturbance of the digestion in the small intestine may be inferred, for the stomach plays only an unimportant part in the dissolving of meat fiber, and the digestion of meat does not take place in the colon. With both connective tissue and muscle remnants in the stools, it may be concluded that both stomach and small intestine are deranged. Finally, he adds a few words in regard to the incubator test. After keeping the small fermentation tube (mentinoed under the head of chemical examination) in the incubator at 37° C., very little gas will be found under normal conditions. If one-third or more of the tube fills with water, that is pathological. It certainly betokens a morbid increase of carbohydrate fermentation if the reaction of the stools now tested once again is found to be strongly acid instead of being only feebly acid as before. It indicates degradation of the albumin when the reaction becomes more alkaline. When fermentation exists the feces usually assume a lighter color and smell of butyric acid; with decomposition, on the contrary, they become darker and have a very unpleasant smell. In the case of fermentation moreover, the formation of gases takes place more quickly and more freely, while with decomposition more slowly and more scantily. The signification of fermentation has already been explained above. Excessive decomposition of albumin occurs usually only in cases of severe diseases of the digestive tract, *e.g.* inflammatory changes of the mucous membrane of the colon, because it is especially the pathological products of the intestinal wall, mucus, serum, pus, which occasion putre faction, while merely functional disorders of the digestion of albumin seldom give rise to decomposition.

The Specific Nature of the Spirochetes of the African Tick Fever.—A. Breinl details a series of experiments in which the behavior of spirochætæ from the African tick fever was contrasted with that of similar organisms occurring in a case of relapsing fever occurring in New York City. The main portion of the paper is made up of the findings from various culture and inoculation experiments which cannot be well recapitulated here. The author concludes that the two organisms above referred to are of different species in that each confers a relatively active immunity against itself but not against the other.

British Medical Journal, June 16, 1906.

A Family Infected with Syphilis.—W. R. Grove reports the case of a girl who had contracted syphilis two years before giving birth to a female child. The mother had a few months' treatment. When the child was about 18 months old condylomata developed about the anus. Three weeks later the baby's grandmother, who had had the care of the child, developed a chancre of the lip. At this time a daughter of 12 years showed an initial lesion on the tonsil. Still later a young brother developed a similar lesion. The baby had lately been fed by spoon and, after the very common custom, the food had been tasted by the grandmother and the daughter, both of whom had fed the baby. The boy may have used the same spoon unwashed. The point emphasized by the author is the age of the child—eighteen months—before she infected others, and the consequent need of prolonged treatment necessary in all such cases. The entire family made a good recovery.

Pneumococcus Arthritis.—Another case (fatal) of this disease is reported by S. Raw, his patient being a man of 40 years who first had an ischiorectal abscess, the purulent contents of which contained *B. coli communis.* Several months later, after an alcoholic debauch, he developed pneumonia and a condition suggestive of acute sepsis, from which he seemed to be emerging when the right knee became swollen to such an extent that incision was necessary. Creamy "tuberculous" pus was evacuated which contained the pneumococcus. From that time on the man sank in spite of various stimulative measures and died about forty-eight hours after first appearance of joint symptoms.

Some Comparison of Phthisical with Nontuberculous Males.—This comparison is made by W. C. Rivers, chiefly with respect to healthy light-weight ratio and mouth breathing. He advances the following reasons in favor of the view that an hereditary causal relation to pulmonary tuberculosis may be predicated of mouth breathing and of deficient physique: (1) That both conditions prevailed to a much greater extent among consumptive males, quite independently of their disease, than among a comparable series of nontuberculous men. (2) That whereas some causes of mouth breathing, as also physical build, are known to be hereditary, a family history of phthisis is much more often given by those who are mouth breathers or of deficient physique—whether they be healthy or phthisical—than by others. (3) That the physique-incidence of mouth breathing in phthisical subjects probably differs from that in the nontuberculous. (4) That consumptives of a naturally good height-weight ratio fall ill, on an average, at a later age than do others.

Amebic Abscess of the Liver.—Two cases are reported by L. Rogers and R. P. Wilson. Both were cured by aspiration and injection of quinine into the cavity without drainage. Case 1 was one of very acute abscess, diagnosed by leucocytosis and the *x*-ray. Case 2 was one of repeated attacks of hepatitis culminating in abscess. Cure was rapid in both. The quinine solutions are prepared as follows: Two solutions are made up and sterilized before operation for aspiration, each containing 30 gr. of the bihydrochlorate of quinine, but in one this amount is dissolved in 2 oz. of water and in the other in 4 oz., the former being used if the abscess contains less than 10 oz. of pus, and the latter if it is larger. In this way the dose of quinine is limited to 30 gr., but in the case of larger abscesses it is dissolved in more water, so as to bring the drug into contact with all parts of the cavity. In Case 2, 50 gr. of quinine were injected, but the patient suffered from severe dizziness on coming round from the chloroform, so it appears advisable at present not to use more than 30 gr., which appears to be sufficient in practice. An objection which might be raised to considering the quinine injection as the cause of the rapid cure of these two cases of liver abscess is the possibility that aspiration alone would have been equally successful, as is very occasionally the case in tropical abscess of the liver. Apart from the extreme unlikelihood of two successive cases being so rapidly cured by aspiration alone, the author points out that the first case was a very acute one with remittent fever, which it is very difficult to conceive of as likely to be immediately cured by a single aspiration.

Berliner klinische Wochenschrift, June 11, 1906.

The Relations of Human Tuberculosis to that of Cattle.—Lydia Rabinowitsch discusses this subject from the standpoint of her own experimental work and of the observations of others, arriving at the conclusion that the *Perlsucht* baccilli of cattle are a source of danger to the human race. Numerous experimental observations in favor of this view are cited,—for example, the fact that in examining twenty strains of tubercle bacilli obtained from human beings two were found which, owing to their cultural peculiarities and increased virulence for rabbits must be regarded as bovine bacilli. In addition six of the strains were distinctly atipical, though their deviation from the ordinary human type was not sufficiently great to justify the conclusion that they were bovine organisms. The author sums up her views by saying that although the possibility of human infection through the bovine disease has been demonstrated, the gravity of this danger can as yet not be determined. The restriction of bovine tuberculosis is urgently required not alone from the standpoint of the agricultural interests but also on account of the danger to man involved. In fighting tuberculosis in man the first place must be given to the disseminated form and to consumption, and in this connection it is principally bacilli emanating from human beings that must be considered irrespective of whether the original infection was caused by human or bovine bacilli.

The Treatment of Obesity with Thyroid Extract.—Rheinboldt says that although this plan of treatment has fallen somewhat into discredit on account of certain undesirable features that sometimes attend it he believes that, properly employed, it is a very useful adiuvant to dietetic and other procedures. The unde-

sirable effects that have been noted may be ascribed to one of the following causes: There was an idiosyncrasy against the remedy, the dosage was incorrect, the preparation used was inert or contained toxic decomposition products, or the loss in weight was not entirely due to disappearance of fat but also involved destruction of body albumin. In order to avoid the first of these risks it is necessary in all cases to begin the treatment with the minimum dose. In most instances the treatment should be begun by the administration of one tablet per day, and the dosage is increased only when it is found that the amount being taken is not causing any decrease in weight. In general it may be said that more than seven or eight tablets a day should not be given, and it is also important to have the tablets well chewed. In order to avoid the danger of causing undesirable disturbances of body metabolism it is essential during the treatment to give the patient an excess of albumin in his diet. The overfeeding should be pushed to at least 3,000 calories and at least 20 per cent. of this amount should be composed of nitrogenous food, particularly meat. The use of thyroid extract imposes a grave responsibility on the physician, but is a distinctly valuable measure.

Münchener medizinische Wochenschrift, June 12, 1906.

The Treatment of Exophthalmic Goiter by Forced Feeding.—Alt presents a number of photographs to show the value of the dietetic treatment both of exophthalmic goiter and of cretinism. In both of these conditions he considers that the results to be obtained by overfeeding are of the greatest importance, though in order to carry the treatment out most effectively careful metabolism determinations are necessary. Caution is needed in planning the dietary in different cases, for the tolerance for carbohydrates is often quite restricted and the kidneys also are apt to be insufficient. He begins the treatment by giving a salt free diet, of which milk is the most important constituent, until the stored up chlorides have to a great extent been excreted and the existing edema has subsided. In continuing the treatment the salt of the diet is kept at about four grams per day, the amount of fluid is restricted, the carbohydrates are graduated in amount according to the tolerance, and the caloric value of the food is raised as high as possible by the use of albumin and fats. The latter are especially useful and are given in the form of milk, whipped cream, and unsalted butter. Under this régime the body weight increases, there is a subsidence of many of the characteristics of the disease, and increased functional capacity of the previously insufficient organs.

A Method of Ascertaining in One Hour the Amount of Albumin in Urine.—Buchner describes the following method which he says gives results sufficiently accurate for clinical purposes: Eight c.c. of clear unfiltered urine is placed in a graduated test tube and heated to the boiling point, two or three drops of nitric acid are added, and two c.c. of saturated solution of sodium chloride. The whole is then mixed thoroughly and is decanted into a specially graduated tube in which the precipitate is allowed to settle. Exactly at the end of an hour the amount of albumin may be read off directly. The author has controlled the test in a very large number of cases by the gravimetric method and with the Esbach apparatus, and concludes that it is accurate enough for ordinary work while it has the great advantages of simplicity and rapidity.

Deutsche medizinische Wochenschrift, June 14, 1906.

The Diagnosis of Typhoid Fever.—Poppelmann claims that after a little practice it is possible in every case of typhoid fever to discover the organisms in stained preparations of the blood by direct observation, and that the diagnosis may in this manner often be established at a period when the Widal reaction is still inconclusive. The technique he recommends includes the making of thick smears with blood obtained from the finger tip after this has been very carefully cleansed with ether and alcohol and sterile gauze. The slides also must be cleansed with great care and be sterilized by dry heat before use. The May-Grünwald stain is employed in the usual way. It is stated that the typhoid bacilli will always be demonstrable if the disease is typhoid fever. The organisms present great variations in their staining power and frequently appear to be on the point of undergoing complete degeneration. Fallacies to be guarded against are contamination of the preparation from the skin of the patient's finger and artefacts due to precipitates in the staining fluids, which are to be avoided by extreme cleanliness and filtration of the fluids respectively.

The Cure of Hysterical Contractures by Spinal Anesthesia.—Wilms describes a case of hysterical contracture of the musculature of the lower extremity in a man of twenty years, which made it impossible for him to walk without crutches owing to the complete fixation at the thigh, knee, and ankle joints. Under anesthesia the extremity at once became relaxed, but with the return of consciousness the rigidity returned. As a last resort spinal anesthesia was employed and the muscular relaxation that resulted was demonstrated to the patient. As soon as he had witnessed the complete mobility of the limb he was able to get up and walk himself unaided and no relapse has occurred.

Permanent Preparations of Urinary Sediments.—Wolff describes the following technique for this purpose. After centrifugalizing the urine, or obtaining the sediment by allowing it to settle in a conical glass the supernatent fluid is poured off and the fixing fluid, consisting of either 10 per cent. formalin followed by 90 per cent. alcohol, or the latter alone is added. If red blood cells are present it is preferable to use alcohol alone, as formalin destroys these structures in urinary sediments. The preparation is allowed to stand until the following day, when the supernatent fluid is replaced by alcohol and then by water if hematoxylin is to be used as the stain. If crystals are to be prepared, an alcoholic solution of the dye must be used, but for ordinary purposes double staining with hematoxylin eosin is the best. It is preferable to stain for twenty-four hours with weak solutions. After satisfactory staining has been secured the dye is replaced several times with water and the tube is allowed to stand for twenty-four hours longer. Five or six drops of concentrated alcoholic solution of eosin are added, followed in a few minutes by an excess of 90 per cent. alcohol. The sediment may now be preserved indefinitely in the alcohol or may be mounted in balsam by replacing with stronger alcohol, absolute alcohol, and carbolxylol. The preparations obtained in this way are said to be permanent and very clear.

French and Italian Journals.

Pathological Physiology of Seasickness. Attempt at Rational Therapeutics.—Chevalier, in describing seasickness, says that under the influence of the pitching and rolling of the boat the individual suffers from a series of abnormal reflexes by which the various nerves of the skin and viscera are disturbed. These various impressions are elaborated in the nervous centers and, being reflected to the various organs of the body, give rise to distinct disturbances. Pampoulais has shown that seasickness is the result of cerebral anemia, which is provoked by various causes, chief among which he ranks the cerebellar disturbance. Seasickness, then, may be said to be a combination of the central nervous system, of the pneumogastric, of the splanchnic, and of the phrenic. —*La Presse Médicale,* May 16, 1906.

Foreign Body in the Myocardium.—M. G. Leven reports the experiment performed on a dog by which he demonstrated that a foreign body was retained in the heart muscle for some time without apparent disturbance. A glass pipette was introduced into the heart. The end was then broken off. No attempt at asepsis was made. The object was left for five months in the myocardium, but the dog did not appear to suffer from its presence. After death there was found a very small patch of pericarditis on the visceral side of the serous membrane. The fragment of glass, which was about one centimeter long, had penetrated the anterior wall of the left ventricle without entering the ventricular cavity.—*Bulletins et Mémoires de la Société Anatomique de Paris,* December, 1905.

Trophic Nervomuscular Lesions Produced by the X-rays.—F. P. Sgobbo records the case of a patient treated for a localized syphilitic lesion of the lip and cheek by the *x*-rays, in whom after a time there developed a neuritis with an atrophy of some of the facial muscles as a result of the treatment. This was shown by a careful electrical examination, which showed that the affected muscles presented a slowness of response to galvanic and faradic currents with a reversed electrical formula, and that there was a trophic alteration of the nerves and muscles. These alterations could not have been due to the syphilitic process, because they were not confined to the area of this manifestation. The author believes that we should admit that the rays may affect parts of the body at a distance from the area treated and should exercise proportionate care in treatment, because such lesions come on slowly and are progressive.—*Giornale di Elettricita Medica,* March and April, 1906.

Book Reviews.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; Assisted by H. R. M. LANDIS, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital, March 1, 1906. Philadelphia and New York: Lea Brothers and Company, 1906.

THIS quarterly review is now so well known that it is only necessary to announce the appearance of the new volume, and to state its contents. The present issue contains sections on the surgery of the head, neck, and thorax, by C. H. Frazier; on infectious diseases, including acute rheumatism, croupous pneumonia, and influenza, by R. H. Preble; on the diseases of children, by F. M. Crandall; on rhinology and laryngology, by D. B. Kyle; and on otology, by B. A. Randall. The *résumés* of all the important articles in medical literature, and the critical remarks of the various contributors, together constitute a most readable and valuable review.

THE OPERATING-ROOM AND THE PATIENT. By RUSSELL S. FOWLER, M.D., Surgeon to the German Hospital, Brooklyn, N. Y. Fully illustrated. Philadelphia and London: W. B. Saunders Company, 1906.

THIS book is intended to serve as a guide to operating-room nurses and hospital internes and presents a great deal of useful information in concise form. It opens with a description of the operating room and its personnel and the duties of the latter from chief nurse down to orderly are described in considerable detail. The instruments and the supply room are considered in the following two chapters, but as this constitutes one of the most essential features of the nurses' work, the descriptions might have been somewhat less brief. Although the book is excellent in many respects, faults of both omission and commission are unfortunately numerous. Boiling is the only manner in which instruments may be sterilized according to Fowler, as no mention is made of any other, and this also applies to rubber gloves. Boiling the latter and then immersing them in bichloride solution is a method to be reserved for emergencies and will be found but rarely practised in well regulated hospitals. The subject of anesthesia is quite fully discussed, but no mention is made of ethyl chloride, which is now so extensively used. The preparation of the patient is fully discussed and also the post-operative treatment, but along with the latter it would have been wise to present a more extended description of shock and secondary hemorrhage, two extremely important topics about which a nurse and a house doctor ought to be well informed. The errors mentioned and some others will probably be corrected in a second edition, for in other respects the book is deserving of favorable attention.

THE COMPANIONSHIP OF BOOKS AND OTHER PAPERS. By FREDERIC ROWLAND MARVIN. New York and London: G. P. Putnam's Sons, 1905.

EVERY page of this charming work of Dr. Marvin bears witness to the scholarly mind, studious habits, and at the same time, facile pen of the author. This is a good book for the professional man to take away with him on his summer vacation, and on his return home it can be added to the literature on his waiting room table. The various papers contained in the volume are all more or less interesting; they cover a wide range of subjects, and will appeal to thoughtful persons.

A TREATISE ON SURGERY. By GEORGE R. FOWLER, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic, etc. Volume I. Philadelphia and London: W. B. Saunders Company, 1906.

THE gifted author of this work, who succumbed to the very disease in the treatment of which he was considered an authority, was well fitted by experience and temperament to produce a work which would be characterized by novelty and general excellence. The present volume, which is shortly to be followed by another, deals with the general principles and also with the regional surgery of the head, neck, and thorax. In the first part of the book the arrangement varies somewhat from that ordinarily followed in other text books; the subject of surgical bacteriology, for example, is introduced in connection with the etiology of inflammation, of which it is, of course, an important factor. The increasing interest and value of hematology, urinology, and other kindred subjects in their bearing on general surgical diagnosis has prompted the incorporation of a separate section on these topics, which has been written by Dr. F. E. Sondern. A comprehensive view of this subject is afforded within the limits of this chapter, which is thoroughly practical and up to date, although much in it was necessarily sacrificed to brevity. The subject of surgical anesthesia is discussed and the chapter on operative technic is very satisfactory. An evidence of the up-to-date character of the work is shown in the chapter on gun-shot injuries, where the experience with the modern weapons gained in the recent Russo-Japanese war has been drawn upon for purposes of illustration.

In the practical portion of the work, the anatomical method has been followed and in the present volume there is included the surgery of the head, the neck, and the thorax. These subjects are satisfactorily treated in most respects, but some wonder may be expressed why no greater space is given to such an important topic as the surgery of the brain. A great deal of attention is given to the various plastic operations on the head and face. The differential diagnosis of every surgical condition is fully treated as are the etiology and pathology, and another feature of interest is the paragraph of historical reference which is included in each chapter. As for the general make-up of the book, nothing seems to be wanting. The illustrations are scattered throughout the work and are with few exceptions entirely original. They are superior to those of most textbooks. The appearance of the second volume of this treatise will be awaited with interest, for this takes up the surgery of the abdomen, a field in which Dr. Fowler did much original work and with which his name is particularly associated.

KLINISCHE UND ANATOMISCHE UNTERSUCHUNGEN ÜBER DEN CRETINISMUS. Von Dr. WILHELM SCHOLZ, Privatdocent in Graz. Berlin: August Hirschwald, 1906.

THE author is an inhabitant of that section of Europe where cretinism is practically endemic, and was led to a closer study of the subject from his constant contact with the disease. His researches deal more particularly with clinical and statistical facts based on a large number of cases, together with measurements of body, skull, and face, *x*-ray examinations, pathological conditions, and metabolism. Scholz is inclined to the belief that improved hygienic and social conditions will exert an important bearing in eliminating or at least in holding the disease in check. The badly degenerated types will be unable to procreate and the influx of new blood by immigration will, he thinks, aid in overcoming the tendency to transmit the milder types of the disease. He does not appear to be impressed by any therapeutic measures which have thus far been advocated. The book is very complete and will be of undoubted value to those directly interested in this subject.

L'INJECTION TRACHÉALE SIMPLIFIÉE. Par le Dr. HENRI MENDEL. Paris: F. R. De Rudeval, 1906.

THIS monograph is an exploitation of the author's method of giving injections by holding the cannula of the syringe against one lateral pharyngeal wall and discharging the fluid against the opposite wall, whence it runs down into the larynx and trachea. He contends that when the tongue is held as in ordinary laryngoscopy, the pharynx forms a funnel of which the only outlet is the larynx unless the patient attempts to swallow.

MANUAL OF DISEASES OF THE EAR, NOSE, AND THROAT. By JOHN JOHNSON KYLE, B.S., M.D., Clinical Professor of Otology, etc., in the Medical College of Indiana. Philadelphia: P. Blakiston's Son & Co., 1906.

SO many manuals have appeared during the last few years in this special department of medical literature that the reviewer has difficulty in not repeating his former observations. Suffice it to say that the present volume is printed on good paper, with clear type and good illustrations, is handsomely bound, and of a handy size and shape. So much for the vehicle. As to the contents, we believe that Dr. Kyle has prepared one of the most useful manuals that has fallen into our hands. First of all he makes free acknowledgment of the older and more pretentious treatises and then shows himself a careful gleaner in the field of current literature. His methods of treatment he confesses are somewhat dogmatically expressed, but he properly justifies this position by saying that his statements are the convictions resulting from his own experience. The table of contents is well subdivided and the index renders ready reference possible. We are somewhat surprised to find the following statement under the heading of general anesthesia: "In the removal of tonsils and adenoids, a general narcosis is exceedingly dangerous; the pain of operation in children is so small as compared with the greater danger of the anesthetic that only in exceptional cases should other than a local anesthetic be used." He considers that in adenoids the A. C. E. mixture is the safest general anesthetic to use. We do not believe, however, that his general proposition meets with the approval of the majority of those who work in this special field.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 1065, Vol. 69.*)

SECTION ON OBSTETRICS AND GYNECOLOGY.

Third Day—Thursday, June 7, 1906.

DR. C. S. BACON OF CHICAGO IN THE CHAIR.

Manual and Instrumental Dilatation of the Gravid Uterus.—Dr. J. CLIFTON EDGAR of New York read this paper. He said the graver obstetrical operations find their necessity in the difficulty or impossibility of overcoming the barriers to delivery by the natural passages, viz., the resistance offered by the bony pelvis, and the obstruction of the cervix. He believed unfortunate results for both mother and child were far more often the consequence of nondilatation or unsatisfactory dilatation of the cervix than of obstruction offered by the bony canal. The various mechanical devices for cervical dilatation, cervical incisions, and vaginal cesarean section were all applicable in appropriate instances and no method should be condemned without a trial. Clinically he divided his cases in which manual or instrumental dilatation of the pregnant or parturient uterus was demanded into those calling for rapid dilatation (within an hour), and those where more time was available for removal of the cervical barrier. Rapid dilatation could be accomplished by incision or mechanical dilatation, the former including cesarean section and deep cervical incisions. After the thirtieth week of gestation mechanical means for rapid dilatation would suffice in most cases, incision of the cervix being rarely called for. He had cut very few cervices since the introduction of the Bossi dilator. Receding from the thirtieth week of gestation, the number of cervices that could not safely be rapidly dilated by manual or instrumental means increased. Bimanual stretching of the cervical sphincter—which he had practised in cases of eclampsia, placenta prævia, and delayed labor since 1892—had proved very satisfactory. If difficulty were experienced in inserting the second finger, it was his routine practice to resort to preliminary dilatation with the Bossi dilator. He had failed to find any advantage in the two-bladed dilator of Gan or the latest type of Harris' dilator that the Bossi did not possess. He had found the Bossi dilator invaluable in cases in which much resistance was encountered because of the nondisappearance of the supravaginal cervix, and in which time did not allow the preliminary use of the hydrostatic bag. Ten or fifteen minutes' use of this dilator would set up uterine action in such cases, and consequent drawing up of the internal os; it would also cause softening of both rings of the cervix, relaxing them sufficiently to permit a safe and rapid manual dilatation. He never used the Bossi dilator to complete the effacement of the cervix. For slow dilatation of the cervix he relied chiefly on the hydrostatic bag of the Champetier de Ribes type. He had found the solid uterine bag to act in the same way, but to a less extent. Both the hydrostatic bag and the solid bougie acted more promptly and energetically in primiparæ than in multiparæ. He had often employed them as a preparatory means to be followed by manual dilatation, with the patient anesthetized. Artificial delivery was then accomplished or the case left for spontaneous expulsion.

Instrumental Dilatation of the Parturient Uterus.—Dr. FRANKLIN S. NEWELL of Boston in this paper gave as the general indications for instrumental dilatation, hemorrhage, the toxemias of pregnancy, and the conditions complicating toxemia. The hand was the best dilator which had been discovered, and was to be preferred to any other instrument in proper cases. Its usefulness, however, was limited by the fact that it was easily exhausted. In cases of marked rigidity the hand was inefficient. Safe dilatation depended upon the recognition of the fact that the cervix was made up of strong muscular tissue which had to be tired out. In view of the fact that the hand was capable of exerting pressure for only a limited time, it was necessary to dilate partially before the hand was used at all, hence manual dilatation was of limited value. In most cases of placenta prævia the hand was the best dilator Unintelligently applied, it became a source of danger. In many cases in which manual dilatation was impossible, or possible only after dangerously prolonged operation, instrumental dilatation was useful. Many instruments had been devised for this purpose. The elastic bags had a limited field of usefulness. In placenta prævia and broken heart compensation the action of the bags was too slow to be satisfactory; in eclampsia they were contraindicated. The first satisfactory dilator was the Bossi dilator, which possessed many advantages. It also possessed certain distinct disadvantages. It was too powerful, and it was impossible to control the force. The ideal dilator was one which, while capable of accomplishing the work, was under the control of the operator. Dr. Newell demonstrated such a dilator which he had devised. With this instrument the cervix could be dilated to three-quarters dilatation with no more danger than if dilated with the hand.

Dr. HARRIS of Paterson, N. J., said he had never placed a woman on the operating table without effecting dilatation with the hands. Every physician should know a hand method of dilating the cervix. His own method consisted of the introduction of the hand into the vagina. If the vagina were too small to admit the hand, or the head had entered the vagina, thus preventing the entrance of the hand, this method could not be used. His method could not be used unless the first finger could be introduced to the metacarpophalangeal knuckle. It required from one-half to one and one-half hours to dilate the cervix to the circumference of eleven or twelve inches. The head would then pass easily, so that the time of labor was taken up with the manual dilatation. The personal factor entered into the question.

Dr. BOYD of Philadelphia thought it would be a step backward to lay too much stress upon instrumental methods Manual dilatation had served him so well that he wished to defend that method. Any or all of the instruments described would be of service to dilate the cervix to probably the degree of one dollar; beyond that the cervix would very often tear with the use of instruments. He would use instrumental dilatation of the cervix to the size of a quarter or a half dollar, completing the operation by manual dilatation or incision.

Dr. STOLTZ of South Bend, Ind., said he had found manual dilatation a most trying ordeal to both operator and patient. He had used the Bossi dilator with good success. After it was inserted he put the finger in between the blades, really dilating with the finger. As dilatation proceeded he inserted two fingers between the blades. The dilator was so constructed as to give an excellent fulcrum upon which to use the knuckles. He used the dilator merely to take up the slack. In that way the dilatation is done as much with the hand as with the dilator.

Dr. HASTINGS of Toronto, Canada, said a hard and fast line should be drawn between where skilled obstetrics ended and meddlesome midwifery began. Not so much depended upon the method as upon the operator. If one went slowly, making, say, a quarter of a turn a minute, dilatation could be accomplished with properly curved instruments with comparatively little danger. Danger arose from rapid dilatation with an instrument not properly curved. The great disadvantage with manual dilatation lay in the fact that the hand readily became powerless. The hand should not be the source of great infection, because no case of obstetrics should be attempted with the ungloved hand.

Dr. PADDOCK of Chicago deprecated the use of instruments. He thought the dilator was used too frequently. In a

considerable practice in obstetrics he had found but one case in which it was necessary to use any dilator other than the hand. Any of these instruments were dangerous in unskilled hands. He would prefer the instrument presented by Dr. Newell.

Dr. Dührssen of Berlin, Germany, advocated vaginal cesarean section. He had repudiated the Bossi method entirely, considering it dangerous. It led to tears which endangered life. In cases of rigid cervices there was a lack of elastic fibers, and dangerous tears resulted from attempts at dilatation. In such cases it was possible to dilate by incision. He thought cesarean section could be performed in the home as well as in the hospital by the skilled operator.

Dr. von Rosthorn of Heidelberg, Germany, said that in Germany obstetricians were divided into two groups, one recommending incision and the other dilatation. He had employed the Bossi method, slowly, as recommended by Bossi himself, and had had no failures. He had also had experience with vaginal cesarean section, worked out by Dr. Dührssen. In Germany the majority favored the incision or vaginal cesarean method. It was a surgical method, and by it the operator could know exactly what he was doing, and it should be employed in cases in which it was necessary to act quickly. When there was plenty of time the balloon method, which was sure and not at all dangerous, could be employed.

Dr. Boardman of Boston wished to go on record as being still in favor of manual dilatation. He had opposed the dilating instruments except in the hands of experts. The skillful operator could employ the incision method with perfect safety, but for the mass of practising physicians he did not advocate its use. No instrument could have the intelligence of the human hand, which was an important factor. He disposed of the question of infection by the manual method by advocating the use of gloves.

Dr. Carstens of Detroit considered the operation advocated by Dr. Dührssen a simple one, though some present seemed to think it a difficult one. By separating the bladder from the uterus, making an incision of, say, two inches, without opening the peritoneum, keeping well in the median line, the child could be delivered by version or forceps in six or seven minutes, with very little hemorrhage. This was necessary only in cases of uremic convulsions.

Dr. Yanos of Chicago said that the obstetrician should be prepared to employ any method. It was rare that it became necessary to use the incision method, but when it was necessary every obstetrician should be able to do it. It was very simple in reality. The Harris method of manual dilatation was a most excellent one. She recommended the combined instrumental and manual dilatation.

Dr. Edgar said he had never seen a branched dilator that would not tend to slip after two-thirds dilatation of the cervix had been accomplished. He believed the dilator presented by Dr. Newell was a radical advance over all others, particularly as the hand did the dilating. With the Bossi dilator the amount of force could not be estimated, as could be done with the hands or with the Newell dilator. He believed the case to be rare which would resist manual or instrumental dilatation, or a combination of the two, but in some instances it would be necessary to resort to vaginal or suprapubic cesarean section. The method advocated by Dr. Dührssen was useful, but was employed by him less frequently than it was a few years ago.

Dr. Newell agreed with Dr. Edgar with reference to the slipping of the terminals after two-thirds dilatation with the instrument. He thought more babies had been sacrificed by the operator's hands being tired than had been injured by the use of instrumental dilatation. Vaginal cesarean section in cicatricial stenosis was necessary. He thought the earlier it was realized that obstetrics was a surgical condition the better for the community as a whole.

Vaginal Celiotomy.— Dr. Dührssen of Berlin, Germany, read this paper. He reviewed the work of the American pioneers in this line, and gave the history and technique of the operation devised by himself. He had performed 1,593 vaginal celiotomies. In the first 900 cases the mortality was 3 per cent. The mortality of all cases was 2 per cent., and was due to fibroids and pregnancy.

The Best Method of Closing Aseptic Wounds, Especially Those of the Abdomen.—Dr. Henry O. Marcy of Boston presented this subject. Despite the recognition of the importance of incorporation of the peritoneum within the sutures, and of the advisability of including a considerable amount of the tissues within the grasp of the ligature, failures of this method were of constant occurrence. A careful analysis of the parts to be rejoined would make the explanation of these failures easy. The experience of many operators was confirmatory of the views which he had advocated for years concerning the advantages of the buried animal suture. He had emphasized the importance of the accurate readjustment of the sundered structures in all parts of the body, but particularly in the abdominal wall, which must be expected to resume its normal function and to be kept for the rest of life in a state of more or less active tension. The possibility of closure in layers was dependent upon the use of buried sutures. Silk for this purpose should be discarded. The suture material must be aseptic and absorbable, and the tendon suture most nearly answered these requirements. The peritoneum should be carefully coaptated, preferably by the use of the so-called shoemaker's stitch, a double continuous suture. The sutures should not be drawn too tightly. The post-recti fascia should be included in the peritoneal suture. The muscle fibers need not be reunited unless there was bleeding or injury due to undue manipulation. The thick anterior fascia should be carefully reunited. Each line of coaptation was closed upon its independent plane. As a rule the fatty layer required no suture, a careful coaptation of the skin usually holding the fatty layers in apposition. The skin was preferably closed by a continuous suture. The deeper layer of the skin only should be penetrated by the suture, since a micrococcal infection might easily follow if the sweat ducts or hair follicles were penetrated. The so-called subcuticular stitch should be called the subglandular or subfollicular suture. The suture material should be fine and not too highly chromicized. The reduction of scar tissue to the minimum was important. He did not advocate the use of wound drainage in the after-dressing, but used the collodion seal devised by himself, modified by the incorporation of iodoform. This seal adhered so closely that it did not permit the escape of the subcuticular fluid, and was germ-proof. A wound aseptically made and maintained, in aseptic and well-vitalized structures, would heal by primary union. Dr. Marcy presented specimens of kangaroo tendon and told of its preparation and care.

Dr. Ferguson of Troy, N. Y., said Dr. Marcy had spoken of getting below the glands of the skin and of the subcuticular stitch penetrating the deeper layers of the skin. He had seen Dr. Marcy operate and knew that he put the suture into the network of fat and missed the deeper glandular structures which sometimes penetrated the whole skin, and in which lurked the germs. He had lately pretty largely discarded the seal, since he had reason to believe that adhesive plaster could be made aseptic. He applied the plaster gridiron fashion.

Dr. Clarke of Cambridge, Mass., advocated Dr. Marcy's method. The wound must be aseptic and kept so. Properly employed it left a hardly perceptible scar.

Dr. von Rosthorn of Heidelberg, Germany, said that in Germany there was no more discussion of how to close the abdominal wound—the tier method was always used. In the Bassini operation the layers were divided according to their anatomical situation, and in closing the wound were sutured one after the other. As a prophylactic measure to prevent abdominal hernia, the same tier method should be employed. This method had been used in Ger-

many for about twenty years. The dressing was as simple as possible, with a little iodoform or sterile gauze held in place not by adhesive bands, but by the paste described by Dr. Schleich. Exact research carried on in Germany had shown that ventral hernia took place only when suppuration occurred, and not when the wound healed by primary union. He agreed with Dr. Marcy as to the suture material to be used. He used catgut for the deeper layers and silk when catgut would be absorbed too quickly, thus allowing rupture or fissure. Otherwise he deprecated the use of silk. Another method employed in Germany consisted in putting clamps upon the skin superficially. Drainage, complicated dressings, bandages, etc., had all been abandoned in Germany.

Dr. Goelet of New York said two results were to be accomplished in closing the abdominal wound—to make a strong wound and to make a nice looking wound. To accomplish this, attention must be paid to the uniting of the different layers and to the suture material employed. Dr. Marcy deserved great credit for popularizing the subcuticular method, whereby a very strong wound and a very nice looking wound could be obtained. The suture material must be not only aseptic but antiseptic. For some time he had been using iodin-treated catgut. This was immersed in iodin or iodide of potassium for eight days. It was strong and could not be infected, and would last long enough for primary union. In uniting the peritoneum he included the lower border of the muscular structure of the abdominal wound, and with the fascia the upper border of the muscle. If abundant, he united the fat with a loose continuous suture, and the skin with a subcuticular suture.

Dr. Stoltz of South Bend, Ind., thought it advisable not to make an edge-to-edge suture of the peritoneum, but to bring the edge up, making a running suture. He also advocated overlapping the transversalis aponeurosis, just as Andrews had done in inguinal hernia.

Dr. Reynolds of Defiance, Ohio, advocated the use of adhesive plaster after the tier method of suturing.

Dr. Straus of New York called attention to the method of making the section in different planes, which was advantageous in the event of suppuration, which would sometimes occur. He used kangaroo tendon.

Dr. Dührssen of Berlin said he used the method advocated by Dr. Marcy. Instead of making the incision in the median line he made it to one side. The inner side of the fascia was stripped off from the muscle to the median line, and the muscle separated in the median line. With primary union hernia was impossible with this method. Iodin catgut was employed to great advantage.

Dr. Dorsett of St. Louis emphasized the importance of not using too large sized animal tendon. Ligatures should not be tied too tight. Many men used through-and-through sutures with just as good results as could be obtained by the other method.

Dr. Marcy emphasized the fact that no matter what method was employed, it should be done correctly. He had tried the eversion and overlapping methods, and had found eversion with double suture the best. He detailed the preparation of catgut suture material, and showed how every process of disinfection was one of injury to the connective tissue of the suture.

Uterine Myomata Complicated with Pregnancy, with Cases.—Dr. E. E. Montgomery read this paper, in which he asserted that growths of the submucous or interstitial varieties predisposed to sterility because of the accompanying endometritis. Subperitoneal and interstitial growths not encroaching upon the cavity of the uterus did not preclude conception. The occurrence of pregnancy increased the danger of the patient, because of the more rapid growth of the tumor, the possibility of its becoming impacted in the pelvis, pressure upon important organs, increased probability of interruption of the pregnancy, and the greater susceptibility of the patient to saprophytic or septic processes following delivery. For these reasons it was better that such a patient should be subjected to operation prior to the occurrence of pregnancy. The character of the operation would necessarily depend upon the age of the patient, the number, size, and situations of the growths. In women under thirty-five years of age, where it was possible to retain a functionating uterus, it should be done. He cited a case to show that extensive cicatrization did not necessarily preclude the successful process of gestation. The conditions which would justify interference after pregnancy were the following: (1) Persistence and more or less continuous pain over the abdomen. (2) Such rapid growth of combined tumors in the uterus that the life of the patient was in danger from pressure upon vital organs. (3) Such a situation of the growth as would make it a positive obstruction upon the completion of pregnancy. (4) Indications, hemorrhagic and otherwise, that abortion or premature labor is impending. Hysterectomy, either complete or partial, would be the operation attended with the least mortality for the mother, but absolutely doomed the other life and precluded all hope for offspring, consequently should be accepted only when there was no hope for the continuation of pregnancy, or when alternative measures were absolutely contraindicated. The enucleation of fibroids was not necessarily attended with the termination of the pregnancy, as shown by three cases in which this was done, the patients continuing to full term.

Dr. Clarke of Cambridge said that a few years ago he had collected the results of one thousand deliveries to learn the outcome with reference to the mother and the child, and he did not recall a single accident to the child. It was surprising how many pregnant women went on well with large myomata unless the tumor took on rapid growth. He limited operation in these cases to subperitoneal myomata with long pedicles and to rapidly growing tumors.

Dr. Boldt of New York, referring to the liability of abortion following myomectomy during the period of gestation, said his experience was that pedunculated tumors and those situated subperitoneally were not likely to produce abortion. Those situated interstitially were apt to do so. No matter how much appearances might lead to the probability of obstruction from the tumor during confinement, there was a likelihood that at the end of gestation nature would provide some way by which the tumor would be displaced so that delivery would take place spontaneously.

Dr. Tuttle of Cambridge cited two cases which he had recently had of uterine fibromata complicating pregnancy, in which removal of the tumors excited no contractional pains, both women going on to term.

Dr. Benjamin of Minneapolis said the indications for operating on these cases were pain, the location of the tumor, and the symptoms of degeneration. Many of these patients would complain of more or less severe pain, with symptoms of abortion. He cited two such cases upon which he had operated without any particular trouble.

Dr. Carstens of Detroit laid down the simple rule that if the tumor was at the fundus it should be left alone; if down low, it should be enucleated; if in the posterior cul-de-sac and adherent, it should certainly be operated upon.

Dr. Frederick of Buffalo agreed with Dr. Carstens that fibroid tumors below the ileopectineal line, if seen early enough, should be enucleated; if the woman went to term in such case Cesarean section should be resorted to.

Dr. Dorsett of St. Louis, referring to the rapid growth of fibroid tumors, cited a case in which he opened the abdomen, intending to do an enucleation, but the tumor was pushed down and filled the whole cavity of the sacrum. He did not try to remove the tumor, the woman went on to full term, and the tumor seemed to undergo involution with the uterus.

Dr. Porter of Fort Wayne, Ind., said that in addition to mechanical irritation the presence of fibroid tumors greatly increased the chance of sepsis after delivery. The location of the tumor was not the indication for its removal, but whether or not it would interfere with the woman's recovery after delivery.

Dr. Montgomery agreed with those who advocated non-

interference unless there were absolute indications for interference. If the patient suffered no inconvenience from the too great size of the tumor, she should be allowed to go on to the completion of her pregnancy, because in the end cesarean section could be resorted to if necessary.

Pregnancy and Labor Complicated by Anterior Fixation of the Uterus.—Dr. George M. Boyd of Philadelphia read this paper. In 1886 ventrofixation was welcomed as a positive means for curing the retroverted uterus. The uterus was firmly fixed to the anterior abdominal wall, and all went well until complications to pregnancy and labor developed. These complications varied from bladder irritation and bladder pains to abortion, dystocia, and obstructed labor. Various modifications of the method were devised, all having the purpose of obviating the dangerous complications of future pregnancies. Ventrosuspension obviated the difficulty in some cases, but did not prove satisfactory in others, and surgeons were still divided in their opinion as to the merits of ventrofixation and ventrosuspension. He reviewed the complications met with and their treatment.

Dr. Warren of Portland said that after thirty-two years of obstetric experience he had just had his first case of rupture of the uterus. It followed the classical course of labor, complicated by fixation, beginning with the escape of the waters, followed by severe pain in thirty-six to forty-eight hours. No presenting part could be felt, the cervix could not be felt. His advice was to open the abdomen and free the adhesions or after opening the abdomen to empty the uterus. Finally the head appeared in the lower strait, occipitoposterior position. Terrific hemorrhage followed delivery. The child had delivered itself through the rupture.

Dr. Bovée of Washington said this subject of fixation or suspension was an obsolete one. It was an absolutely illogical operation, and one should not be surprised to hear of accidents following it.

Dr. Frederick of Buffalo believed it to be illogical during the child-bearing period. He protested against suspension. In 50 per cent. of cases it did not suspend the uterus at all.

Dr. Lawrence of Columbus, Ohio, reported two cases of obstruction of the bowel following ventrosuspension, in which the loop of bowel passed over the drawn-out attachment of the uterus and became strangulated. The operation devised by Bovée of shortening the retrosacral ligaments was much more logical.

Dr. Boyd said, in closing the discussion, that when the patient was found with the cervix high up in the pelvis, with a large mass obstructing the outlet, with no attempt of the head to descend, even under anesthesia, the condition was a serious one. In such case the operator should be governed by the position of the cervix and the position of the fetus. If in the later months of pregnancy the head was found dipping into the pelvis, the case might go on without complications; if the cervix was high up, however, this would probably not be so. He did not approve of premature labor.

Hand Disinfection.—Dr. Herman J. Boldt of New York read this paper, in which he called attention to a method of hand disinfection which was more certain, more agreeable, and cheaper than the methods now in use. The ideal condition was absolute sterilization, which was as yet not attained. Three methods were in use: Fürbringer's, by means of hot water, alcohol, and mercury bichloride; Kelly's method, requiring potassium permanganate and oxalic acid, and the third, the use of chloride of lime and sodium. All were imperfect. Landrer and Kramer had shown that scrubbing the skin with soap, ether, and some antiseptic solution acted only on the surface of the skin, and it was later shown that often after so-called sterilization more germs could be obtained from the hands than before the disinfection was attempted. In 1886 Loew and Fischer called attention to the disinfecting power of formaldehyde. Recent experiments had discovered a process by which all difficulties heretofore attached to solutions of formaldehyde had been overcome. The process consisted in dissolving the gas in a solution of absolutely neutral soap. The formic acid decomposed part of the soap and combined with the alkali, leaving the fatty acid free; by filtration a clear, stable solution of pure formaldehyde in soap was obtained. This gave a solution which was more efficacious than all others, and from it all irritating properties had been removed. This antiseptic would do all that any others would do, and more. It destroyed germs and spores more quickly than any other antiseptic, and would penetrate and kill microbes where no other form would reach. It did not roughen the hands nor harden the skin, was non-irritating, and left no unpleasant after-effects.

Dr. Carstens of Detroit had never used this method of hand disinfection, but would not agree with Dr. Boldt that the older methods were so inefficient as would be inferred from the paper.

Dr. Lawrence of Columbus, Ohio, advocated simple measures for cleanliness. He saturated the skin to be disinfected with turpentine, which dissolved out the fats, then used soap and water. He had never had any unsatisfactory results.

Dr. Boldt said that any man connected with a large surgical service would sooner or later have an abscess, which would indicate to him that there was something wrong. There was no such thing as an absolutely clean hand from a surgical point of view.

The Stem Pessary for Amenorrhea and Dysmenorrhea. Some Further Observations.—Dr. J. K. Carstens of Detroit summed up his conclusions on this subject as follows: First, the stem pessary would generally cure amenorrhea after all other means had failed. Second, it would develop an infantile uterus and enlarge a prematurely atrophied one, and would restore a superinvolutional womb to a normal condition. Third, it would cure most cases of intractable dysmenorrhea in which no special pathological condition could be found. Fourth, if worn for six months or a year it would sometimes cure sterility. Fifth, all inflammatory conditions about the pelvic organs must be rigidly excluded before its use, and proper antiseptic precautions should be observed in its introduction.

To What Extent Can the Gynecologist Prevent and Cure Insanity Among Women?—Dr. W. O. Henry of Omaha read this paper. He held that the intimate connection between pelvic disease and insanity in women had not received due consideration from alienists or gynecologists. The profession and the laity should understand that any irritation too prolonged in subjects of certain types would prove an important link in the long chain of causes leading to a mental upset. Alienists and gynecologists should cooperate in removing these pelvic sources of irritation before insanity occurred. By such cooperation 75 to 80 per cent. of the women who now became insane would be saved from this calamity, while 60 to 70 per cent. of those already insane might thus be cured.

Dr. Manton of Detroit said that in an analysis of several thousand cases he could not find a single case in which it was apparent that the mental disorder was due to pelvic disorder. He did not believe the relation of pelvic disorder to insanity as great as Dr. Henry seemed to believe. Insane women should be given the benefit of necessary surgical measures, just as sane women would be, but further than that he did not advocate surgical interference.

Dr. Lawrence of Columbus, Ohio, said that the possibilities of an insane patient recovering from the mental disturbance were greater if all forms of irritation were removed. He did not know that removing some intra-abdominal or pelvic disorder would relieve the mental condition, but he did believe that putting such a patient in proper physical condition would help to bring about an improvement, if not a cure, of the mental condition.

Dr. Henry maintained that these pelvic disorders in women of unstable nervous organization were often the particular thing that upset the mind, and that cure of these conditions would prevent insanity, or, if the mental condi-

tion were already impaired, removal of the irritation would bring about a cure.

SECTION ON SURGERY AND ANATOMY.

Third Day—Thursday, June 7.

Radium in Surgical Work.—Dr. Robert Abbe of New York stated that epithelial cancers of the face are all curable by radium, especially when the tumor is situated in a locality where its removal by surgical means would necessitate a disfiguring operation. In his experience radium proved successful in cases where the Röntgen ray failed. The action of the radium resembles that of the Röntgen ray, but it differs specifically, curing some cases which resist the latter. It is applicable to the interior cavities of the nose and mouth which are inaccessible to the ray. Its sphere of usefulness is widening continually, as rapidly as its effects are being studied more carefully.

Primary Position in Bloodless Treatment of Congenital Hip Dislocation.—Dr. Frederick Mueller of Chicago claimed that the large percentage of subspinal positions after the Lorenz operation usually are due to a twisting and bending of the neck of the femur. If the head is replaced in its socket by the well-known maneuvers, it is forced out of its place again if the thigh is placed in the Lorenz primary position. This is due to the fact that the axis of the pocket-shaped recesses does not correspond to the position of the axis of the femur, head, and neck. Stable reposition requires that these axes correspond. Mueller places the femur in a neutral rectangular reduction so that the patella faces the frontal plane. This position is fixed by a cast which reaches down to the ankle or to the toes, if necessary. This position has given most beautiful results, even in cases in which the Lorenz operation failed. It can also be used advantageously for transforming subspinal positions into real anatomical positions.

Dr. Virgil P. Gibney of New York employed the bloodless reduction method in forty-three cases. Eight of these were anatomical cures; there were two functional cures; seventeen patients were improved; fourteen were unimproved; there was one doubtful case and one patient died.

Surgery of Peripheral Nerves.—Dr. J. B. Murphy of Chicago stated that all nerves of the lower motor neuron are capable of regeneration for a long period after division. This includes all the spinal and cranial motor nerves, all those nerves having a neurilemma. Nerves of the upper motor neuron are not capable of regeneration to functional activity. Motor nerves should all be restored to accurate apposition immediately after division, and also after paralysis from division, contusion or compression. Union and functional transmission is the uniform result. The interposition of foreign bodies, connective tissue, retard or even prevent nerve union. Regeneration and reestablishment of function is in proportion to the size of the trophic ganglion of the peripheric nerve. When the ganglion or trophic cell body is destroyed, axones are not regenerated.

Surgical Treatment of Facial Palsy and Brachial Birth Palsy.—Dr. Alfred S. Taylor of New York used the hypoglossal nerve in preference to the spinal accessory because of the more intimate anatomical and physiological relations of the muscle fields, the nuclei, and the cortical centers of the facial and hypoglossal nerves. Also in each case operated on the method of lateral implantation of the facial onto the hypoglossal trunk was used in preference to the transverse section of both nerves followed by end-to-end suture. He believes the results to be better. The return of power is very considerable. There is no mortality. Voluntary motion returns in every case to a greater or less extent, but it is very essential to follow systematic after-treatment for many months in order to obtain the best results. There is no time beyond which the operation is contraindicated so long as there is muscle tissue remaining; therefore from the beginning of the facial palsy, electricity, massage, and other means of maintaining the nutrition of the paralyzed muscle should be employed until such time as spontaneous cure occurs or operation is indicated. Inasmuch as no definite prognosis can be given, it is reasonable to wait one year for signs of spontaneous improvement before resorting to operation. In the brachial birth palsies early operation is indicated, that is, in from six to twelve months. The deformities should be prevented by massage both before and after operation.

Mr. Chas. Ballance of London, England, did the end-to-end anastomosis. On several occasions he had united the distal end of the hypoglossal nerve to the gustatory.

Dr. Harvey Cushing of Baltimore discussed, briefly, the histogenesis of nerve regeneration.

Dr. A. J. Ochsner of Chicago cited a case of ulnar nerve division following gunshot wound in which he bridged over a space of 7½ cm. by means of fine catgut strands, about twenty in number Within three years the patient possessed full control of the arm.

Dr. F. S. Lund of Boston operated on three patients according to Dr. Taylor's method with perfect results.

Ischemic Paralysis and Contracture of Volkmann.—Dr. Chas. A. Powers of Denver tabulated fifty-one cases collected from the literature and cited one personal case. The result (independent of treatment) was complete failure in ten cases; some improvement in fourteen, and a relatively good result in twenty-seven, implying more or less return of function. Of twenty-two cases treated by operation a good functional result seems to have been secured in the majority. Of the thirty non-operated cases good results were secured only in a minority and in several of these improvement was apparent only after years of observation. To save a muscle in its entirety the cause must be removed within five hours, for in about seven hours the rigidity supervenes, corresponding to rigor mortis. Regeneration cannot occur unless circulation is promptly reestablished. When the injury and its results are slight or moderate, time and proper treatment will accomplish much. Complete restoration of function is not known.

Treatment of Fractures of the Patella.—Dr. Jos. Ransohoff of Cincinnati presented a study of fifty-one cases with eighteen operations. He stated that fractures of the patella are often partial and subperiosteal and require no operative treatment, even if recognized. A master of aseptic surgery may operate in every case of patellar fracture where separation of the fragments can easily be recognized. Where the diastasis indicates the lateral involvement of the lateral expansions of the quadriceps, the indications for operation are plain, unless valid contraindications are present. The proper time for operation is the first week. The operation ordinarily indicated is the open operation with suture of the lateral tears and fixation of the fragments by some approved method. In old standing cases with very wide diastasis of the fragments, excision of the latter and suitable tendon plastic will probably give better results than bone suture. The knee joint should never be invaded by one who does occasional surgery. In the eighteen cases of this series operated on, the operation was performed twice on the second day, once on the third, twice on the fourth, and in the remaining cases before the fifteenth day. The only fatality occurred in a patient operated on on the seventy-ninth day. The average stay in the hospital of the early operations was thirty days; of the average non-operated cases it was sixty days. Of the late cases it was eighty-four days. Suture with silver wire was done five times, with kangaroo tendon or chromicized catgut nine times, and the tobacco-pouch suture was used in four cases. It did not appear that those sutured with silver wire did better than those sutured with animal suture. In one case it was necessary to remove the wire after the patient left the hospital. In two cases a considerable ankylosis remained.

Dr. Robert Weir of New York did not approve of opening the knee joint for treatment of fracture of the patella. If he were the patient he certainly would object to such a procedure.

Dr. Charles A. Powers of Denver favored operative interferencee because in his experience the results had been better than from nonoperative treatment.

Dr. A. T. Cabot of Boston stated that in the case of patients who can submit to a long course of treatment, he frequently carries out the expectant plan; but if the patient is one with whom time is an essential element, he prefers the operative treatment.

Diseases of the Urachus.—Dr. John F. Binnie of Kansas City reported a number of cases of this kind and discussed the occurrence and treatment of the various affections which may be found associated with a patent urachus.

Spontaneous Intracranial Hemorrhage.—Dr. Harvey Cushing of Baltimore reported three cases of focal epilepsy occurring in patients having the so-called "port-wine" marks in the ophthalmic distribution of the trigeminal nerve. Presumably a nevus of the dura existed in all these cases, and from this nevus one or more spontaneous hemorrhages, subdural, had taken place. Adhesions left after the absorption of the clot were doubtless the occasion of the motor discharges from the cortex. In one of the cases operation was attempted, but owing to extreme vascularity it was abandoned. In a second case a craniotomy, with separation of the adhesions, was successfully carried out. In the third case operation was considered inadvisable. Dr. Cushing stated that vascular nevi occurring on the face show a tendency to conform in outline with the distribution of one or more of the main trigeminal branches. These cutaneous nevi may be associated with some degree of hypertrophy of the deeper tissues of the face, with an enlargement of the eye, and finally with the presence of a corresponding nevoid condition of the dura mater. This dural nevus may lead to a spontaneous hemorrhage during infancy with consequences similar to those which follow the subdural hemorrhages occurring during the early months of life from other causes—epilepsy, spastic hemiplegia, or even amentia. The absorption of the clot may lead to corticodural adhesions, which in favorable cases could be separated with benefit to the epileptiform convulsions, provided measures such as carotid ligation are taken to prevent complications from too great a loss of blood during the operation.

Diagnosis and Treatment of Tuberculosis of the Kidney.—Dr. Arthur Dean Bevan of Chicago stated that the frequency of this condition is much greater than was supposed. In more than nine-tenths of the cases the lesion, for a time, is limited to one kidney. The second kidney, in long-standing cases, may become involved through an ascending infection from the bladder. The primary infection, in nearly all cases, occurs through the circulation. It is highly essential to make a diagnosis as soon as possible, before the second kidney is involved, and to institute the radical treatment of a nephrectomy at a time when the process is still limited to one kidney. Nephrotomy should not be done.

Dr. Van Buren Knott of Sioux City, Ia., considered the use of the cystoscope of the greatest assistance in arriving at an early diagnosis. He also condemned nephrotomy as a palliative operation. Nephrectomy should be performed in every case in which the disease can be located positively and it is confined to one kidney.

Dr. H. A. Kelly of Baltimore found that in man the disease may be primary in the generative organs, ascending from the testes; while in women it was primary in the kidney. He called attention to the frequency with which errors in diagnosis may be made by placing too great reliance on what are now considered positive symptoms. The wrong kidney may be excised or treated. This should be avoided by careful study of the history and by carefully weighing all the findings. Nephrotomy may be necessary as a temporary means to relieve the patient, but nephrectomy should follow. However, in some instances it may be imperative to resort to nephrotomy, when the other kidney had been previously removed for tuberculosis. One patient so operated on was in perfect health four years after the operation.

Dr. Willy Meyer of New York stated that the most important symptom was frequent urination, at night as well as in the daytime. The pain may be misleading. It may be absent or it may be referred to the opposite side. Ulceration of the ureteral orifice is also an important sign and should not be disregarded. Nephrectomy should be done as early as possible and this should be followed by proper hygienic treatment—not preceded by it, as is often done.

Dr. Jos. Ransohoff of Cincinati did not believe that the infection ever was an ascending one because the tubercle bacillus is nonmotile. He did not favor nephrotomy as a final operation.

Dr. L. L. MacArthur of Chicago believed that in cases of mixed infection it is better to drain the affected kidney for four or five weeks, removing the septic products, before attempting more drastic measures. The final results will be better.

Surgical Aspects of Congenital Cystic Kidney.—Dr. F. B. Lund of Boston stated that it was important to recognize the true condition in these cases because usually both kidneys are affected. Nephrectomy often results in causing death from uremia. The best treatment in the case of large cystic kidneys causing symptoms is incision of the large cysts and packing with gauze, also fixation by suture, if movable. This condition is one of great importance to the obstetrician and to the surgeon. It frequently runs its course undeterred until the secondary renal or arteriosclerotic changes result in death. Surgical interest results from the fact that the tumor, because of its size, frequently causes dragging and pain, and often immobility of the kidney. When cut down on it may easily be mistaken for carcinoma or adenoma of the kidney.

Treatment of Bone Cavities.—Dr. J. E. Moore of Minneapolis discussed the treatment of bone cavities by filling it with a material similar to the Mosetig bone plug. He found the following the most satisfactory of his experience: Spermaceti, 8 parts; olive oil, 2 parts; iodine, 1 per cent. The spermaceti is melted at a low heat on a water bath and the olive oil is added. The iodine is dissolved in the liquid, which is stirred until it congeals. Heat must not be used after the iodine is added. The mass is solid at the body temperature; melts at 108 F. and is antiseptic without being irritating. The iodine was considered preferable to iodoform because it was soluble, inexpensive, and more actively antiseptic than iodoform.

Uterine Fibroids Associated with Gallstones.—Dr. A. Vander Veer of Albany reported four cases of uterine fibroid in which there was a history of biliary colic, and two in which the history was not clear. He advised that once the peritoneal cavity had been invaded the appendix as well as the gall-bladder be inspected carefully and operative intervention resorted to if necessary.

Technique of Operations on the Head and Neck.—Dr. George W. Crile of Cleveland stated that in operations for malignant diseases the plan of the operation should be determined by the necessities of entire removal rather than a set technique. Principles, not rules, should govern the technique. The control of the blood pressure, both local and general, are of paramount importance. The principal sources of danger are mucopulmonary infection, hemorrhage, and shock. The blood supply of the brain should, as far as possible, be conserved. Crile places the patient in a tightly fitting sack which causes an anemia of the upper part of the body. The application of a principle of dissection as thorough as that generally employed in operations for cancer of the breast, having due regard for all the lymphatics, both the superficial and the deep groups, should give as good results in this region as in the former. As a rule, operators do not consider the lymphatics sufficiently when operating on the head and neck region.

Dr. R. H. M. Dawbarn of New York referred to his work of ligating the external carotid—the starvation operation. He said that by constricting the limbs tight enough to accumulate the blood in the extremities, it is not necessary to resort to the use of Dr. Crile's rubber suit or the slanting

posture described. Such operations as resection of the jaw and removal of adenoids may in this manner be rendered bloodless. If, when the constriction is removed, hemorrhage ensues, the application of gauze wrung out of hot water at a temperature of 212 F. will immediately check the bleeding.

Dislocation of the Outer End of the Clavicle.—Dr. Charles L. Scudder of Boston reported two cases of complete dislocation of the clavicle in which operation was necessary because of the irreducibility of the dislocation and the failure to maintain reduction once it was affected. About six weeks after the accident a suture of the acromioclavicular joint was made, using linen and catgut in one case and aluminum bronze wire in the other. The suture was passed through the acromion process and outer side of the clavicle, and another might be passed through the clavicle or fibrous tissue of the joint and through the coracoacromion ligament. The result was a promptly occurring and a permanent one.

Surgical Treatment of Congenital Hydrocephalus.—Dr. J. Shelton Horseley reported a case of large hydrocephalus, congenital, with a large meningocele at the base of the skull. The meningocele was removed and the patient recovered, but the hydrocephalus continued to grow. Various operative procedures were adopted, but the only one that proved satisfactory was continuous drainage by the direct open method through a malleable silver tube. The patient finally died from enterocolitis.

Osteoplastic Resection of the Costal Arch in Order to Reach the Vault of the Diaphragm.—Dr. Willy Meyer of New York illustrated his paper fully by means of drawings and pointed out the advisability of the procedure advocated by him in the treatment of conditions, such as abscess, etc., involving the tissues immediately under the diaphragm.

Capillarity in Intestinal Suturing.—Dr. F. Gregory Connell of Salida, Colo., presented the results of an experimental study aiming to show that the danger of peritoneal infection by capillary action of the suture material had been greatly exaggerated. Capillarity in this connection was generally understood to mean the seepage or extending of a fluid along the suture beyond that portion which was in direct contact with the fluid. The extent of the capillary action depended on various modifying conditions, the most important of which was an inhibitory action of the mucous lining and contents of the intestinal canal.

(*To be continued.*)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held March 20, 1906.

Dr. Warren Coleman in the Chair.

Specimen of Congenital Defect of the Interauricular Septum of the Heart.—Dr. A. M. Pappenheimer presented this specimen, which was removed from a child of four months who was brought to Bellevue Hospital in a dying condition. There were no cardiac murmurs, clubbing of the fingers, or other indications of cardiac involvement. There was a papular rash, which pointed to a possible specific history. The heart was moderately enlarged, the hypertrophy affecting the right auricle and conus arteriosus. In place of a normal septum between the auricles there was a defect filled in by a curtain made up of fine fibrillary lattice work. Sketches were presented showing the conditions, which were interesting, not only from their rarity, but from a developmental point of view.

Dr. Alfred Meyer said the specimen was interesting from a physico-diagnostic point of view. So far as auscultation was concerned there had been no diagnosis made of the defect, probably because the child was in a dying condition when brought to the hospital. This was in keeping with organic disease as it occurred in the adult; shortly before death even extensive disease of one or more valves gave nothing upon auscultation. He asked how long the child lived after it came under observation.

Dr. Pappenheimer replied that it lived only two hours. There was a patent foramen ovale, a condition fairly common without giving signs of distress just prior to death.

A Case of Yellow Fever.—Dr. Harlow Brooks related the case of a powerful Italian who presented himself at a dispensary after three days' indisposition, followed by three days' severe illness. He was deeply jaundiced, had a temperature of 104.5°, and a rapid, strong pulse. He complained of pain in the back of the head and neck and of marked nausea. He constantly vomited greenish brown material, and could retain neither food nor drink. He was sent to a hospital, and by the time he had reached his destination he was in practically a moribund condition. His temperature had fallen to 98°, and the pulse remained weak and rapid, and the heart sounds were muffled. He claimed to have lived in New York for four weeks before this time, but investigation showed that he had no doubt overstated the time, and had fled from New Orleans on account of the yellow fever epidemic. He had evaded quarantine in some manner which could not be traced. As these facts could not be obtained at the time, he was thought to be suffering from a severe form of malaria. The blood failed to show the malarial plasmodia. An ambulance surgeon who was a recent graduate insisted that the case was one of yellow fever. The patient died before morning. At the autopsy very pronounced olive green pigmentation of all the tissues of the body, evidences of hemolysis, microscopic hemorrhages in the skin and mucosa, and a fatty and dilated heart were found. The spleen was greatly enlarged, 23 cm. in length, 9.5 cm. in breadth, and 3.5 cm. in thickness. The tissue was firm and deep olive green in color. The liver was enlarged, soft, and congested. There was general edema of all tissues, and the lymph nodes were universally enlarged and congested. The case was diagnosed as probably one of extreme anemia following severe and long-standing malaria. The microscopic examination showed nothing of importance save a very pronounced pigmentation, except in the liver, where extensive necrosis of the centrally situated cells of the lobules was found; about the periphery of the lobules many liver cells showed karyokinetic figures. The necrosed cells showed alterations simulating acute yellow atrophy, Wei's disease, or yellow fever. Taking the negative blood findings, with the history and clinical and anatomical characteristics presented, the diagnosis of yellow fever seemed justified. On account of the newspaper notoriety it was decided not to put the case on record at that time, but he wished now to put the case on record, as he believed it to be the only case that had developed in New York City in some years. It also illustrated the great possibilities which still existed in our quarantine system by means of which cases direct from an infected district might gain access to our thickly populated tenement districts. The case demonstrated as well that eternal vigilance must be exercised by those in charge of hospital and dispensary work in New York City as there was practically no disease that might not at any time present itself.

The Fate of the Typhoid Bacilli in the Organism.—Dr. B. H. Buxton gave an account of his experiments in which he injected normal rabbits intraperitoneally with typhoid bacilli with the object of determining the fate of the bacilli in the organism. For purposes of injection he used a culture of moderate virulence which had been kept on artificial media for four years. Its virulence might be considered constant. He used agar tubes and injected one-half of a twenty-hour-old culture. Repeated tests by plating showed that the dose might be taken as of the order of 4,000 million bacilli. He followed Bail's method of bleeding the rabbit from the carotid and then removing the organs. The spleen was taken as the unit, and a piece of

the liver the same size as the spleen was taken. These pieces were rubbed through fine wire gauze with 15 c.c. of salt solution, and one c.c. of this pulp was plated out in agar and the colonies counted after twenty-four hours. Other organs were tested, but he confined his present report to the liver and spleen. From the number of colonies on the plates a rough estimate of the total number in the organ could be made by multiplying the count for the spleen by 15, and that for the liver by about 1,500. Immediately after bleeding and before opening the abdomen the peritoneal cavity was washed out with 400 c.c. salt solution. Portions of the wash water were plated out and a rough estimate made of the number of bacilli remaining alive in the abdominal cavity. The rabbits were killed at intervals of two, four, and six hours after intraperitoneal injection. The numbers found varied very greatly, but one fact stood out, namely, that the bacilli were always more numerous in the liver than in the spleen, not only absolutely, but relatively. If the bacilli were numerous in the liver they were also numerous in the peritoneal cavity. In two cases in which there were over a thousand found in the liver there were several million alive in the peritoneal cavity; two cases with about 100 each on the liver plates showed about half a million alive in the peritoneal cavity; and two cases in which there were few or none in the liver showed few or none in the cavity. The results when the rabbits were killed at the end of four and six hours were very similar, though on the whole the number of bacilli appeared to increase. After sixteen hours the number of bacilli in the liver had decreased much more than in the spleen, and the relative amounts were about the same in the two organs. After twenty-four and forty-eight hours there were usually still a goodly number in the spleen, but scarcely any in the liver. After inoculation one had not the least idea what would happen. Sometimes the rabbit seemed hardly affected. A rabbit killed four or six hours after inoculation might have killed practically all the bacilli or might be swarming with them. As a rule, however, the rabbits got very sick about two hours after inoculation. Such a rabbit might die after three or four hours, might live several hours longer, and then die or recover. The size of the rabbit seemed to have little to do with the result. It was generally accepted that typhotoxin was an endotoxin, which was liberated only upon the death of the bacilli, and that if an animal died three or four hours after inoculation it was because it had killed so many bacilli that the toxins liberated had killed the animal. He had had rabbits die at the end of three or four hours and found scarcely any bacilli, and again he had found them literally swarming with bacilli. When death occurred so quickly it was impossible to suppose there had been enormous destruction and at the same time an enormous increase in the number of those left alive. Death under these conditions might be accounted for by the fact that the bacilli flood the organism very rapidly, and there might be destruction of a certain number at some vital point as a nerve center. If the destruction took place in the peritoneal cavity a very much larger dose of the endotoxin would be required to cause death. Experiments were made at one hour-, thirty-minute and fifteen-minute intervals with similar results. The organs might be already filled with bacilli. Finally the whole operation was conducted as quickly as possible, the entire time being only ten minutes from inoculation to the stoppage of circulation, and the result was that some were found flooded with bacilli and some not. One salient feature was that what went on in the peritoneal cavity was usually only a part, and a small part, perhaps, of the whole process by which the animal protected itself from infection.

The Albumin Bodies in the Urine; the Recognition of Serum Albumin and Serum Globulin.—Dr. THOMAS W. HASTINGS read this paper. (See page 13.)

Dr. E. E. Smith said that under the heading of albuminous substances Dr. Hastings had included some things that he had been accustomed to regard as proteid in nature, as, for instance, hematoporphyrin. He asked Dr. Hastings if he included in this list the mucin bodies. Dr. Smith said he had done considerable work in the chemistry of mucous conditions, and he was rather skeptical regarding the presence of these mucous-like bodies in the urine at all. In the literature he had only found one statement that anyone had succeeded in recognizing a substance as mucin in the urine. Dr. Smith's routine procedure in examining urines was to throw down any proteid material which might be a foreign substance, and then to apply cold nitric acid, looking for the contact test after adding to the urine one-fourth its volume of a saturated salt solution. If urates were present they would be recognized by their disappearance on heating in the contact test. He relied upon this more for the qualitative than for quantitative purposes.

Dr. HARLOW BROOKS said that he felt rather skeptical regarding the urinary findings. He believed that men were too careless in the examination of the urine. Where albumin should have been present he had often missed it through defective or careless technique. He said he was glad that Dr. Hastings had brought up this subject, and thought that all would appreciate it.

Dr. Hastings said that hematoporphyrin was a derivative of a proteid, formed by the breaking down of the blood pigment. If one went into a separation of all these bodies the task would be an endless one. With regard to the mucin bodies physiological chemists recognized the work being done and the difference between mucin bodies and nucleo bodies. Mucin contained no phosphorus. The use of nitric acid and saturated salt solution he considered one of the best tests.

Organic Heart Disease and Immunity from Phthisis Pulmonalis.—Dr. BOND STOW presented this paper. He said that whether organic heart disease did or did not grant immunity from phthisis pulmonalis depended upon the presence or absence of a coexisting long-standing passive hyperemia in the pulmonary circulation. In view of the anatomical relations of the heart and the lungs the heart seemed more intimately associated in a causal relation to certain diseases of the lungs than any other organ. Even a slight disturbance in the heart's action exerted a direct influence upon the pulmonary circulation. Long-standing circulatory disturbances left their indelible stamp upon the pulmonary tissues. Where there was a hindrance to the passage of blood into the pulmonary arteries we had pulmonary stenosis; quite a different state resulted when there was a free entrance into the pulmonary arteries with a retarded exit from the pulmonary veins through the left auricle as appertained in a well-marked case of mitral stenosis. These two conditions were diametrically opposed to each other, and statistics proved that the one just as surely predisposed to tuberculosis as that the other granted immunity. The question of immunity seemed to resolve itself into the amount of blood within the pulmonary tissues. At the present day, when autopsies were carefully performed, statistics showed that in 83.3 per cent. of those having stenosis of the pulmonary valve, tuberculosis of the lungs followed. What was true of pulmonary stenosis was almost as much so of that rare condition, tricuspid stenosis. He concluded as follows: 1. Organic valvular diseases of the right side of the heart that produced pulmonary anemia afforded conditions favorable for the ready growth of the tubercle bacillus, and were, as a fact, most frequently associated with phthisis pulmonalis. 2. Organic valvular diseases of the left side of the heart, when accompanied by well-marked secondary changes of hypertrophy and dilatation, producing long-standing passive hyperemia of the lungs, were very rarely followed by tuberculosis of the lungs and not infrequently effected an extinction of a previously existing tuberculosis. 3. The exceptional cases that did arise must be accounted for by certain qualitative and quantitative changes in the bactericidal properties of the blood reducing its immunizing powers. Nature clearly pointed the way to the treatment

of incipient tuberculosis in two instances, chronic emphysema and those valvular heart lesions that produced long-standing pulmonary congestion. In both these instances the autopsy frequently revealed quite extensive tuberculous processes that had become entirely extinct. On the other hand pathologists and clinicians agreed that tuberculosis rarely followed these two conditions. The underlying pathological condition produced by these two affections was a constant passive congestion of the lungs. This meant that there should be collected and kept in the lungs an increase of those agents of the blood that were antagonistic to the growth of bacterial life. This suggested in the treatment of incipient tuberculosis physical exercise in the open air several times a day, sufficient to produce heavy congestion of the lungs; not gentle walking or riding in a carriage, but running to the point that the congested lesser circulation interfered with the free action of the right ventricle and forced temporary rest. Naturally one must be governed by the conditions in each individual case as to the amount and character of the exercise prescribed. To this exercise should be added climatic conditions high in oxygen, and therefore comparatively free from green life and plenty of food, such as experience taught would best build up nature's defenses against microbial life, namely, the bactericidal properties of the blood. The dangers of overexertion in advanced cases were referred to and the risk that was assumed in incipient cases. He cited a number of cases, including gross and microscopical specimens of the same, illustrating the effect of organic heart disease upon the tuberculous process in the lungs.

Dr. Egbert Le Fevre took a positive exception to Dr. Stow's therapeutic deductions for the treatment of incipient tuberculosis, and said that his method of producing passive congestion of the lungs was radically different from Nature's way when there was an obstruction at the mitral orifice. In cases of incipient tuberculosis, when the patient exercised, there was a congestion of the lungs but *not* a passive congestion as occurred in organic mitral stenosis. In tuberculosis the nearer we came to physical rest of the part, the better the case would progress. Such exercises as advised by Dr. Stow were wrong.

Dr. C. N. B. Camac said that he had looked over the records at the Cornell dispensary and found that out of 6,000 general cases about 350 were tuberculous. In that lot of 350 there were no cases of mitral or aortic murmurs, but there were a number of cases in which a murmur was heard over the pulmonic area, mostly systolic. Occasionally a diastolic murmur would be heard, and he had seen three such cases associated with pulmonary congestion.

Dr. Alfred Meyer said that the relation of pulmonary tuberculosis to valvular lesions of the left side of the heart and the frequency of their coexistence had long been and still continued to be a moot question. He said that Dr. Stow had gathered some statistics, personal and otherwise, showing that they tended to exclude each other, and that the cardiac lesion under certain conditions even aided the reparative processes in a preexisting pulmonary tuberculosis. This in the main was the view advanced many years ago by Rokitansky. Other statistics, however, had been published which seemed to indicate a rather frequent coexistence of these two diseases, or at least to disprove the old view of their excluding each other. On one point there seemed to be general agreement: The frequent coexistence of pulmonary tuberculosis and stenosis of the pulmonary valve, as much as 80 per cent. of the latter disease showing tuberculous changes in the lungs. There was one point of diagnostic interest which should be referred to: How should an area of pulmonary dullness and bronchovesicular breathing be interpreted when occurring in a patient with mitral stenosis, or stenosis and insufficiency, if he had had hemoptysis? If one had the bacillary proof, well and good; but if one had not, there was in these cases always at least a possibility that the physical signs in the lung were due to pulmonary infarcts.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the City, for the week ending June 30, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	362	180
Diphtheria	242	30
Measles	440	12
Scarlet Fever	110	9
Smallpox	3	—
Varicella	59	—
Typhoid Fever	30	14
Whooping Cough	39	4
Cerebrospinal Meningitis	29	16
Malarial Fever	.....	.....
Totals	1,323	265

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending June 29, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	June 9–16	1	.
Florida, General	June 16–23	4	.
Jacksonville	June 16–23	2	.
Illinois, Galesburg	June 16–23	4	.
Kansas, Topeka	June 13–20	1	.
Kentucky, Covington	June 16–23	1	.
Louisiana, New Orleans	June 16–23	16	.
Missouri, St. Louis	June 16–23	1	.
New York, Findlay Lake	June 22	1	.
New York	June 16–23	4	.
North Carolina, Beaufort	June 22	2	.
Ohio, Cincinnati	June 15–22	3	.
Tennessee, Nashville	June 16–23	2	.
Wisconsin, Appleton	June 16–23	1	.
Milwaukee	June 16–23	2	.

SMALLPOX—INSULAR.

Philippine Islands, Manila	May 5–12	1	.

SMALLPOX—FOREIGN.

Africa, Cape Town	May 12–19	2	.
Brazil, Rio de Janeiro	May 13–27	3	.
Canada, Toronto	June 2–16	10	.
Winnipeg	June 9–16	1	.
Chile, Antofagasta	May 26	9	.
Iquique	May 12–19		Present.
Talcahuana, vicinity	May 19–26		Present.
China, Hongkong	May 12–19	2	1
Shanghai	May 19–26		1
France, Marseilles	May 1–31		1
Paris	May 26–June 2	6	.
Germany, Bremen	May 26–June 2		1
Great Britain, Hull	May 26–June 2	2	.
Liverpool	June 2–9	2	.
Greece, Athens	May 28–June 4		2
India, Bombay	May 22–29		5
Calcutta	May 12–19		44
Karachi	May 20–27	19	4
Madras	May 19–26		4
Rangoon	May 12–19		17
Italy, General	May 31–June 7	18	.
Messina	May 26–June 2		1
Netherlands, The, Groningen	Apr. 15–30	5	.
Russia, Moscow	May 26–June 2	4	2
Odessa	May 26–June 2	14	.
St. Petersburg	May 12–June 2	27	8
Spain, Cadiz	May 1–31		1
Turkey, Constantinople	June 3–10		1
Switzerland, Zurich	May 26–June 2	1	.

YELLOW FEVER—UNITED STATES.

Louisiana, Mississippi River Quarantine	June 23	1	Imported from Habana on S. S. *Holstein.*

YELLOW FEVER—FOREIGN.

Brazil, Rio de Janeiro	May 13–27	1	.
Honduras, Choloma	June 2–9		Present.
Puminta	June 2–9		Present.
San Pedro	June 2–9		Present.
Mexico, Merida	June 1–16	2	2

CHOLERA—INSULA

Philippine Islands, Manila	May 10–17	6	6

CHOLERA—FOREIGN.

India, Bombay	May 22–29		22
Calcutta	May 12–19		37
Rangoon	May 12–19		2

PLAGUE

Brazil, Rio de Janeiro	May 13–27	1	.
Chile, Tacna	May 26		Present.
China, Hongkong	May 12–19	90	83
Egypt, Alexandria	June 4–5	1	1
Keneh	June 2–7	6	4
Minich	June 1–7	4	4
India, General	May 5–12	13,207	11,414
Bombay	May 22–29		317
Calcutta	May 12–19		42
Karachi	May 20–27	101	96
Rangoon	May 16–19		40
Japan, Hiroshima-Ken	June 5		Present.
Kobe	June 5		Present.
Yokohama	June 5	1	On S. S. *Siberia.*
Peru, Mollendo	May 15–23	1	.

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Original Articles.

A NEW METHOD OF INCISION FOR REMOVAL OF THE BREAST.*

BY CARL BECK, M.D.,

NEW YORK.

PROFESSOR OF SURGERY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, VISITING SURGEON TO THE ST. MARK'S AND THE GERMAN POLIKLINIK.

EXTENSIVE removal of the mamma creates a large defect, which can be covered only by an additional plastic operation. Some surgeons prefer skin grafting and others allow the gap to fill up by granulation.

It is a common feature of all the valuable methods of amputatio mammæ that the operation is begun with an elliptical or oval incision around the breast. To this, as a rule, further incisions are added in different directions.

The general tendency is to cover the large wound produced by the extensive removal of mamma plus

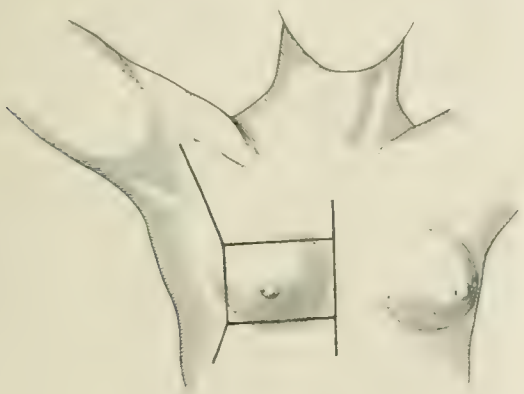

FIG. 1.—Lines of Incision.

surrounding tissue, by drawing in skin tissue from above and from the side. In the great majority of cases tension is caused by the more or less forcible apposition of the flaps. This is frequently followed by separation of the sutures as well as by irregular cicatrization, the latter itself being a provoking moment for early recurrence of a malignat neoplasm. Lateral elongation of the elliptical incision somewhat diminishes the tension. For that purpose I have devised the formation of a lateral flap, which has done me good service in a few cases (*Clinical Recorder*, October, 1896).

Below the mamma there is an abundance of integumental material. This fact, which might be utilized for covering a considerable defect, has, to my knowledge, not been appreciated—at least not in a methodical manner, although the idea is rather obvious.

In carrying out these considerations I began by giving my incision line around the breast the form of a rectangle (Fig. 1). The interior line of the rectangle is continued on both ends to the extent of about three inches. The same is done with the lower end of the external side, while the upper exterior end is extended along the outer margin of the pectoralis major muscle up to its humeral insertion.

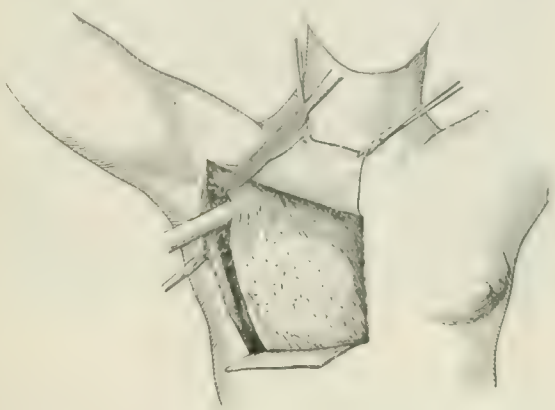

FIG. 2.—Flap reflected and pectoralis major muscle dissected up at its humeral insertion.

The axilla itself is not touched, in order to avoid cicatrization in the axilla, which is apt to produce edema brachii.

After the rectangle, including the whole breast, is excised the upper skin flap is formed and reflected. Thus the area of operation is fully exposed. Whether the fascia and the upper layer of the pectoralis major muscle only are removed, or whether, preferably, the radical operation is performed, the

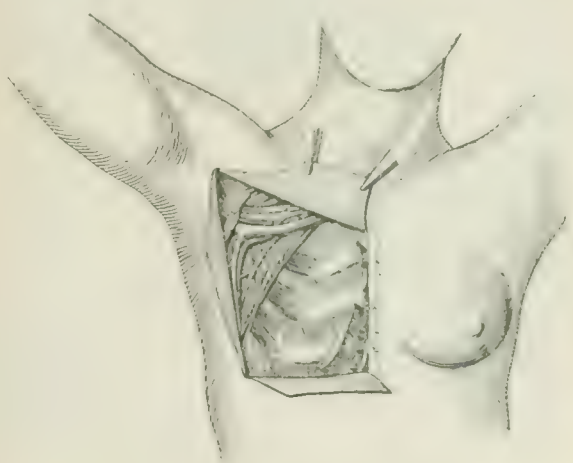

FIG. 3—Pectoralis major muscle removed and axillary vessels isolated.

principle of access remains the same. I do not dispute the propriety of the less radical method in selected cases, especially when the carcinoma is of recent origin and very small; but even in this event I would insist upon the complete removal of the outer margin of the pectoralis major muscle, be-

*Demonstrated before the New York German Medical Society, April 2, 1906.

cause it generally covers one or more infiltrated glands, from which lymphatics lead to the axilla. If they are overlooked a speedy recurrence may be expected.

In general I am in favor of the most radical procedures, especially as advocated by Halsted. They

Fig. 4.—Immediately after operation.

would be severing of the pectoralis major muscle from its clavicular and costal attachments as well as from its humeral insertion (Fig. 2), removing the pectoralis minor muscle, furthermore dissecting away the axillary contents, so that the vessels are completely isolated, also cleaning the posterior wall of the axilla after spreading out the tissues on the latissimus dorsi, subscapularis, and teres major muscles (Fig. 3).

Now the lower flap is lifted up and reflected. By gently drawing the upper flap downward and the lower flap upward one can feel, without tension, whether apposition can be attained. If there be any

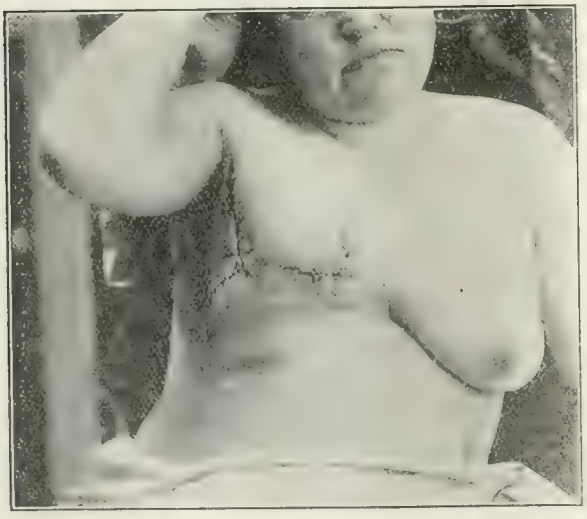

Fig. 5.—One week after operation.

tension, the lower flap is made longer by extending the incision line on both sides. The straight shape of the flaps greatly facilitates exact coaptation. (See Fig. 4.)

The wound margins are united by thin catgut. Both ends of the cross line are strengthened by the introduction of the marginal relaxation suture, consisting of silk. Into the upper end of the oblique incision line a small wick is inserted in order to drain the axilla for a day or two. As soon as the sutures are removed Roentgen treatment is begun.

The patient whom I present to-day is a woman of forty years, who had several attacks of rheumatism, and is now suffering from a slight insufficiency of the mitral valve. She is well nourished and appears to be well otherwise. Six months ago she noted an induration below her right nipple, to which she paid no attention, until her family physician insisted upon an operation. She submitted hesitatingly because she felt well and suffered no pain.

The radical operation, after the principles described, was carried out without any difficulty. The loss of blood was moderate. In spite of the vitium cordis the ether anesthesia was fair. Recovery was uninterrupted, the patient leaving the hospital two weeks after the operation. (See Figs. 4 and 5.)

To-day, six weeks afterward, the area of operation is completely movable, the cicatrices showing no adherence whatever. As far as the cosmetic result is concerned I dare say that it distinguishes itself favorably from any of my previous ones.

THE CONTAGIOUSNESS OF GUMMA.

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Of the many questions that arise in the practice of medicine, one of the most important, as well as the most difficult, concerns the contagiousness of the disease or of certain of its manifestations—the danger to the community arising from the presence in it of the invalid. How soon, for instance, is it safe to raise the quarantine from a case of diphtheria? Must one wait till the diphtheria bacilli no longer appear in the secretions? Again, how real is the danger of contagion in pneumonia? When do the exanthemata first become dangerous and when does the danger cease? And from which of their lesions is infection to be feared? Leprosy has been a riddle for years, and though we believe that the organism causing it has been found, can we say how it is carried? So in syphilis, though the infecting power of certain of its products is established, with regard to others we are still uncertain, and it is the purpose of this paper to collect and to discuss the evidence for and against the contagiousness of a single lesion, the gumma. The proper presentation of the case, however, will involve reference to many closely allied issues, such as the duration of the period of contagion by secondary symptoms, and the duration of the possibility of transmission by inheritance.

Considering the known virulence of the primary lesion and of many of the secondary, it would be reasonable to expect later and even severer manifestations to be equally contagious. Experience has shown, however, that the vast majority of cases owe their origin to sufferers in the early stages, and that repeated exposures to tertiary lesions have not been followed by infection. Hence arose the generalization that tertiary lesions are not contagious. But is not this generalization founded on insufficient data? Exposure to a tertiary lesion does not always result in infection, it is true, but this does not prove that such lesions are incapable of propagating the disease; for exposure even to the virulent primary and secondary manifestations is often without result. Think for a moment of the enormous number of

secondary lesions of the skin and of the mouth, all capable of transmitting the disease, and of the comparative rarity of infection from these lesions, for the percentage of cases of such origin is certainly not greater than that of extra-genital chancre, which is estimated by Fournier[25] at 7 to 10 per cent. If the innumerable virulent extra-genital secondary manifestations produce so few new cases, is it any wonder that the admittedly less active tertiary lesions produce still fewer? There are many instances recorded in medical literature of escape from almost certain infection. For instance Fournier[22] reports that he noted repeatedly that when several men had intercourse with one woman at the same time, some were infected by her, and others escaped. He quotes Pouch as having seen a case where a man contracted syphilis while his wife was "en couche," and before the chancre was healed had intercourse with her nearly every day—yet the wife was not infected. Barthelemy, again, reports the case of an infant, the child of healthy parents, who for a month suckled a breast on which was a typical chancre, which later was followed by secondaries—yet the child remained well. We must confess then that the records of exposure to tertiary manifestations, without infection resulting, are of little or no weight in deciding the question before us.

Some explanation is necessary, however, of the extreme rarity of records of such transmissions. I say records, because the idea of the non-contagious nature of gummata is so firmly established in the minds of the profession that cases in conflict with it are never looked for, and when they force themselves into view they are often dismissed with the mental comment that the infection must have come from some other unknown source, the physician preferring to invoke chance or marital infidelity rather than give up his theory. But, after making all allowance for these omissions, the cases probably are very scarce, and for several reasons.

In the first place, tertiary lesions are much rarer than secondary. Out of 11,639 patients suffering from syphilis in Neumann's[46] clinic, at Vienna, only 520, less than 4½ per cent., had tertiary lesions; and when we consider that tertiary lesions are often single, while secondary lesions are usually multiple, the difference in frequency of occurrence of the two types must be many times greater than the above figures indicate. Some other authors give higher percentages of tertiary patients, but I think it is never estimated at more than 18 per cent. of the total number of syphilitics, and 8 to 12 per cent. is a more common figure.

The site of tertiary lesions also is not generally favorable to the spread of the disease. In spite of the wide distribution of secondary symptoms on various parts of the body, and their known virulence, they seldom lead to contagion, except when situated on the genitals, which seem to furnish the conditions most favorable to infection. This favorable region, so often, if not universally, involved in the early periods, is much less often the seat of tertiary lesions. So in Neumann's[46] clinic of 277 men with tertiary syphilis, only one had any eruption on the genitals—a gumma of the penis; only one out of 5,702 males with syphilis. In women the involvement of the genitals in tertiary syphilis was much greater, yet even here, out of 243, only 37 had gummatous affections of the genitals, anus, rectum, or urethra—only 37 out of 5,991 syphilitic women. Of the whole 520, men and women, in only 38, about 7.3 per cent., were there lesions on the genitals. Fournier's[25] statistics of 4,400 patients showing 5,762 tertiary lesions contain only 271 instances (about 6.1 per cent.) of involvement of the genitals. These figures give one a vary fair idea of the rarity of such localization, in comparison with the total number of syphilitic subjects. Now, most of the instances of transmission of syphilis late in the disease have occurred in married life, and usually it is the man who is the source of the infection, and as the above figures show, it is the man who is the least likely to have lesions on his genitals. A woman who has had syphilis for several years is not so apt to have the opportunity to communicate her disease—and especially in marriage, where confrontation may best be obtained, and where other sources of infection may most surely be excluded.

A third factor which is apt to interfere with the opportunity for contagion from a gumma is the gross appearance of the latter. It is a deformity sufficiently obvious to be noticed by almost anyone, its appearance is menacing, and it usuall drives its victim to medical treatment, while a small eroded papule of the glans or of the sulcus is such an apparently insignificant affair that it may be, and indeed often is, entirely overlooked.

A fourth factor is the age at which tertiary lesions appear. Primary syphilis is essentially a disease of youth, and after the twenty-fourth year the chances of contagion—and also of infecting others—grow steadily less.[26] The interval of two or more years after which the gumma follows the chancre, will usually mean a greatly diminished number of occasions for contaminating others.

The considerable lapse of time between the original infection and the appearance of tertiary lesions is often invoked to explain the apparent lack of contagiousness of the latter, and it is the common belief at the present time that, with the passing of the years, the virus becomes more and more feeble, and finally dies out of the system. Doubtless this is true in many, even in most cases, especially when thoroughly treated. In a patient who shows no symptoms, secondary, tertiary or parasyphilitic, from the second or third year of his disease up to his death from some other cause, it may safely be assumed that the taint has been extinguished. But it is hard to see why the doctrine of the attenuation of the virus should be extended from such cases to those others in whom typical secondary symptoms appear five, ten, twenty, even thirty years after the infection. It seems to me utterly unreasonable to state that because the contagion has lost its virulence in a case that is cured, either by treatment or by the *vis medicatrix naturæ* (which is only a more accurate way of saying by the lapse of time), therefore it has lost its virulence in a case which still shows characteristic symptoms. The occurrence of these symptoms many years after the infection is an established fact. Fournier[25] states that out of 19,000 cases of syphilis in 1906, over 5 per cent., symptoms of secondary type were seen after the third year, and in 501 after the sixth year. These instances of late recurrence,[1 24 36 48 59] though somewhat rare, are more common than is generally supposed, and they are just as dangerous in the tenth year after the infection as in the second. Thus Fournier says: "Now are they contagious, in spite of their appearance at a period more or less beyond the ordinary limits of the secondary period? Most assuredly yes, or at least they may be so." Neumann[45] states that contagiousness lasts as long as the secondary symptoms. Neisser[42] is only a little less explicit; he says: "Is a syphilitic with tertiary lesions to be considered infectious or not? Only the duration of the disease and the energy and frequency of treatment are guides; except in the case of late secondary

symptoms"—thus agreeing that the latter are always contagious. Feulard[13] reported at the Third International Congress of Dermatology at London, 1896, 18 cases of contagion from late secondary lesions, at periods ranging from the fifth to the eighteenth year of the disease, and Tarassevitch[56] has added 27 to the number. Many others have been reported since, of which the following may be taken as examples:

Case I.—Reported by Jacob Halpern (*Archiv für Dermatologie und Syphilis,* 1894. Vol. 28, p. 67).

A man 35 years old developed a chancre of the penis, which was not followed by any secondary eruption; but three months later his wife had general syphilis. He had had intercourse also with another woman, Mrs. Y., 33 years old, who had been married ten years. Three years after her marriage Mrs. Y. had borne a full term child, who died soon. In the sixth and again in the seventh year of her marriage she bore a child, who in its third week developed an eruption that was cured by gray salve. The younger child died at 2 years of age of convulsions; the older is anemic, but otherwise well. Mrs. Y. has a papular syphilide on the right scapular region, and recurrent mucous papules on the portio vaginalis uteri.

Case II.—Reported by Filarétopuolo (*La Médecine Orientale,* Paris, 1900, p. 121).

The patient, a hard smoker and drinker, was treated at intervals in the fourth year of his disease for relapsing erosions of the lips. He then had no symptoms for a long time and married with the permission of Filarétopoulo. Four months after marriage he showed the same erosions as before his marriage, and his wife had a papular exanthem of characteristic color, glandular swelling, and persistent headaches.

Case III.—Reported by Senger (*Dermatologische Zeitschrift,* 1893-94, Vol. 1, p. 392).

A man 35 years old acquired syphilis (chancre and secondary symptoms) seven years ago and was treated with courses of inunctions and with iodide of potash. He is married and has three healthy children. A few months ago he had a herpes-like eruption on his penis, which healed quickly without treatment. His wife now has condylomata lata and mucous patches. No trace of a chancre could be discovered by careful examination nor by questioning. Sanger convinced himself that there was no extramarital infection; the patients had been known to him for years. The husband had extramarital intercourse once, one and three-quarters years before, but not since.

Case IV.—Reported by Pelizzari (*Riforma Medica,* 1892, part 3, p. 558).

A man acquired syphilis in 1883, and was treated regularly, on account of relapsing secondary symptoms for one year. After that there were occasional relapses, always yielding to treatment, until 1886, when he married. In 1890 he had an attack of influenza, followed by a palmar psoriasis, which yielded readily to specific treatment. In 1891 he had a healthy child. In December, 1891, he had a severe attack of influenza, and in January, 1892, he developed an eruption like that of a recent syphilis in the balanopreputial sulcus. Sexual intercourse was forbidden, but he had connection with his wife between the thighs, and in March, 1892, she showed a healing chancre between the buttocks, and later she developed secondary symptoms.

Case V.—Reported by Filarétopuolo (*La Médecine Orientale,* Paris, 1900, p. 121).

A man had a chancre ten years ago and was treated; he had no symptoms for nine years. Two years ago he had difficulty in chewing, and examination now shows a sclerous plaque at the base of the tongue, with fissures on it, and enlarged papilæ, certainly a tertiary specific glossitis. At the tip of the tongue is a superficial opaline erosion. He has been married six months, and his wife now shows abundant falling of the hair, enlarged glands, and small mucous patches of the pharynx.

Case VI.—Reported by Bovero (*Gazzetta Medica di Torino,* Oct. 27, 1898, p. 841).

A man contracted syphilis in 1888, and in the course of his treatment took 69 mercurial inunctions, and 10.0 g. of iodide of potassium. From 1890 till the date of observation he had no syphilitic symptoms on the skin or mucous membranes. He has a healthy baby, one year old, now with a wet-nurse, and the nurse is healthy * * * On July 8, 1898, he showed a rhagadiform mucous tubercle on the mucous membrane of the left cheek posteriorly, and another the size of a centesimo on the mucous membrane of the upper lip in the middle line. These developed without apparent cause about June 20. He had also a leucokeratosis of triangular shape with the apex forward, on the mucous membrane at the right labial commissure. His wife, seen the next day, had a characteristic chancre on the upper lip in the middle line, dating from June 10. She had enlarged glands, and later developed roseola and mucous patches.

Case VII.—Reported by A. Fournier and Hersher (*Annales de Dermatologie et de Syphiligraphie,* 1900, p. 250.)

A woman 34 years old showed a general maculopapular syphilide, the remains of a chancre on the left labium majus, and enlarged glands in the left inguinal region. She was married, but separated from her husband for three years, and for that period was living with a man who alone could contaminate her genitally. This man contracted syphilis in 1887, thirteen years before, as shown by the records of the hospital. He took pills for six weeks and the iodide of potassium for a year. When examined he had cicatrizing ulcerations on his penis, which had developed about the period of the contagion, two and a half months before.

Case VIII.—Reported by K. Gron ("Studier over gummos syphilis, etc." Christiania, 1897, p. 20).

A woman, married in 1889, bore a healthy child who never showed any sign of syphilis, though repeatedly examined by the reporter. The mother had no specific eruption of the trunk, genitals, or extremities, no loss of hair, adenopathy, no leucoderma, until 1892, when, being about four months pregnant, she was examined by Gron, who found a scaling papular syphilid, the diagnosis being established later by Boeck. She received a moderate treatment with the iodide of potash, without much effect, and a little later there was swelling of the genitals with the formation of mucous tubercles. When she had taken 50.0 g. of potassium iodide the eruption ceased and after taking 96.0 g. the treatment was stopped. In July, 1892, she was delivered of a boy, apparently born about 2-3 weeks too soon, but otherwise normal, and who neither then nor at any other time showed any sign of syphilis. The mother had sporadic papular eruptions, never general, for about six months after parturition. In November, 1894, she had on the inside of the left leg a nodule, sensitive to pressure, with a bluish red discoloration over it; this disappeared under iodide of potassium. She had no eruption after that. During the winter of '96-'97 she was pregnant and was treated with protoiodide. The child has been and is now (6 months old), free from all signs of hereditary syphilis. The husband went through a very malignant syphilis

12 years before his marriage—16 years before the eruption appeared on his wife.

Case IX.—Reported by Gron (*loc. cit.*, p. 17).

A woman, 37 years of age, married 10 years, had a pea-sized ulcer covered with a grayish membrane, on the outer lip of the portio vaginalis. About two months later she developed a characteristic papular syphilide and mucous patches on the genitals. She had been healthy before marriage, but sickly since, and often had headaches, but no eruption and no sores on the throat or on the genitals. She had had three children—the first was born dead eleven years before; the second, born healthy ten years ago, died at 5 years of cardiac paralysis following diphtheria of the throat; and the third, born healthy eight years before, died at 2 years of age of tuberculous meningitis. Her husband had been treated twenty years before for syphilis—chancre and eruption. Except for some brown spots on his back three years before, which disappeared spontaneously, and were hardly of a specific nature, he had no marked eruption on the skin or mucous membranes, except that five or six months before his wife was first seen, he had an exuding abrasion on the glans and on the inside of the prepuce, following the rubbing of a woolen jacket. There was no ulceration, and it healed after being present for fourteen days. With the exception of a slight swelling of the inguinal glands, nothing abnormal was found on his body, the genitals, especially, being completely healthy.

Case X.—Reported by Brouardel ("Le Mariage, nullité, divorce, grossesse, accouchement," Paris, 1900, p. 48).

A patient, treated for syphilis at the time of the Coup d'Etat of December 2, was exiled by the empire and did not return to France until the amnesty. Having had no symptoms for at least six years, he consulted Dr. Martin-Magron, who had treated him before, and asked if he might marry. Receiving an affirmative answer, he married and had four healthy children. When his wife became pregnant for the fifth time he discovered on his penis a small papule, which, occupying the site of the initial lesion, aroused his suspicions. A physician who examined him, and to whom he told his history, called it herpes. This physician was wrong; the so-called herpes was a virulent recurrence of the chancre (*recidive sur place*), taking place twenty-four years after the original infection, and the beginning pregnancy was ended by the birth of an infant with manifest signs of hereditary syphilis.

By inheritance also the virus may be transmitted very late in the disease, especially by the mother, even in the absence of any visible manifestations, as happened in the following cases:

Case XI.—Reported by Drennen (*Memphis Medical Monthly*, 1897, p. 27).

A man acquired syphilis seven years before his marriage to a healthy woman. The first child, born a year later, had hereditary syphilis; became hemiplegic at three years of age, and never recovered. The second child, born three years after marriage, was healthy. Then came two abortions, and a third child, born six years after marriage, who had a syphilitic rash, snuffles and mucous patches. Six weeks after the birth of the last child the mother developed a macular rash all over the body, enlarged glands, sore throat, etc.

Case XII.—Personal communication from Dr. Richard Kalish. A man contracted syphilis when about twenty years of age, and was treated for about three months, after which he declined further treatment. Three years later, having no symptoms, he married, and his wife bore two healthy children. The third child, born five and one-half years after marriage, showed undoubted signs of hereditary syphilis, viz., oral and anal excoriations, snuffles, and a cutaneous syphilide covering almost the entire body. The child improved from the beginning of treatment, which was gray powder by the mouth and inunctions of cod-liver oil, but later died from what the physician in attendance called marasmus. During all this time neither father nor mother showed any sign of syphilis whatsoever, and subsequently two children were born perfectly healthy. All four are now living, and no hereditary taint has ever been disclosed in any of them. The patients are well known to Dr. Kalish, and he could find no reason to suspect marital infidelity on either side.

Case XIII.—Reported by Rabl (*Archiv für Dermatologie und Syphilis*, 1889, Vol. 21, p. 421). A man nine years syhpilitic, and married seven and a half years, had three healthy children. The fourth child was born syphilitic, with mucous patches on the mouth and anus, and a pustular syphilide.

Case XIV.—Observed by Dr. J. Clarence Sharp, in April, 1903, and communicated by him to the author.

Mrs. X. contracted syphilis ten years ago. Her hair fell out at that time, and she had sore throat, off and on, for several years. In 1900 she had what she thought was chills and fever; this left her with some kind of inflammation of the nose, which has been treated off and on ever since. When Dr. Sharp saw her she had pain over the bridge of the nose, nasal discharge, large ulceration on the right side of the septum and a small ulceration on the left side. Her tibiæ were very tender and she had afternoon headaches. She had been married about four years and has never been pregnant. She was put on large doses of the iodide of potash and began to improve at once. She became pregnant and in December, 1903, she was delivered of a fetus of about eight and one-half months, weighing six and one-half pounds. The baby had the old look, a macular eruption over the body, falling out of the eyelashes, and a mucopurulent discharge from the nose. The child was put on inunctions, and improved.

Case XV.—Reported by Lassar (Third International Congress of Dermatology, London, 1896, p. 457). A girl of seventeen was infected by a kiss, and was treated and apparently cured; she married eleven years later and bore a syphilitic child, though no trace of syphilis could be found in her husband.

Case XVI.—Reported by Lassar (*Dermatologische Zeitschrift*, August, 1900, p. 740). A woman acquired syphilis in her first marriage, and was treated under Lassar's direction, with apparently good results. About seventeen years later she took for a second husband a man who had never had syphilis, and who was not infected by her. The first pregnancy went to term normally, but three weeks later the child showed all the symptoms of hereditary syphilis.

Of course the effect of parental syphilis upon the progeny usually diminishes steadily with time, but on the other hand there are recorded many cases like the above where children inherit syphilis from a parent who acquired the disease many years before.

Fournier's[25] statistics of 4,400 cases of tertiary syphilis show that the third year furnishes more cases than any other, that over a third of them occur in the first four years of the disease, and nearly half in the first six years, beyond which time they become much less common. Ehler's[11] statistics of 1501 cases correspond very closely with these figures, but place the onset even earlier, more cases being observed in the second than in any other one year.

If we admit, then, as I think we must, that syphilis may be transmitted many years after the infection by lesions of secondary type,, and by inheritance, and that tertiary symptoms are most frequent in the first few years of the disease, we are forced to admit that the lapse of time since the infection is not by itself a valid argument against the infectiousness of gummata.

It may be objected that in any given case the tertiary lesions follow the secondary, and that the fact that tertiary lesions are present is proof that the disease has lost its contagiousness. This objection is at once overruled by the fact that tertiary and secondary lesions are often known to coexist in the same patient.[12]

If, then, instances of infection from late secondary lesions are fairly common, while infection from a gumma is very rare, the explanation must lie, not in the duration of the disease, but in the character of the lesion. The typical infectious secondary symptoms are the eroded papule and the mucous patch. Both are very superficial, show no extensive degenerative process, and lose their epithelial covering, leaving the deeper parts of the lesion exposed, while they are still in active evolution. The gumma, on the other hand, is a deeper process, and becomes an open sore only after necrosis or caseous degeneration has destroyed not only the epithelium covering it, but presumably also the infectious agent as well. Infection can only be expected when favorable conditions bring about the exposure of the deeper, progressive, active parts of the new growth, as we shall see later, when discussing experimental inoculation.

It is possible, also, that the contagion exists here in much less active form than in the earlier lesions; and we know enough already of the great variations in the virulence of pathogenic organisms to make the possession of the same property by the organism of syphilis seem reasonable. The bacillus of diphtheria is a common example of such variation. Neumann[46] explains in this way the general innocuousness and the occasional contagiousness of gumma. He advances the theory that in the tertiary stage the organism of syphilis, while able to produce symptoms in the victim, is not usually strong enough to carry contagion, but that occasionally some causes not yet understood may stimulate it to all its old virulence.

While the foregoing facts and arguments answer some of the objections urged against the contagiousness of gummata, and explain the rarity of examples of it, they have no value as positive evidence. For this we must turn to clinical observation and to experiment. The perfect clinical demonstration of contagion from a gumma is yet to be recorded; in every instance that I have been able to discover, there is at least one gap in the testimony, and it is not likely that clinical observation alone will ever bring the question to mathematical proof The captious critic can always doubt the integrity of the infected person; and, further, he may claim that what was called a gumma was really a chancre, an instance of reinfection. In ordinary life it is often impossible to be absolutely certain on these two points, but when the balance of evidence points strongly to the accuracy of the report we are bound to give it due consideration, especially if supported by similar and independent occurrences. To quote Feulard, "The smiling scepticism, which was all too long the fashion where syphilis was concerned, and which finds it simpler to doubt the morality of a patient than to seek another explanation for facts which contradict received ideas, is no longer held in honor."

Aside from the 45 observations brought together by Feulard and by Tarassevitch, and the sixteen recorded above, of transmission of syphilis by late secondary lesions and by obscure and undetermined means, I have collected the reports of 25 cases bearing on my subject. Six of them are given by Tarassevitch as examples of tertiary contagion; the remaining 19 are from the most various sources. Some are recorded with such evident care and attention to detail that they are most convincing, while others are so fragmentary that by themselves they are of no value.

Cases in which the infecting lesion is not mentioned:

Case XVII. — Reported by Josef von Broick ("Ueber extragenitale Initialsklerosen," Inaugural dissertation, Bonn, 1888; Abstracted in *Archiv für Dermatologie und Syphilis,* 1889, Vol. 21, p. 883).

A toothless old woman, with gummata of the skin of the leg, suckled the milk from a woman's breast. The woman developed a chancre of the breast, followed by secondary symptoms, and in turn infected her husband, either by kissing or by the common use of a fork, spoon, or similar article.

Case XVIII.—Communicated by Goldzieher and Saenger to Delbanco, and published by the last in the *Monatshefte für praktische Dermatologie,* June 14, 1904, p. 591.

A merchant 32 years old had a tubercular syphilide on the right leg shortly after his return from his wedding trip. Nine years before he had had a peculiar red spot on the thigh, about whose nature two physicians, whom he had consulted, were not sure, but which was soon followed by general swelling of the glands, especially of the neck. Specific treatment was instituted, in which he took much iodine, but only a few inunctions. There were no other manifestations, except fainting spells about three months before his marriage. A few weeks after his marriage, his wife had a general maculopapular eruption which relapsed frequently. Within six months, the husband developed syphilis of the spinal cord, which took the form of acute transverse myelitis, and which was cured entirely by mixed treatment. Delbanco declares that both the patients were well known to him, and that he has no doubt that it was a case of infection in the gummatous period.

Case XIX.—Reported by Jacob Halpern (*Archiv für Dermatologie und Syphilis,* 1894, Vol. 28, p. 67).

A man, 32 years old, had a chancre 14 years before his marriage. Seven months after his marriage he had a serpiginous ulcerating syphilide of the right thigh. Ten months after the marriage, a full-term apparently healthy child was born, who died of convulsions in its sixth month. Nineteen months after marriage, the wife showed an already partially cicatrizing cutaneous gumma of the right lumbar region. She came of a healthy family who showed no trace of syphilis, and she had never before noticed any symptoms referable to that disease.

Cases in which no infecting lesion could be found, and in which the semen must be suspected:

Case XX.—Reported by Biron (*Medycyna,* Jan., 1896, Vol. 31, p. 25).

A man contracted syphilis in 1878; it ran a mild course, and was treated systematically for three years. There were no more symptoms, and in 1889 he married, after getting the consent of two physicians who examined him and found nothing wrong. Two months after being married his wife developed a papular eruption, which increased in the number and the size of the lesions until Biron saw her three months later—five months after her marriage. At that time she had a gereral lenticulopapular erup-

tion, with mucous patches on the mouth, pharynx, rectum and pudenda. Only the cervical glands were much enlarged, and Biron could find no initial lesion. She was not pregnant. The husband showed only a slight hardness of the right epididymis (the remains of an old gonorrheal epididymitis), unequal pupils and dizziness. The last two symptoms disappeared under mixed treatment. Biron says he convinced himself that the woman was infected by her husband soon after marriage, the symptoms appearing two months after that date; and that extrasexual infection could be excluded by the fact that all the people around her were well. He expresses the belief that the infection was by means of the semen, and urges the fact that by analogy it is reasonable to suppose that the semen may contain the contagium, though the testes be normal, just as the urine may contain tubercle bacilli, though the kidneys be normal.

Case XXI.—Reported by Kromayer (*Dermatologische Zeitschrift*, 1897, Vol. 4, p. 708).

A man contracted syphilis in 1867, for which he took several courses of inunctions. Early in the seventies, he had dry patches on both palms, which disappeared under a course of inunctions toward the end of that decade, only to return a few years later to persist until the present time (1897). About the middle of the seventies he married, and his wife bore him three healthy children, the youngest 8 years old, with no abortions or premature births. His wife had a recent syphilis when Kronmayer saw her, psoriasis palmæ, condylomata lata and a papular exanthem, following swelling of the inguinal glands. Kromayer first thought of extramarital infection, but convinced himself that his suspicion was unfounded. The man stated that about the time of the supposed infection, four months before, he tore his rather narrow and rigid prepuce in coitus (which was practised rather seldom) so that it bled a little. Examination of the man showed only the eruption on the palms, and the somewhat narrow, thick and rigid prepuce.

It will be convenient to discuss these five cases together, for although three of them showed tertiary lesions, it is very improbable that these were the source of contagion. In the first of the group it is fair to assume that the old woman had sores of some kind in her mouth, as well as gummata of the leg. The remaining four are much less easy to explain. Extramarital infection was thought of, and excluded, as far as this is possible, in all of them. The possibility of an unnoticed extragenital chancre must be considered in all of them. But the onset of the symptoms soon after exposure to a man known to have had the disease, in cases 18 and 20, and the particular involvement of the inguinal glands in Kromayer's case, point strongly to sexual contamination. Even in the absence of any visible lesion at the time of the examination there are five ways in which the poison might have been conveyed: by the blood, by the secretion of an erosion on the penis, or by that of a herpetic vesicle, either of which might easily escape the notice of the patient, and heal before the examination by the physician; by the secretion of a mucous patch within the urethra, and by the semen. Infection by the blood can probably be excluded; at the best it is not proven in such old cases, and other explanations are simpler. Infection from a transitory erosion or from a herpetic vesicle is quite possible, and could be excluded only by the most careful examination; examples of both have been given above, and others are included in Feulard's statistics. In this connection Mauriac[88] says: "I have seen syphilis transferred nine years after marriage by a simple erosion of the scrotum. It is my opinion that it is not only clearly syphilitic lesions that may infect, but any common erosion occurring in a syphilitic; and in this respect herpes is in the first rank." In this connection the following report by Fleugel[21] is of interest: A man of 29 years of age, in full secondary eruption, had on the under surface of his penis and on his scrotum several pea-sized mollusca contagiosa, whose contents were partially suppurated. In this pus two specimens of *Spirochæta pallida* were found. Infection from a mucous patch within the urethra may be the true explanation, not only of these cases, but of almost every other case of genital contamination as well, and it would be very hard to exclude it. Infection by the semen is not generally considered possible; but there is some evidence for the opinion that the finished product at least is capable of transmitting the disease. Finger[18] has reported the successful inoculation of a monkey with the semen of a man who had had syphilis for three or four months, and whose eruption was just receding. It must be remembered in this connection that Neisser[48] found that of all the internal organs of syphilitic monkeys, it was the testicle whose inoculation was most surely followed by the development of a chancre. This possibility of infection by semen, or by semen mixed with the secretion of a urethral mucous patch, must be remembered in discussing all the cases of genital infection, and it adds greatly to the difficulty of the subject.

Cases of infection from a gumma of the penis:

Case XXII.—Reported by Landouzy (First International Congress of Dermatology, Paris, 1889, p. 713).

A man about 50, who, when about 30 years old, had been treated by Ricord for an infecting chancre of the penis, presented himself to Dr. Landouzy with a serpiginous suppurating ulcer between the glans penis and the prepuce, which was diagnosed as syphilitic gumma, and the diagnosis confirmed the same day by Professor Fournier. It is not stated whether the gumma developed on the site of the old chancre. There was no other lesion than this gumma, which was about the size of an almond. The patient said that it had appeared slowly, increasing progressively after frequent and ardent sexual intercourse with his young wife. The wife was examined by Landouzy 48 hours after the husband, and showed groups of enlarged but painless lymphatic glands in the neck and in the groins, especially developed in the right groin; and a superb almost general roseola. No mucous patches were to be found, and although there was a small superficial right vulvar erosion, Landouzy could not make certain of the initial lesion. The woman said she had had a small papule on the right labium majus, but neither the site, size, date of appearance, nor nature of this papule could be established. Several months later, in spite of treatment with iodine, she had mucous patches on the tongue, throat, vulva, and anus. The gumma of the penis healed rapidly under treatment, and no other symptoms appeared. The duration of the syphilis at the time of transmission was about twenty years.

Case XXIII.—Reported by Ehlers (Vierter Kongress der Deutschen Dermatologischen Gesellschaft, Breslau, 1894, p. 309).

I give the report verbatim: "Three years ago I saw a man, married two years after the infection, having been treated only once with mercury; his wife remained well and bore two healthy children. When the man came to me for treatment, eight years after the infection, and six years after his marriage,

he had a gummatous ulceration on his penis" (it is not stated whether this was at the site of the old chancre), "which healed quickly under treatment with mercury and the iodide of potassium. But two months later his wife came to me for treatment—surely infected by the husband—with a universal papular syphilide, and the third child was born syphilitic. If the gummatous ulceration of the penis is not contagious, I cannot explain this case in any way, for it was not a reinfection in the man; no secondaries followed, and six months later he came to me with gummatous orchitis."

Case XXIV.—Recorded in 1875, by Fournier, and communicated by him to Feulard, and reported by the latter (Third International Congress of Dermatology, London, 1896, p. 478).

Mr. and Mrs. X. consulted Professor Fournier June 21, 1875. They were strangers, and had just taken a course of sulphur waters in France. This treatment was recommended by the physician of their country for Mrs. X., who in the preceding March had all the symptoms of a syphilitic infection, and at the time of her visit to Fournier she still had patches on the tonsils. According to her own physician, her syphilis had certainly been given her by her husband. Mr. X. had syphilis in 1861; he was treated at Aix-la-Chapelle, and for thirteen years had no symptoms; in August, 1874, he had on his penis an ulcer which was considered a new chancre, which left a scar, and which was believed by Fournier to have been a tertiary syphilide. This ulcer, which reopened from time to time, was open in February, 1875, when Mr. X. had connection with his wife. It was not followed by any secondary symptoms, and at the time of his visit to Fournier Mr. X. had a slight facial hemiplegia.

Case XXV.—Reported by A. Sack (Verhandlungen der Gesellschaft Deutscher Naturforscher und Aerzte, Hamburg, 1901, Part 2, p. 424).

A newly-married man who had had a mild and imperfectly treated syphilis about ten years before, developed a gummatous ulcer on the frenulum, at the site of the original chancre. Reinfection was excluded by the clinical form and course of the ulcer, and by the result of treatment; it was a tubercular ulcerating syphilide, followed by no involvement of the glands, skin or mucous membrane, and it healed in three weeks under large doses of the iodide of potassium given internally and weak bichloride dressings locally. The wife, scarcely six weeks married, became pregnant and developed on the corresponding site—the posterior commissure—a well-marked chancre, with enlarged inguinal glands, followed by a general syphilitic eruption, anemia, headache, and general adenitis. At the sixth month, in spite of energetic treatment by mercurial inunctions, she aborted, the fetus being dead.

Case XXVI.—Reported by Delbanco on March 17, 1903, before the Biological Section of the "Hamburger Aerztliche Verein" (published in the *Muenchener medizinische Wochenschrift*, No. 16, 1903, and more fully in the *Monatshefte für praktishe Dermatologie*, June 15, 1904, p. 586).

A man 48 years old, who fourteen years before had been treated by a course of inunctions in a Hamburg hospital for chancre, presented a crateriform ulcer at the corona glandis, close before the opening of the urethra, involving also part of the glans. It was about the size of a five-pfennig piece, with an uneven base covered with pus, and with thick infiltrated and raised border. A second ulcer, about the size of a two-mark piece, otherwise like the first, occupied the fold between the penis and the scrotum. The patient thought the chancre had been near the frenulum, but did not remember exactly. Careful examination of the patient showed nothing else abnormal—whether of skin, mucous membrane, lymphatic glands, or internal organs. He was a hard drinker, and of loose sexual habits. He had returned from a business journey with the ulcer on his penis, but in spite of it had sexual intercourse with his wife. Shortly after the wife had severe headaches, and a very general syphilitic eruption. Delbanco found her—a woman 50 years old, living in a second marriage—suffering from a general roseola, papules on the vagina, anus, and tonsils, enlarged glands, severe anemia, and rheumatic pains, increasing at night. A very careful examination failed to reveal any trace of a chancre, whether genital or extragenital, except a slight edema of the left lesser lip. The woman stated, however, that her husband had attempted coitus in anum—though whether the act was completed is uncertain—and that before the outbreak of the eruption she had had severe pains in the anus. Although she did not live happily with her husband, she gave her word of honor that she had had sexual intercourse with no one else.

There are certain objections common to all these cases; there are always the possibilities that the woman was unfaithful, that the so-called gumma was in reality a chancre, an instance of reinfection, and that the semen, a urethral mucous patch or a transitory secondary lesion of the penis may have been the source of infection. In answer to the first two objections, we can only appeal to the discernment and the skill of the reporter; he may have been deceived, but if he is a man of wide experience and acknowledged ability, he must be listened to. The last objection is as yet unanswerable. If the semen is sometimes infectious, if mucous patches may exist within the urethra, it may well be that one of these conditions was present in each case where a gumma seemed to be contagious. Further observation and experiment are necessary to settle the question. There are other weak spots in nearly all the cases, for in only one was the site of the chancre discovered; the rest may have been cases of extragenital infection, from some unknown source, the chancre healing unnoticed. Nevertheless the outbreak in the woman closely following the outbreak in the man is exceedingly suggestive, especially in those cases where the man and woman had lived together for years before, in apparent health. Delbanco's case suggests the possibility that the husband had intercourse with a syphilitic woman and carried the virus from her to his wife, being of course immune himself. Such cases have been reported, but they must be very rare, for Salmon[52] and Neisser[43] both found that the organism loses its virulence very quickly, often in six hours, and this even when kept moist. Sack's case is about the most complete of any, but even here the objections first mentioned cannot be entirely avoided.

Cases of infection from a gumma elsewhere than on the penis:

Case XXVII.—Reported by Lassar (*Dermatologische Zeitschrift*, August, 1900, p. 740).

A mother who had had syphilis for seven years had gummatous ulcers of the leg, without knowing their nature. She brought her six-months-old daughter, with a well-marked chancre on the labium majus. The child had infected herself with the dirty bandages of the mother, whose bed she often shared.

Case XXVIII.—Reported by Lassar (Third International Congress of Dermatology, London, 1896).

A shoemaker, 43 years old, infected fifteen years

before, and now having ulcerating gummatous tubercles on his under lip, brought his five-year-old daughter, who had recent papules about the mouth and a papular eruption on the body.

Case XXIX.—Noted by Paul Claisse in 1876, communicated by him to Tarrasevitch, and published by the latter in his thesis, 1897, p. 96.

A man contracted syphilis at 21 years of age, the chancre being followed by secondary eruptions which recurred for several months. At 27 he married, with the consent of a physician. Two years later his wife was confined at term, and died ten days later of puerperal fever. The child died at five years, of diphtheria. At 39 he married again, and passed three years without incident. Then he noticed at the right labial commissure a slight induration, which became elevated, and finally ulcerated. It was treated only with a boric acid wash, and closed gradually, leaving a pale star-shaped scar about a centimeter in diameter. As the ulcer closed, his wife developed a chancre of the lower lip, and a few weeks later a roseola and mucous patches. All the lesions disappeared under treatment with mercury and iodine.

Neither of these cases of Lassar's is at all convincing. They may be examples of tertiary contagion, but the evidence is very meager. Indeed, in the first case it is altogether more probable that the mother had contagious patches in the mouth, from which the virus might very easily have been carried to the child by means of pins or clothes. Claisse's case, reported by Tarasservitch, is much more to the point; it is altogether probable that the woman contracted the disease from the lesion on her husband's lip, but the character of the lesion is very doubtful, for the description might apply to a chancre quite as well as to a gumma, and there is no evidence given to prove that it was not a reinfection.

Cases of infection from tertiary lesions of the mucous membrane of the mouth:

Case XXX.—Reported by A. M. Sigmund (*Humboldt Medical Archives,* April, 1868, p. 65).

A girl of 17 kissed "a man whom I knew to have been laboring under tertiary syphilis and who had at that time some indolent sores on the inside of his lips," and she held between her lips a cigar-holder which he had just been using. Soon after she developed a chancre of the lower lip, which she in turn communicated to a third patient, who later developed typical secondaries.

Case XXXI.—Reported by Sanguineti (Atti della Società italiana di dermatologia e sifiligrafia, t. 3, p. 125. Abstracted in *Annales de Dermatologie et de Syphiligraphie,* 1901, p. 198).

In 1889 a man acquired a chancre, followed by roseola and mucous patches, and the next year by syphilitic retinitis. He was then free from symptoms for three years, and later married and had two healthy children. In May, 1898, he had a gumma of the tongue about the size of half a nut, with diffuse interstitial glossitis, both of which healed rapidly under mercurial treatment. At the same time his wife presented mucous patches of the vagina and anal region, a maculopapular syphilide, palmar plaques, intense headaches, and cervical adenopathy. Sanguineti declares that he could find no other origin for the syphilis of the woman than the lingual lesions of the husband.

Case XXXII.—Reported by Pelizzari (*Riforma Medica,* 1892, part three, p. 557).

A man was treated for syphilis in 1881, by Pelizzari, whom he again consulted in 1892, on account of silvery patches on the lips, cheeks and tongue, asking if such lesions could be contagious. He had married in 1891, and toward the end of December his wife began to suffer from sore throat and slight general weakness, followed by great pain, violent fever, and eruption. Pelizzari saw her February 29, 1892, and found her suffering from a recent syphilis. He thought that the right tonsil was probably the port of entry, on account of its size and hardness in comparison with the left, the greater swelling of the glands on that side of the neck, and the almost entire absence of lesions on the genital region. The woman was of good family, had not been away from home, and Pelizzari was convinced that she contracted her syphilis from her husband, in whom the virus had been stimulated by an attack of influenza just before her infection.

Case XXXIII.—Recorded by Landouzy, communicated by him to Feulard, and reported by the latter at the Third International Congress of Dermatology, London, 1896, p. 478.

Mr. X., 34 years old, had when quite a young man, a rather severe blenorrhagia, and later an erosion in the left balanopreputial fold, which a physician did not consider serious, and which nevertheless was a long time in healing, being hollowed out to the size of a lentil. It left no appreciable scar. He had been married about four years when Landouzy saw him, and in that time had had nothing on his body. He denied all intercourse since marriage except with his wife, and would entertain no suspicion of her fidelity. Up to this time his wife had never been pregnant, though very healthy, and "formed to have a dozen children," as a gynecologist declared when consulted on this point. Dr. Landouzy was called to see the wife on account of a general eruption and found a disseminated papular syphilide, small nonindurated patches beginning to form on the labia majora, enlarged perimaxillary, cervical, axillary, and inguinal glands, especially at the border of the jaw, at the right angle of which was an indolent, cold gland, larger than any other on the body. The uvula was covered by a typical opaline patch; the tonsils were enormous, verrucous, the right especially looking like a big raspberry. For two weeks she had suffered from fever, loss of appetite, lassitude, headache, and malaise. The husband, carefully examined that day and the following, showed absolutely nothing abnormal of skin, mucous membranes, or lymphatic system, except for a smooth tertiary glossitis, without nodules or furrows, bordered by psoriasiform plaques. He had smoked cigarettes for sixteen years, but had suffered no inconvenience, and declared that his tongue had been in its present condition only a short time. For several weeks he had had frequent intercourse with his wife (whose vulvar lesions were comparatively slight), but he had no lesion on his penis. The woman was shown to Professor Hardy, without history, and he made the diagnosis of secondary syphilis; chancre of right tonsil, probable port of entry. Professor Fournier saw the husband, and in view of his excessive smoking, made some reserve about a positive diagnosis of tertiary glossitis; but when the whole history was given, including his indemnity while cohabiting with a wife in full secondary eruption, acceded to the diagnosis of tertiary specific disease of the tongue. Under specific treatment the woman recovered rapidly, and after the husband had taken potassium iodide for several months she became pregnant, and all went well till the fourth month, when, in consequence of a mishap when getting into a carriage, she miscarried.

Case XXXIV.—Reported by Fournier (First International Congress of Dermatology, Paris, 1889, p. 717).

"A young man contracted syphilis fifteen years ago, which ran its ordinary course. He was treated, recovered, and asked permission to marry. After his marriage he had pulmonary symptoms which were specific in all probability, and then a sclerous glossitis: his tongue was indurated and he had frequently little erosions. He was a heavy smoker. I told him the dangers which threatened his wife. Two years later he brought her to me; she had a chancre of the lower lip, and very characteristic secondary symptoms. He himself had only insignificant erosions of the tongue. It is unnecessary to add that his wife was above all suspicion, and besides, this coincidence between labial chancre and lingual erosions is sufficiently significant."

Case XXXV.—Reported by Jullien ("Vieilles Veroles," Kaposi Festschrift, *Archiv für Dermatologie und Syphilis,* 1900, p. 15).

A man 32 years old, who had been infected sixteen years before, had a glossitis of very late type; it seemed so old that another physician had not thought it necessary to give specific treatment, and allowed marriage. The glossitis was cured by a few injections of calomel; but one day the wife came with her husband, and Jullien recognized in her a paralysis of the third pair; the tongue, apparently so inoffensive, had made a victim.

The first of the cases, Sigmund's, is interesting chiefly on account of the early date at which it was published, when the doctrine of the contagiousness of secondary lesions was still fresh. It is a pity that there is so little said about the course and appearance of the disease in the young man, for as the record stands, the opinion is almost irresistible that "the indolent sores on the inside of the lips" were mucous patches. Jullien's case proves at least his own belief in the contagiousness of the late lesions; as an argument it has little weight save that of the author's authority, but as an example it is interesting.

The remaining cases can all be accounted for by accidental infection from some unknown source, which indeed is not at all uncommon. Still the development of a chancre in a wife soon after late lesions in a husband who had had no symptoms for years is much more suggestive of cause and effect than of coincidence. These cases have also the advantage that there is no question of infection by a hidden mucous patch, since the entire mucous membrane is accessible for inspection.

Cases of inoculation of physicians in the practice of their profession:

Case XXXVI.—Reported by Bumstead (*Humboldt Medical Archives,* 1868, p. 274).

"A well-known surgeon of the West was called upon to operate upon a case of extensive syphilitic necrosis of the cranium in a patient who had had no secondary symptoms for a period of two years. One of the surgeon's fingers was abraded, and at this spot a chancre developed a week or two afterwards, and was followed by the usual train of symptoms. Such was the history communicated to me by this surgeon, who was also confident that he had not been brought into contact with a case of syphilis before for several years and could have contracted the disease only from this operation. His age, standing, and powers of observation are such as to add great weight to his statements, and I am inclined to believe his opinion correct, yet the possible sources of error are so numerous that I would not adduce the case as one beyond question."

Case XXXVII.—Reported by Brandis (*Deutsche medizinische Wochenschrift,* 1898, p. 329).

A case of chancre of the finger in a surgeon, following an operation for necrosis of bone.

Cases XXXVIII, XXXIX, and XL.—Reported by Brandis (*loc. cit.*).

The author reports three cases of chancre of the finger in surgeons, following the examination of or operation on "those difficultly healing ulcers of the rectum, which give so much trouble and not seldom lead to stricture, and (at least as far as I have observed) are always accompanied by profuse and putrid suppuration." He gives no further details of the sources of the infection.

Case XLI.—Reported by Lydston ("The Surgical Diseases of the Genitourinary Tract, etc.," 1904, p. 361).

A physician inoculated his finger while operating upon a rectal fistula in a patient suffering from tertiary syphilis. In due time a chancre appeared, and was followed by a well-marked development of secondary symptoms. He died, finally, from cerebral syphilis.

These cases of "professional syphilis," as it has been called, are of great interest, but the data given are so meager that they are not convincing. It is particularly to be regretted that we have no exact information of the age of the syphilis from which the contagion was supposed to spring: for as the records stand, infection through the blood was quite possible. In connection with the first two cases, however, it should be remembered that bone marrow is one of the few internal tissues of infected monkeys which Neisser[43] found capable of transmitting the disease.

Experimental inoculation of the products of gummatous lesions was attempted many years ago, and always without success. Diday, Ricord, Boeck, Baerensprung, Sarrhos, Tanturri, all tried repeatedly, and all failed. But closer examination robs these experiments of all their value, as evidence against the contagiousness of gummata, for, in nearly every instance, the matter was reinoculated on the patient from whom it was taken, and in other cases it was inoculated on patients already suffering from syphilis. It must be remembered also that at the time these experiments were undertaken, an inoculation with syphilitic material was considered positive only when a pustule developed within a day or two of the experiment; the existence of the primary incubation period, the lapse of three or four weeks between the exposure and the development of the chancre, was not fully established, and Ricord accounted for all the cases where it appeared to occur by imperfect observation. Is it any wonder that under these circumstances inoculation with gummata should have seemed unsuccessful? Even if a chancre had appeared in some of the very few cases where healthy subjects were used, it would have been overlooked. We are quite justified then in throwing out all these early experiments. They were repeated later, however, on subjects free from syphilis, who were watched for weeks afterwards, and with the same negative results. Thus Finger,[15] in 1887, reported a series of ten such inoculations, using, to quote his own words, "gummatous pus, the degenerated caseous masses, not the true secretion of the gumma." This statement of the material used gives the explanation of his failure and the failure of so many others, and of the fact that so many men with gummatous lesions do not infect their wives. As has been pointed out repeatedly,[40] an ulcerating gumma is a degenerating lesion, and might be expected to be free from its specific organism, just as the pus of an old gonorrheal pyosalpinx is sterile. It is only in the progressive developing parts of the gumma that the active contagium may reasonably be looked for. Yet, even if such material were used, many inocula-

tions might fail. The results of these early investigations are often quoted against the contagiousness of gummata, but people forget that years ago the experimental inoculation of matter from primary and secondary lesions was often equally unsuccessful. Fournier[22] quotes Rattier, Sarrhos, Cullerier, and Puche, as having failed many times in attempting to inoculate upon healthy subjects the material from various forms of the secondary eruption, and from hard chancres, and states that he himself saw the failure of the attempt to inoculate material from a hard chancre upon a healthy man.

While these experiments were going on, the attempt was being made repeatedly to find an animal susceptible to syphilis. Amongst a host of animals used, the monkeys seemed to be the best, and from Cullerier in 1845 to Nicolle in 1889 a number of investigators found that when the secretion of a chancre was inoculated upon these animals, they developed about three weeks afterwards a very suspicious sore at the site of the inoculation; and some few observers even reported a secondary eruption; but the results were unconvincing, the eruption was of doubtful character, and there was no way of proving that the so-called chancre was really syphilitic at all. The matter stood in this unsatisfactory condition until Metchnikoff and Roux, in December, 1903, announced the successful inoculation of anthropoid apes, and experimental syphilis was again a laboratory possibility. Metchnikoff continued his work, and others corroborated it, notably Lassar, Neisser, and Thibierge. It is now firmly established that the higher apes, especially the chimpanzee, are inoculable with human virus, that the inoculation wound heals without incident, and that after a period of incubation averaging about four weeks, an indurated sore forms at the site of inoculation, soon followed by local adenopathy, and later in some cases by a papular eruption. These products may be reinoculated on other apes, leading to exactly the same development. When the human syphilitic virus is inoculated on lower monkeys, the action is somewhat different. The inoculation wound heals as kindly, the period of incubation is practically the same, but adenopathy is generally absent, and there is no general secondary eruption, thus confirming the results of the earlier investigators. Yet the disease is still syphilis, for if the initial lesion so produced upon a lower monkey is inoculated upon an anthropoid ape, it causes exactly the same train of symptoms that follows the inoculation of human virus; and as in man, one attack of the disease protects the individual against all subsequent exposures. Although the lower monkeys do not invariably react to the human virus, still when they do react, the clinical appearance and the course of the resulting lesion are so uniform and so characteristic that they form an excellent proof of the material used for inoculation.

The first recorded attempt to inoculate gummatous material on monkeys, so far as I have discovered, was made by Salmon[51] and published by him in 1904. He inoculated two monkeys, a macacus cynomolgus and a macacus sinicus, on several parts of the skin, with pus from a gummatous ulcer on the arm of a man whose syphilis dated back eight years. Both of the inoculations failed. Sixty-six days later, the monkeys were inoculated with material from the secondary eruptions of two men with recent syphilis. One of the monkeys died of some intercurrent disease, the other (macacus cynomolgus) developed two typical chancres of the palpebral conjunctiva, and submaxillary adenopathy.

Metchnikoff[39] inoculated on both eyebrows of a chimpanzee the scrapings of an ulcerated gumma of the base of the nose. There was no result, and thirty-seven days later he inoculated on the same animal the virus from the chancre of another chimpanzee, mixed *in vitro* with the contents of a gumma of the arm. Thirty days after the second inoculation a typical chancre developed.

The cause of failure in all these cases was the same as in the earlier experiments with human subjects; that is, the material used was the degenerate product of a retrograde metamorphosis, not the secretion nor the substance of an active growing lesion.

The first successful inoculation of gummatous material which I have found recorded was reported by Finger[17 19] to the *Wiener dermatologische Gesellschaft*, May 24, 1905. He used the contents and scrapings from the hard border of a softened but not yet ulcerated gumma on the leg of a woman who had an old unrecognized and untreated syphilis, which dated back apparently to a period seventeen years before. This was inoculated in several places on a cynocephalus hamadrvas. The wounds healed without incident, but twenty-four days later one of the spots developed a red papule, which five days later ulcerated and then covered itself with a crust, and which healed after sixteen days. Other points of inoculation followed practically the same course, and one of these, excised and examined microscopically, showed the usual structure of a chancre as seen in men and apes. A second inoculation on the same monkey, forty-two days after the first, with matter from a human secondary lesion, was unsuccessful. The experiment was repeated on another monkey, with the same results, but the details of this case are not yet accessible.

Neisser[43 44] also reports several positive inoculations with tertiary material, and in one case the syphilis of the patient whose gumma furnished the infectious material was ten years old.

These experiments are the more convincing as Finger has been forced by them to give up his old contention[16] that gummata are caused by the toxins left in the system by an old syphilis, and that they do not contain the virus, while Neisser was very slow to acknowledge the syphilitic character of the lesions observed in monkeys.

It remains only to mention the spirochæta. This organism is found in practically every chancre and mucous patch, if the search be continued long enough; and with improved technique the number of failures reported grows less and less. Even many years after the infection, the spirochæta is present in secondary lesions, as Tomasczewski[57] reports it in three cases four, five, and seven years, respectively, after infection. Flexner[20] reports finding numerous spirochætæ in the blood from a macule of a syphilitic infant whose mother's syphilis dated back eight years. But in spite of the long period of their possible life in the body, they have never certainly been found in gummata, and as the experiments of Finger and of Neisser prove that a gummata may be contagious, we must explain the apparent contradiction or else deny the etiological significance of the discovery of Hoffmann and Schaudin. The solution is afforded by analogy with lupus vulgaris. This disease is caused by the growth of *Bacillus tuberculosis* in the skin, and pieces of lupous tissue, inoculated in guinea-pigs, reproduce tuberculosis; yet it is exceedingly difficult to find the bacilli in the lupous tissue, their number is so small, and they are so widely scattered. So in syphilis, if the spirochete is the specific organism of syphilis, it must exist in gummata, though in such small numbers that up to the present it has escaped detection.

These are the data from which we may decide. The clinical evidence seems at first to be contradictory; there are many authentic instances of exposure to tertiary lesions without contagion resulting, and a few instances of such exposure followed by contagion. The escape in the first class has been fully explained, I think, and these cases have therefore but little weight; in the second class, the infection may be explained by accidental inoculation from an unknown source, but as the cases accumulate this explanation becomes more and more unsatisfactory, until we must acknowledge that the balance favors a causal relation between the exposure to a tertiary lesion and the development of a chancre. About the most convincing are those cases in which a woman has lived with a man for months or years, in perfect health, and then develops a chancre soon after an outbreak of tertiary symptoms in her husband. These cases are now sufficiently numerous and reported in sufficient detail, I think, to bring conviction even to a careful mind; but they do not amount to proof. The experiments, on the other hand, are conclusive. They rest on the authority of well-known and reliable observers, one of whom was forced by them to give up the opinions he had held and defended for years. They prove that a gumma may be capable of transmitting the disease. Whether a gumma is always contagious is a very different question. It is altogether probable that the living, growing part, the border, is always infectious, and that the rarity of examples of infection is due to the fact that the organism is present in such scanty numbers and has so little chance to reach fertile soil. This belief, however, is not proven, and the phenomena of apparent harmlessness and occasional virulence are susceptible to other interpretations; first, the organisms may vary in their virulence, as above mentioned; and second, the gumma may be a product of the action of toxins in which the organisms of syphilis may be present from time to time but which exists independently of their presence. These questions will probably find their explanation in further inoculation experiments; in the meantime, the first explanation is the best, because it fits all the facts observed, and because it is the simplest. In any case, the practical lesson is the same—so long as a man shows any sign of syphilis, so long he must be considered a source of danger to the community.

My thanks are due to Dr. L. Duncan Bulkley for his advice and counsel in the pursuit of such research; to Dr. Boleslaw Lapowski for many practical hints and the translation of one of the case-reports, and to Dr. Sharp and to Dr. Kalish for the privilege of reporting their cases.

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Treatment of Boils.—Bulkley recommends an ointment of carbolic acid, 5-10 grains; fl. extract of ergot, 1-2 drams; starch, 2 drams; zinc oxide, 2 drams; and rose-water ointment, 2 ounces. It is spread upon the center of a moderately thick layer of absorbent cotton, several times the size of the inflamed area, and secured with strips of adhesive plaster.—*International Journal of Surgery.*

CARBON-DIOXIDE GAS RETENTION AS A FREQUENT FACTOR OF DISEASE.

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At the conclusion of an article published in the Medical Record of June 23, 1905, on "Formic Acid in Rheumatic Conditions," I gave a brief résumé of some discoveries I had made concerning the etiology of this disease as a result of four and one-half years' study and experimentation:

1. That uric acid is a product, not the cause of rheumatism.

2. That all varieties of rheumatism are caused by a carbon-dioxide, or rather, a carbonic-acid toxemia, due largely to fermentation of starchy substances in the stomach and bowels through improper insalivation and mastication of these substances and the pernicious use of liquids during and after meals which greatly dilute and weaken the ferments designed to digest such substances.

To-day I not only reiterate those statements, but declare furthermore that many of the diseases with which mankind is afflicted are primarily due to retention of the same poison in the system through failure of one or more of the excretory organs to perform their function of elimination. Disease germs, though impotent and powerless in conditions of perfect vitality, become active as roused lions when vitality is impaired. Lowered vitality or anemia comes first as an important etiological factor in the production of nearly all the diseases to which human flesh is heir. From time immemorial man has recognized and dreaded the dangerous effects of suppressed perspiration, but throughout the ages no one has ever recognized the toxic factor of perspiration which, when retained within the system, produces so much pain, suffering, and death. The author has after much study and experimentation found this potent factor of disease to be carbonic acid, the only poisonous constituent of perspiration.

That there may be a proper illumination of the subject and no misunderstanding; that the profession may look at this subject from my viewpoint, I ask the reader's indulgence for relating certain facts with which he is already familiar. To maintain animal heat, an oxidation of food products and other hydrocarbon substances is constantly going on within the system, resulting in the formation of carbon dioxide gas. This gas in the presence of water forms carbonic acid ($H_2O+CO_2=H_2CO_3$). This acid is a stable compound, present in the system in ever-varying quantities and is eliminated by four great vitally important organs of excretion, the lungs with their 1,800 square feet of mucous surface, the skin with 11,000 square feet of cutaneous openings of sweat glands, the mucous membranes of the stomach and bowels, and lastly the kidneys whose secretions always contain it in variable amount. If the kidneys suspend their function of excretion, convulsions result; this is due not to uremia but to carbonic acid retention. If the skin function of any locality is suppressed, the subcutaneous tissues and adjacent mucous membranes suffer a local toxemia in consequence. Expose the uncovered head to a cold draught of air, suppressing perspiration, and sneezing with running of the nose give instant warning that one has taken "cold" and that an attack of acute nasal catarrh has begun. It may extend to the aural mucous membranes and catarrhal deafness result. Germs, however, have nothing to do with these pathological processes.

A draught of air on a perspiring neck, shoulder, or lumbar region produces a rheumatism of the muscles beneath—a local toxemia—almost at once. Tonsillitis on the right or left side, spasm of the glottis, and rheumatic sore throat are similarly produced. If one leaves off the usual chest clothing, undershirt or overcoat, and exposes himself to a cold draught, pleurodynia, pleuritis, laryngitis, catarrhal bronchitis, or pneumonia will quickly follow as a direct result of suppression of perspiration. The bacillus of pneumonia cannot be considered as the sole active, primary cause of any of these various diseases, but on the contrary all are produced by one essential cause —exposure to cold, suppression of the cutaneous exhaling function resulting in a localized carbonic acid toxemia. Soldiers after long marches and football players after strenuous games suffer from albuminuria, of which an increase of oxidation of hydrocarbons producing abnormal amounts of carbonic acid in the blood is manifestly the cause. After constant study of this subject for many years, I am convinced that all pains, neuralgic, rheumatic, or gouty, are produced by this poison.

Carbonic acid possesses the power of decomposing common salt, a fact not generally known, and this becomes a matter of vital importance as far as the maintenance of the integrity of the red blood corpuscles is concerned, as I shall show. That sodium chloride is an indispensable ingredient of the blood in the proportion of one-half of one per cent. is a fact no one will deny. Lower this proportion from any cause and you invite an immediate chemical disintegration of both red and white blood corpuscles. Inject pure spring water into a depleted circulation following a hemorrhage and the patient dies at once, not because the water is toxic but because it dilutes the blood and lowers the vitally necessary per cent. of common salt, thereby disintegrating both the red and white blood corpuscles. Inject under identical circumstances any reasonable amount of normal salt solution and the patient rapidly revives and soon recovers his usual strength. All the normal salts in the blood plasma, including the urates, are held in perfect solution and the kidneys possess no power of selection or rejection of any one of these saline constituents. The urine then is practically a saline mirror of the blood plasma. Uric acid has lately been shown to be a product of the destruction of white blood corpuscles through oxidation of their nuclein. Therefore, either diluting the blood with large quantities of aqueous liquids or lowering the proportion of sodium chloride in the blood in any other way, produces what I shall call a chemical anemia by disintegrating not only the red blood corpuscles, the oxygen carriers, but also the phagocytes, the proved destroyers of disease germs. Naturally we would expect under these circumstances that the uric acid in the urine would be increased.

With these facts before us, and bearing in mind that uric acid never exists uncombined in human blood or tissues, what shall we say of those who advocate drinking large quantities of water "to wash the uric acid out of the blood"? I warn those who advocate drinking large quantities of water, who think pure water can do no harm, that they are extremely likely some day to find themselves victims of nephritis from a chemical or artificially produced anemia as described above; for wherever oxygen and oxygen carriers are de-

ficient, carbon dioxide gas, or rather carbonic acid, increases most abundantly, and the kidneys as well as all the other organs and tissues of the body suffer in consequence. To this carbonic acid or chemical blood destruction must be ascribed the anemia which accompanies rheumatism, pneumonia, scarlet fever, tuberculosis, typhoid fever, etc., the etiology of which has been up to this time a problem of profound mystery to the medical profession. It is a well-known fact that when human blood is deprived of nine-tenths of its oxygen the body dies, and I formulate an aphorism equally true that will stand the test of time: that when any tissue of the body is deprived of nine-tenths of its oxygen it dies or necroses also, since no tissue can be expected to possess a vitality or tenacity of life not enjoyed by the system as a whole. It is in this way and manner that ulcerations of every kind, all local necroses of tissues are produced by carbonic acid saturation of those tissues to the fatal point of oxygen exclusion; and disease germs or bacilli play little or no part in the phenomena.

Anemic persons are very subject to boils. A bruise or other slight injury establishes a local inflammatory condition, a stasis of circulation, the red corpuscles soon part with their oxygen, carbonic acid accumulates, further supply of oxygen is shut out, especially from the central tissues, which necrose in consequence. The *Staphylococcus pyogenes,* nature's chosen scavenger, immediately begins the work of separating the living from the dead flesh, the latter softens, disintegrates, pus forms, and the dead parts exfoliate, after which the resulting ulcer granulates and heals. The germs of suppuration do not cause the death of the central portion or core, which is the popular explanation; deprivation of oxygen is the real cause thereof. If you tie the arteries supplying a given part, deprivation of oxygen causes speedy death of that tissue, which softens, degenerates and exfoliates, ulcerates and heals as before. Staphylococci, as in the previous case, are present and are active in separating the living from the dead flesh, but they did not cause the pathological condition. Press a metal ring upon the skin, hard enough to shut off the circulation for a few hours, and death of the part enclosed occurs from deprivation of oxygen as in the previous case, with suppuration and healing by granulation. No sensible man would say that germs produced this condition.

Carbon dioxide gas resulting from starchy food fermentation and abnormally accumulating in the bowels causes gastric and enteric catarrh, the gases surrounding the feces greatly distending the ascending colon above, as well as the appendix. The feces we know normally are moved onward by vermicular motion and contraction of the intestines, but in cases of overdistention, the frictional hold upon the feces is lost, the upper portion of the colon dilates, the fecal mass falls, and pressing steadily against the ileocecal valve, causes ulceration, which is finally healed by granulation. This scar tissue cuts off from one-third to one-half of the normal circulation of the appendix. A fresh attack of acute indigestion with fermentation and severe pain now ensues; inordinate dilation and saturation of the stomach, bowels, and the appendix also, by these poisonous gases results. The blood-vessels are pressed upon and their canals obliterated mechanically by the imprisoned gases, stasis results, oxygen is shut out, and as in cases of strangulated hernia the parts mortify, the dead tissues suppurate, rupture, and peritonitis and death follow as natural consequences. Oxygen starvation, and not disease germs, is indisputably the cause of this deplorable result.

Ulceration of Peyer's patches and the solitary glands, is a common symptom of anemia. It is not therefore a characteristic or pathognomonic symptom of typhoid fever or produced by its bacilli, but doubtless is caused by the anemia alone, which is always a grave, gradually increasing characteristic symptom of typhoidal conditions. In such cases carbonic acid gas and other toxic gases are prone to accumulate in the bowels and especially in the ascending colon, oxygen is crowded out, the ulcerated parts devitalized and dioxygenized necrose and hemorrhages with perforating ulcers ensue. As it has not been shown that typhoid bacilli *per se* ever cause these perforating ulcers, they are doubtless as in the other illustrative cases caused by a local toxemia and a deprivation of oxygen, without which no tissue can live. This theory of mine is borne out by the uniform experience that fatal cases of typhoidal hemorrhage and intestinal perforation are always preceded and accompanied by great tympanites. The same gaseous distension also occurs in appendicitis before necrosis of the appendix, as every surgeon must bear witness.

Why perforating ulcers of the small intestine should follow extensive burns over the abdomen has been a puzzle to medical men for centuries, but it is easily and scientifically explained by this law of oxygen exclusion by carbonic acid gas. Burns which destroy the skin over the abdomen destroy at the same time its exhaling function. The blood in the subcutaneous tissues, and in the cavity of the abdomen also, becomes saturated with retained carbonic acid, and oxygen is excluded. Perforating ulcers due to necroses of the small intestine follow and death speedily results as in typhoid. If my statements be correct, appendical necroses and perforating ulcers might be prevented by aerating the colon with oxygen or air through a double, high, rectal tube by means of a foot pump and by aerating the peritoneal cavity through a double chambered trocar. The same methods could be utilized in threatened perforating duodenal ulcerations following extensive burns over the abdomen. Certainly these methods are justifiable and much safer than to wait for perforation and laparotomy or death.

Suppose you have a case of pneumonia which does not resolve or clear up. The catarrhal mucus in the bronchial tubes acts as an impervious membrane—a baneful barrier to the entrance of oxygen—and prevents also the exhalation of carbonic acid gas. This gas being retained in the system attacks the common salt in the blood plasma, in the blood corpuscles, and in every tissue and cell throughout the body. A chemical anemia is thus produced. The red blood disks become greatly lessened in number, oxygenation of tissue of course diminishes correspondingly, the pneumonic portion of the lung suffering most from lack of oxygen. Carbonic acid saturation to the point of oxygen exclusion results. Because of this oxygen exclusion the parts necrose as in the other cases, separation of the living from the dead tissues takes place, the necrosed parts break down, soften, and suppurate: a violent fit of coughing is often followed by a hemorrhage and death. The verdict usually is "Tuberculosis of the lungs with hemorrhage." I think a truer diagnosis would be "Carbonic acid saturation of pneumonic lung tissue, excluding

vital oxygen, necrosis resulting." Gangrene of the lung is without doubt due to the same causation, as well as empyema.

What is known as "shock" is supposed to mark the advent of intestinal perforation and peritonitis in typhoid fever. This is not so. Shock is produced by a carbonic acid toxemia through intestinal absorption, or through failure of the skin to perform its functions, and the symptoms which mark this condition may and often do occur without either perforation or peritonitis from hemorrhage, bad news, traumatism, extensive burns over extremities, etc. It should be remembered that all cases of shock are accompanied by a blanched, anemic skin, which means the suspension of its exhaling function and consequently blood poisoning from retention of carbonic acid. The skin cannot be expected to exhale poisons from blood not circulating through it. Whether the result of shock is fatal or not depends on the speedy resumption of the skin exhaling function.

The skin is a vitally important excretory organ of the body, but is not properly understood or appreciated. Its functional activity depends in direct ratio to its supply of blood from which the toxic gases of combustion are exhaled or eliminated.

Almost all acute and many chronic inflammatory diseases are caused by suspension, either local or general, of skin functional activities. Colds start the pathological processes, bronchial catarrhal secretions mechanically prevent CO_2 exhalation as well as the complementary oxidation of red blood disks.

Weak hearts antagonized by fifteen pounds to the square inch of atmospheric pressure result in cutaneous anemia and consequent loss of the skin as a gas-exhaling, blood-purifying organ, and this explains why tuberculous patients improve in high altitudes where atmospheric pressure is lessened. Thus the skin, relieved of undue pressure, regains its normal circulation and functional activity as a blood purifier.

Every physician recognizes the excellent results following dry cupping in pleurodynia, pleuritis, pneumonia, tuberculosis, etc., and yet these beneficial results are only explainable by the production of local hyperemia and increased skin exhalation of CO_2 induced by lessened atmospheric pressure. Certainly dry cupping of the skin of the thorax cannot affect distant inflammatory processes, increase or diminish the circulation of the heart and lungs within the closed air-tight cavity of the chest.

Considering all these facts, I propose to treat pneumonia, pleuritis, pleurodynia, tuberculosis, mental and surgical shock, the so-called toxemic condition now known as uremia, acute and chronic nephritis, and puerperal convulsions by lessing cutaneous atmospheric pressure from fifteen to seven and a half or even five pounds pressure if need be, as follows:

I would place such cases in air-tight compartments, leaving only the head and neck exposed. By means of an air pump and a vacuum gauge any degree of atmospheric pressure within the compartment may be continuously maintained, thus securing a general cutaneous hyperemia with perfect restoration of the skin to its normal functions.

It would be advisable also to strengthen the heart's action by administering strychnine hyperdermically as needed, especially in shock cases.

By this treatment tuberculous patients now senteneed to banishment in high mountainous regions might live at home among friends enjoying also the advantages of the much lauded outdoor treatment at present so much in vogue.

I believe dry gangrene of a limb might be successfully treated in this way. It is worth a trial at least.

We hear a great deal of heart failure in these days, from causes unknown, or from "acute indigestion," and nobody seems to account for it scientifically or give a cause for apoplexy with which it often seems closely associated. Let me give my explanation and the history of an illustrative case. The hemoglobin of the red blood corpuscles possesses a tremendous affinity or attraction for oxygen; I have found an air pump that will raise a column of mercury 29 11-16 inches, quite incapable of separating these elements the one from the other. The tissues or hydrocarbon elements rob the hemoglobin of its oxygen with great facility. It is natural that this should be so, for oxygenation of the body tissues would be impossible without it. Saturating the red blood disks is another element, water, which possesses a great affinity for carbon dioxide gas. It holds 100 per cent. in the open air, 200 per cent. under a pressure of fifteen pounds more, and 1,000 per cent. under a pressure of ten atmospheres. It is this element which shuts out oxygen from the red blood corpuscles as in other tissues and so often produces death from heart failure. Let me illustrate. Two gases cannot occupy the same available space within the red blood corpuscle at the same time. When the red disk returns to the lungs robbed of its oxygen and loaded with carbonic acid from the tissues and blood plasma, the latter is forced out by the oxygen by reason of its superior affinity for hemoglobin. When, however, under increased blood pressure, the water of the red corpuscle contains a sufficient amount of compressed carbonic acid gas to equal or offset the affinity or attraction of hemoglobin for oxygen, the carbonic acid remains in possession of the citadels of life, oxygen is shut out, and the heart muscle, poisoned by the deadly gas, stops beating and the victim instantly falls dead. I believe, however, that many of these cases could be revived by forcing a stream of oxygen into the pericardium as a heart stimulant.

We sometimes hear of two varieties of angina pectoris, "false" and "true." We are told that if a patient survived an attack, he suffered from false angina, but if he succumbed it was equally good evidence that "true" angina was the cause of his demise. There is no "false" angina pectoris. All the symptoms of these cases are caused by carbonic acid toxemia. The danger grows with the degree of blood saturation and culminates in death when oxygen is excluded from the red blood disks as before illustrated.

I have found to my own satisfaction that rheumatism and nephritis, acute and chronic, are caused by carbonic acid poisoning, and valvular heart disease and endocarditis as well. I believe that the dangers attendant on etherization are due to the manner of administering the anesthetic, forcing patients to inhale air poisoned with carbonic acid, and hence nephritis is produced. I can aggravate or ameliorate attacks of muscular or arthritic rheumatism by the use of liquids at meals and after, or refraining therefrom, and also by taking fermented wine, beer, or champagne, or by the use of vinegar on foods, or abstaining therefrom. The ferments in these liquids ferment all the saccharine substances in the blood and tissues and greatly increase the amount of carbonic acid in the system. Carbonic acid also produces inflammation and destruction of the peridental membrane. The rough, sand paper condition of roots of teeth and what was formerly

known as Riggs' disease—now pyorrhea—are really deposits of carbonate of lime, the carbonic acid forming chemical union with vegetable lime salts in the blood. These carbonates of lime are deposited in cartilaginous tissues everywhere. It is in this way that arteriosclerosis and calcareous degeneration of joints, cartilages, arteries, aorta, and cardiac vessels and valves are produced.

We all know the liability of endocarditis occurring in inflammatory rheumatism, and that kidney disease is apt to coexist, but the cause of ulcerative endocarditis has thus far remained an unexplained phenomenon. It is, however, due to the same toxic principle, the local necroses being produced as in all other cases by carbonic acid saturation of the endocardial membrane to the fatal degree of oxygen exclusion. Of course all these cases are fatal, for a saturation sufficient to produce local necroses would paralyze the heart muscle at the same time.

In scarlet fever the pores of the inflamed skin are partially occluded mechanically, interfering materially with the exhalation of carbonic acid which is as I have stated the only poisonous principle in perspiration. A chill completes the occlusion and general systemic poisoning results. Acute nephritis with suppression of urine, edema and general anasarca follow at once and end with what are known as "uremic" convulsions. This edematous or anasarcous condition of the tissues is not due to hydremia alone. Hydremia will not account for all the attendant physical phenomena. The swelling is largely due to carbonic acid gas. Press the finger upon the swollen skin and a pit remains. The water is displaced laterally in the direction of least resistance while the gases being lighter than water, assume the highest possible places beneath the skin. Were this edema due to water alone the pitting would be obliterated speedily as if pressure were made on a rubber bag filled with water.

The subject of metastasis in cutaneous eruptive diseases has long been enveloped in mystery. Why suppression of an eruption should be followed by dangerous inflammatory conditions of distant organs, serous membranes, and other tissues has never been satisfactorily explained. The profession has simply been satisfied to record certain pathological facts without attempting a suitable explanation thereof. Now these things are easily explained. The metastasis of scarlet fever eruptions results in acute nephritis, general anasarca, and convulsions, and was supposed heretofore to be due to uremic poisoning. Better call it carbonic acid toxemia, as this poison is quite capable of producing all the phenomena exhibited.

The vertigo of a champagne drunk lasts four days. It is due to the toxic gases, not to the alcohol it contains. The vertigo of indigestion and that of approaching apoplexy are similarly produced.

I claim that soft cataract of infants following convulsions accompanying intestinal distention and fermentation are due to carbonic acid saturation of the lens and that hard or senile cataracts also are brought on through loss of teeth and inability to masticate food, while senile atrophy of the skin and consequent loss of exhaling function of H_3CO_3 plays an important part in systemic blood poisoning, resulting not only in change of lenticular nutrition but producing the lameness and stiffness which mark the senile condition.

Loss of consciousness in epilepsy, in apoplexy, in the fits or convulsions of children, with internal distention and fermentation, in puerperal eclampsia, and in the so-called uremic convulsions, is produced by carbonic acid poisoning, which paralyzes the center of consciousness of the brain.* That carbonic acid does produce such paralysis almost instantly is proved by the experience of cleaners of old wells who fall unconscious as soon as the head dips beneath the surface of the fatal vapor which is almost pure carbonic acid.

I was lately called to attend Mr. W., aged seventy-four years, a victim of intestinal indigestion who had suffered two years before from a slight apoplexy resulting in paralysis of the left internal rectus muscle. He recovered from this, however, after a few weeks. I found this condition: Divergent strabismus, the pupils dilated irregularly, the patient dazed, unable to collect his thoughts or speak intelligently, great vertigo. Diagnosis: Threatened apoplexy from carbonic acid toxemia through intestinal absorption. I ordered immediately, free catharsis and large rectal and colonic enemata. Before this was accomplished, however, the patient fell in convulsions. Another physician called in recognized imminent heart failure and gave 1-30 of a grain of strychnine subcutaneously with marked benefit. On returning later I ordered profuse enemas which speedily resulted in great evacuations of feces and foul gases. This was followed by an immediate return to consciousness, no paralysis resulting. Had the brain saturation gone on to oxygen exclusion a local necrosis with blood extravasation would doubtless have resulted. Extravasation and paralysis are almost always produced in this manner in my opinion, though in arterial degenerative conditions, rupture may at any time occur, paralysis following blood extravasations. Feeling certain that carbonic acid saturation of the intestinal ulcers to the point of oxygen exclusion is the cause of the perforation of Peyer's patches, hemorrhage, peritonitis, and death, I now treat all cases of typhoid fever by giving sodium chloride 20 grs., water (hot preferred) 8 oz. every two hours with high enemata of normal salt solution every three hours. I keep the bowels open once or twice daily, allowing only a peptonized milk diet, and my patients speedily recover with red cheeks while the fever rapidly diminishes and disappears inside of six days. My theory is that the carbonic acid attacks the common salt forming an innocuous salt carbonate of sodium, that chemical anemia is thereby prevented as well as local poisoning which perhaps would otherwise result in necroses with perforation, hemorrhage, peritonitis, and death. I hope my experience will be duplicated by others and many valuable human lives will be saved thereby.

It is a well-known fact that prolapse of the kidneys produces albuminuria and dangerous nephritis, and the reason is plain. The prolapse twists the blood-vessels, producing venous congestion and stasis of circulation, resulting in a carbonic acid toxemia of the affected kidney with albuminuria. Replacing the kidney by Edebohl's operation restores the normal circulation and the toxemic condition and albuminuria vanishes.

The skin and mucous membranes of stomach and bowels are organs complementary to each

*The "lenticular nucleus" is believed now to be the center of consciousness of the brain. In poisoning by illuminating gas (carbon monoxide), with permanent loss of consciousness, this body is found on post-mortem examination to be destroyed. In the light of my claim that loss of consciousness in epilepsy, apoplexy, uremic convulsions, etc., is produced by carbon-dioxide toxemia, the above facts are extremely interesting.

other. Suspension of the exhaling function of the skin from nervous shock is followed by a great increase of intestinal gases. This accounts for what is known as nervous indigestion. If carbonic acid toxemia can produce an inflammation of the pleura, endocardium, and other serous membranes, is it not equally reasonable to believe it capable of producing peritonitis and cerebral or spinal meningitis?

I am more than satisfied that carbonic acid toxemia will yet be found to be the main factor in the production of cancer of the breast, stomach, and of the intestines, of bronchial asthma, of heart failure in pneumonia, and of cellulitis, gangrene, etc. Having thus found most reasonably that anemia with carbonic acid toxemia resulting in oxygen exclusion is the primary cause of many of the diseases with which mankind is afflicted, I close with this reasonable query, If God in His infinite wisdom has provided four distinct and vitally important organs for eliminating from the human body this excretory, deadly poisonous gas, why in the name of reason and common sense should intelligent physicians, ignoring *His* wisdom, strive to force this gas back into the circulation of their patients—a poison more deadly than strychnine, which unites with no tissue, aids or assists no organic function, but on the contrary shuts out vital oxygen and produces more destruction of human life than any other factor in the universe?

ADDRESS OF THE PRESIDENT AT THE TWENTY-EIGHTH MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION AT NIAGARA FALLS.*

By J. W. GLEITSMANN, M.D.,

NEW YORK.

Fellows of the American Laryngological Association:

It gives me great pleasure to welcome you here to this beautiful city, so near to the place, the memory of which is dear to us all by the organization of our Association the third of June, 1878, at Buffalo. Of the twenty-one gentlemen addressed the tenth of May, 1878, by the late Dr. Frank H. Davis, we are happy to count ten yet as active members. We can also justly be proud that ours is the oldest national association of Laryngologists in existence.

My personal connection with Laryngology carries me far back to the years 1867 and 1868, when I spent two summers in Vienna and took courses with Leopold von Schroetter, who will celebrate his seventieth birthday next year. Schroetter's dexterity and his patience and perseverance in training the larynx for introduction of instruments excited the admiration of all his scholars. On one occasion I saw him inject sesquichloride of iron into a tracheal tumor with good results.

Those of us who practised Laryngology and Rhinology before 1884, the year of the discovery of cocaine, will fully appreciate the difficulties previously encountered, and the progress made in our specialty since that time.

To the advancement of our science the members of our Association have contributed their full share, and in addition to publications scattered in the medical journals, our transactions are an ever-living testimony of their efficient work and labor. The most valuable and potent incentive for this incessant progressive study is, in my opinion, the fact that the members of our Association with very few exceptions are or have been connected at one time of their life with medical schools in the capacity of teachers, and have been found true to our motto "Docendo discimus."

It is but a natural aim and our first duty to advance science, and by doing so to advance ourselves. There is ample evidence that the members of our Association have conscientiously lived up to this principle, and I have no fear on that score for the future. But besides the scientific efforts and the struggles in daily life, there is in my opinion a feature which we, as members of the oldest and representative American association, should not lose sight of, and this is the endeavor to maintain the standard of Laryngology on a par with other specialties, and to have full recognition and representation in medical colleges and congresses.

The rapid development and progress of Laryngology during the fifty years of its existence and the faithful, energetic work of laryngologists in all parts of the world, have made Laryngology and its allied branches a compact science, which cannot be disregarded and must be known in the fundamental principles to the accomplished clinician of the present time. Being progressive in the true scientific sense, improving its methods and enlarging its fields, Laryngology is entitled to be accorded the same position as held by other corresponding specialties.

You will be requested to take cognizance of and to act upon a letter our Secretary received a few months ago from the Laryngological Association of Vienna, inviting the laryngologists of the world to celebrate, in 1898, the fiftieth anniversary of the establishment of clinical Laryngology by Tuerck and Czermark. In conjunction with this festival it is intended to organize an International Laryngological Congress. You are asked not only to send delegates to the celebration, but also to express your views if the formation of such a congress is desirable and to the interest of our specialty.

The congress can be created only when the preponderant majority of laryngological societies are in favor of its inauguration. As the majority of societies hold only annual meetings, quite a number of replies have not been received yet, but, according to recent letters of Professor Chiari to your President, thirteen societies have expressed their formal consent, one of which, and the only one in the United States so far, is the American Academy of Ophthalmology and Otolaryngology. In addition a large number of other societies have declared their approval, and many prominent laryngologists of different countries have promised their appearance.

The reason for such a movement is not far to seek, and is obvious to one who has followed the history of the International Medical Congresses. At the fifteen congresses held, Laryngology was allowed the privilege of a separate, full section only four times, viz., at Copenhagen, Berlin, Rome, and Paris. At other meetings, as a rule, Otology and Laryngology formed one section, divided into two subsections, but it was left to the Lisbon Committee to add a third subsection on a par with the other two, viz., Stomatology. The controversy about this arbitrary proceeding was carried on with a good deal of feeling in several quarters, and the action of the Lisbon Committee, as well as the futile, urgent demands made repeatedly to the different committees of organization to accord to Laryngology the position it is entitled to, were the real factors for the proposed inauguration of an International Laryngological Congress. The cause of these unpleasant features lies in the deficient organization of the International Congresses themselves. The local Committee of the Meeting-place has arbitrary power, can amalgamate

*Delivered May 31, 1906.

sections or form new ones as it chooses, which at the last six congresses ranged from 16 to 23 in number; it selects the speakers on the subjects for general discussion, the honorary presidents, and against its decisions no direct redress can be had by aggrieved parties. To prevent such occurrences, if possible, in the future, two communications were sent simultaneously but independently of each other to Dr. Semon in London last fall, one by Professor Posner of Berlin, the other by your President. The former one, published in the *Berliner klinische Wochenschrift* September 4, reached the editor of the *Internationales Centralblatt* in time for reproduction and editorial remarks in its October issue, whilst the latter was delayed in transmission and with my consent suppressed, as I preferred not to have my propositions published as a belated communication. Professor Posner's and my own views coincided in the principal points, viz., to curtail the power of the local Committee of Organization and to transfer the same to the national committees and the delegates to the congresses.

The position of Laryngology in medical colleges and universities is more gratifying in the United States than abroad, however much remains to be desired. As it was impossible to obtain catalogues from all colleges, the majority of data was taken from Minerva of 1905, which furnished also the information about foreign colleges. In twenty-nine colleges of the United States having the largest number of students, Laryngology was taught by fourteen professors in ordinary, in two by so-called special professors, in another two by professors residing elsewhere; clinical professors taught in eight, lecturers in two colleges; in the remaining six there was no teacher of Laryngology.

If we compare with these data briefly the conditions on the Continent, we find that B. Fraenkel's assertion in the *Internationales Centralblatt,* July, 1905, is still true, viz., "We have not yet a regular professorship for Laryngology." The majority of teachers in the twenty German, the nine Austrian, and the five Swiss universities are so-called extraordinary professors, with the exception of Rostock and Brussels, where Laryngology, combined with Otology, is taught by a full professor. But if we consider that in six of our colleges mentioned above Laryngology has no representative at all, and that in one of our best ones it is taught by instructors, we have sufficient reason not to remain idle, but to endeavor to elevate our specialty to the standard it deserves.

Permit me now to draw your attention to a few subjects which are nearer to our heart.

We have to be grateful that our ranks have not been broken by the All-destroyer during the past year. Although we have lost no active or corresponding fellow, one of our former active members has died, and I think it is due to his long-standing membership and his frequent attendance at our meetings that his death should not pass unnoticed by us.

Carl Seiler was 56 years of age when he died, in Scranton, Pa., October 10, 1905. He was one of the founders of this Association and remained on the list of active members till 1903. Dr. Solis-Cohen kindly informed me that Seiler's mother was a former assistant of Helmholtz in his famous experiments on acoustics, and an accomplished singing teacher. Dr. Seiler, after graduating in Switzerland, joined his mother in Philadelphia, studied under Dr. Cohen, and became his assistant. Going abroad for further study, he took up also Pathology, and after his return became soon recognized as one of the best pathologists in Philadelphia. He founded the Union Dispensary and was President of the Pathological and of the German Medical Society. His Handbook on Diseases of the Nose and Throat was published in 1879, and the three subsequent editions testify to its popularity and the faithful work of its author.

Although he was never connected with our Association, by the death of Professor Schech of Munich last year Laryngology has lost one of its best men, whose model text-books will secure him a permanent place in its history.

The harmonious meetings of the Council and the efficient work of our Secretary are entitled to the fullest credit in the management of our affairs, and I can only add my words of praise to those of my predecessor, Dr. Rice, especially as to our Secretary, whose labor can only be appreciated when working with him in the preparation for our annual meeting. The affiliations of a number of our members with other societies, and the twenty-year clause, to which Dr. Bryan has already drawn your attention, make his task more difficult than before. Although always some of the best papers are presented by the older members, with the yearly increasing number of members exempt from the obligation of reading papers or coming to our meetings we are not assured of their continuous cooperation, and before long you will in my opinion be obliged to give this matter your earnest consideration.

In conclusion, permit me to indicate a few lines which in my opinion will yield a worthy and fruitful field for future work and investigation.

The technique of examining the upper air-passages has reached a high degree of perfection and has found its fitting climax in Bronchoscopy, whose possibilities seem not to be exhausted yet.

Physiology and Pathology claim our foremost attention and their problems have to be solved by clinical observation as well as by experimental and biological researches. Although many and excellent contributions to the neurology of the larynx have appeared in recent times, the ultimate cause of the proclivity of the abductors to paralysis has not been definitely ascertained yet. Our former member, Donaldson, Jr., and the late Hooper, have discovered the differential influence of certain irritations on the recurrent, and it seems at present that not so much anatomical conditions as investigations of the chemical and biological differences will solve the question.

To the study of the etiology of diseases of the mucous membranes, the manner of entrance of bacilli, Dr. Rice drew your attention last year. Our member, Jonathan Wright, has been making extensive investigations of this subject for some time.

The improved technique has also facilitated diagnosis in many directions, and especially the Roentgen rays are often indispensable and are very useful in accessory-sinus disease. Their more frequent use cannot be too highly recommended to the rhinologist and laryngologist. We are glad to have a paper and demonstration on this subject by Dr. Coakley on our program.

We have made great progress in our therapeutics, in the medical as well as surgical line, in recent years. But our desire to effect a cure is not gratified yet, for instance in the severe forms of parenchymatous infections of the pharynx, in cancer, in tuberculosis. In surgery our accomplishments have found full recognition in all quarters, and there exists a praiseworthy zeal to improve on the old, or to devise new methods. One suggestion I would venture to make, viz., that laryngotomy be more frequently resorted to in suitable cases and be carried out by the laryngologist instead of the surgeon. In the practice

of the large number of members of our Association cases of laryngeal neoplasms, of subglottic tumors will occur, which cannot be removed endolaryngeally, and it is certainly a source of greater satisfaction to relieve a patient by our own action than to turn him over to the surgeon.

I hope that the subject for general discussion, "Diseases of the Trachea," will act as a stimulus to cultivate this field more energetically than heretofore, as it opens new and brilliant prospects for successful work.

The honor you have conferred upon me by electing me your presiding officer is in my opinion the highest a laryngologist can attain. Allow me to express to you my keen sense of appreciation and the hope that I shall be found worthy of your confidence.

A CASE OF PAPILLOMA OF THE LARYNX IN A CHILD.*

By FORBES R. McCREERY, M.D.,

NEW YORK.

M. F., female, two and one-half years old, was brought to my office August 11, 1905. The mother stated that the child had always seemed to have "something wrong with its throat." For six weeks it had suffered from cough and difficulty in breathing. Three weeks before, tonsils and adenoids had been removed at the Cornell Clinic without relief. In fact, the child was growing steadily worse.

The dyspnea and stridor were very marked. Although I was upstairs, the noisy respiration was heard distinctly as she was brought into the house. The supra- and infraclavicular spaces and the sides of the chest sank in deeply with each inspiration. No membrane was visible in the throat. Culture reported next day to be negative. The epiglottis was pinched up and curled over. For this reason, and because of the child's resistance I could not see into the larynx.

As the diagnosis was not clear, I gave some simple croup mixture and sent the child home. The next day she was brought back worse. I succeeded in getting a fleeting glimpse of one vocal cord, which seemed normal. Tilting of the mirror prevented my seeing the other, but I felt sure the obstruction was below the cords and was probably a papilloma.

So little air was entering the lungs that the child's condition was critical and might at any time become very dangerous. As the mother urged me to do something, I decided to intubate. This I did at once, with the result of making matters so much worse that I promptly pulled out the tube. After an interval of rest, I intubated again, using a larger tube, with disastrous result. Evidently the tube pushed down the growth, and I had again to withdraw it. These two intubations exhausted the little thing, and I kept her quiet in my waiting room for about half an hour. There was no improvement in the respiration, and as the only means of saving her life, I did a tracheotomy, with immediate and marked relief.

I then sent the child to Mrs. Willson's house, expecting later to split the larynx and remove the growth. Her general condition was so bad, and she had been so exhausted by weeks of dyspnea and by repeated examinations at the clinic and by me, as well as by the various operations that had been done, that I thought it wise to defer further operation for a month or two, so as to allow time for recuperation.

Three days later I left the city on my vacation, leaving the child in charge of Dr. Preston Satterwhite. A few days later she was seen by Dr. Culbert and Dr. Brewer, who both agreed with the diagnosis and thought it wiser to defer further operation for a few weeks. On returning to the city September 30, I found the child well and happy, breathing nicely through the tube, but quite unable to breathe without it. On withdrawing the inner tube and closing the outer one with my finger, hardly any air passed through the fenestra of the outer tube and the larynx. She could, however, whisper a little. Mrs. Willson's care had added several pounds to her weight. Attempts on my part to examine her larynx caused such loss of appetite and failure of her general health as to lead me to abandon them.

On looking up the statistics of laryngotomy in such cases, I found only 36 per cent. of permanent cures. The great majority of cases promptly recur. I therefore concluded to do nothing further for the present, and the child was taken home.

On February 14 she was again brought to my office. She had increased in weight from 21 pounds in November to 27 pounds. Her general health had been excellent. She could whisper a little better than in November.

On April 23 I replaced the tube by a fenestrated one, but found the child unable to breathe through fenestra and larynx, and hence inferred that the growth was still present.

According to the article in von Bergmann's "System," papilloma of the larynx in children is not infrequently congenital. It is then usually of the multiple, diffuse, cauliflower variety. They grow rapidly, and speedily recur after removal. This tendency to recur diminishes from year to year. Rosenberg's statistics up to 1896 of 109 children on whom laryngotomy had been done 143 times, showed 40 cured, 43 recurred repeatedly, and 20 died, mostly from recurrence and suffocation. Eleven of these children were operated on twice, 3 three times, and 1 seventeen times. Fifty-two were under four years of age. Percentage of cures, therefore, is 36. Eighty-eight children, of whom 13 were under four years of age, were operated on by endolaryngeal methods; of these 40 were cured. Percentage of cures, 45. Three died, and 16 were relieved. The results of endolaryngeal treatment, though very bad, are, therefore, better than those of laryngotomy.

The statistics of another series of 127 cases quoted from von Bergmann's "System" are as follows: No operation, 48 cases, 32 of whom died, 28 from suffocation, and 3 recovered spontaneously. Tracheotomized, 26 cases, 7 of whom died from the operation. Laryngotomized, 21 cases, 8 of whom were cured. Intralaryngeal methods, 40 cases, 13 of whom were cured.

This series gives about the same percentages of cures by laryngotomy as the previous series.

Clark of Boston reported 14 cases in children under fourteen years, these being all the cases treated in the Massachusetts General Hospital from 1889 to 1904, and being about 1 in 1,000 of children under fourteen. Of these 14 cases, 1 was cured, 5 died, 5 recurred, and 3 disappeared from view. Tracheotomy was done on 2, and both died. Laryngotomy on 1, result unknown. Intralaryngeal treatment on 11. One was cured, 3 died, 2 disappeared from observation, and 5 recurred.

*Read before the Section on Laryngology of the New York Academy of Medicine, April 25, 1906.

He advises tracheotomy if needed, and absolute noninterference till the period of active growth is past.

Dickerman of Chicago reports 5 cases. On one, tracheotomy was done, followed by laryngotomy, with recurrence and a second tracheotomy. One had tracheotomy and repeated endolaryngeal operations with final cure, one was still wearing the tube, one died before tracheotomy could be done, and one was operated on five times through the larynx with recurrences but ultimate cure. He advises endolaryngeal treatment, with thyrotomy as a last resort.

J. E. Summers, Jr., reports 3 cases. One had laryngotomy twice with recurrence each time, then wore a tube two years, and recovered spontaneously. Two cases recovered after tracheotomy. He advises tracheotomy only.

Hunter McKenzie reports 7 cases with tracheotomy alone. Four recovered, 1 died a year and a half after the removal of the cannula, 1 disappeared from view, and 1 was still wearing the tube. He reports 13 cases by other men resulting in cure. In 9 of these tracheotomy had been done without further treatment. In one case the tube was worn for five years.

I have spent a great deal of time in reading the reports of these cases, but I will not weary you with further details. The detailed reports of intralaryngeal operations, as given especially in many of the German journals, is sad and discouraging reading. Scores of operations extending over months and years are reported for individual cases. Hunter McKenzie mentions one case that had more than 220 endolaryngeal operations. I confess myself quite unwilling to attempt or advise such treatment in the case of this little girl. Her terror and distress are too pitiable. Laryngotomy gives too bad results. I therefore turn to the alternative of having her wear the cannula for an indefinite period, or until the period of active growth has passed. Then, if necessary, either method of operation may be tried, with better prospect of success than now.

I am well aware of the possibility of cicatricial stenosis of the trachea, due to ulceration from pressure by the tube. I can only say that in all the scores of case reports I have read, I have not found a single reference to this condition, even when the tube was worn for many years.

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Minute Anatomy of the Suprarenal Capsule.—A. Moschini states that our knowledge of the minute anatomy of the suprarenal capsule is very limited. He has made some careful histological researches of which he gives us the results. After fixing the tissues in formalin he used a 1 per cent. solution of silver nitrate, which brought out a system of minute connective tissue fibrils forming a fine rete, especially about the vessels of the gland. The connective tissue is largely represented in the formation of the suprarenal capsule, contrary to what has been observed by other methods of staining. There are also two especial kinds of cells to be found: one very small, with many prolongations, which he believes to be connective tissue cells; the other larger, thin, lamellar in structure, concave or flattened, on the nature of which he does not pronounce positively, but leans to the belief that they are of endothelial nature.—*La Riforma Medica.*

Finsen Light and Roentgen Rays in a Cutaneous Syphilitic Lesion.—F. P. Scobbo describes the treatment by means of the Finsen light and the Roentgen rays of a syphilitic lesion that appeared on the nose and contiguous tissues of the face in a patient who gave no direct history of syphilis. There was no history that would indicate a previous attack of syphilis, except the fact that the patient had had four children born at term and dying within a few days of birth. The lesion began with a small, painful nodule on the left pinna of the nose which increased gradually. It was red, irregular, raised above the surrounding tissues, and covered with a slight crust and purulent secretion. The glands in the neck were slightly enlarged. Finsen light was first used, forty-six applications being made on alternate days, and later at longer intervals. The growth would disappear over the original site and increase on some nearby area, never healing entirely. Recognizing that the Finsen rays were not effecting a cure the Roentgen rays were tried, fifty-two applications being made. The result was the same as in the previous treatment. The case was then submitted to mercurial treatment by injections of corrosive sublimate, with immediate benefit, and complete cure after eight injections, no infiltration remaining behind. The light and *x*-ray treatments not only did no good, but seemed to hasten the spread of the lesion. The effects are quite different from those obtained in lupus.—*Giornale di Elettricita Medica.*

Ureteral Fistula After Gynecological Operations.—P. Sfameni says that it is considered a disgrace to have an ureteral fistula after a gynecological operation, and hence such cases are seldom reported. He believes that such fistulæ may not be the result of carelessness on the part of the operator, but the result of a persistence of the canal of Malpighi-Gärtner. He recites twenty-one cases in which the apparent fistula became cured spontaneously, and these he believes not to have been true ureteral fistulæ. In case of a cut ureter the urine should begin to flow through the fistula immediately after operation, whereas these cases showed the flow sometimes from two to thirty-nine days after the operation. In only a few cases was there an examination of the fluid, and in these it was found that it did not resemble the urine drawn from the bladder of the patient; it had a lower specific gravity, and contained no urea. The canal of Malpighi-Gärtner is the excretory duct of the Wolffian body, the primitive kidney. If this persisted in the adult, fluid might escape from this excretory duct as a result of the stimulation of the tissues at the healing of the operation. The orifice of the duct varies in its location, in some instances being quite near the vulva. The secretion would stop as soon as the irritation ended with the healing of the wound. Pain has been observed and a fluctuating tumor formed when the supposed fistula was closed. The author believes that the cases he reports are cases of persistence of the duct of Malpighi-Gärtner.—*Archivio di Ostetricia e Ginecologia.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

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ORIENTALISM.

IN the *Lancet* of June 23 appeared an article with the above title, from the pen of a well-known London ophthalmologist, Mr. H. Work Dodd, describing a clinical condition which would seem to be the result of a new, or at any rate an obscure disease.

The patient in question was a man, aged 47 years, who up to the year 1898, to outward appearance, enjoyed excellent health. He then developed ptosis of the right eyelid, followed shortly by ptosis and external strabismus on the left side. He was successfully operated upon, so far as the right eyelid was concerned, but in the following year was admitted into a hospital complaining of general weakness and vague alterations of sensation. During this time his general appearance was undergoing a change, although on careful examination nothing abnormal could be detected in any organ or system, and he was discharged from the hospital.

The curious phase of this case is that the man during a period of but a few years absolutely changed in appearance. When Mr. Dodd first saw him he was a finely developed, erect man of 5 feet 10¾ inches in height and weighed, without being at all obese, 228 lbs. He was an athlete of prominence and was the beau-ideal of vigorous, masculine, athletic manhood. He had plenty of hair, a long blond mustache, and was fair in appearance. Moreover, he was a cheerful, capable, quick-moving and intelligent man. At the present time he is smaller, stoops, is only 5 feet 8 inches in height, weighs 165 pounds, is weak, his hair has changed to mouse color, his mustache cannot grow hairs longer than a quarter of an inch and they are soft and sparse, his chin never needs a razor, his complexion is sallow, and his whole aspect is darker than before. In fact, his appearance has altered so completely that his fellow workmen have christened him "the Japanee." The man's mental characteristics seem to have altered quite as much as has his physical aspect. From being a hustling, vigorous individual, thoroughly endowed with the verve and go of the Anglo-Saxon race, he has become apathetic to a degree entirely in keeping with his Eastern appearance. He is now of the Tartar or Mongolian type, but saved from being definitely Mongolian in face by the tilt of his eyes, which is not upwards, and by their color, which is a dullish blue. His skin is soft, thin, and delicate like a woman's skin; it is normal in moisture, elasticity, and electrical resistance. The entire body is almost wholly hairless, the nails of the hands are normal, but those of the feet are brittle and broken. The majority of the organs and functions are normal and act normally, but the muscles generally are weak and flabby, especially those of the arms. Knee-jerks are present, equal, and not increased. Sexual desire and power are said to be completely lost. A complete blood examination showed no abnormality. The patient seems always sleepy, and the memory is somewhat defective.

It should be mentioned that the patient contracted syphilis some eighteen years ago, but, as Mr. Dodd points out, it must not be forgotten that the alterations in appearance began only with the obscure illness for which he was treated in 1899. The reporter of the case is driven to the conclusion that possibly changes have taken place in some important elaborating structure, testicular, thyroid, or elsewhere, and he notes that the thyroid gland cannot be felt while the testicles are smaller than usual, unequal in size, abnormally tender and soft, and indeed appear to be atrophied. The author quotes two cases of apparently similar nature, one of which came under his direct notice, and the other has been under the care of Dr. Henry Campbell. In one of these instances there was a doubtful, and in the other a definite, history of syphilis. He also relates the case of a man suffering from diabetes insipidus, who was under his care in hospital, who had the same appearance as the first patient, but he does not know whether any change had taken place, or whether he had been of this curious type originally. He also says that he is certain he has seen other cases of this type in men, but cannot call to mind seeing anything similar in women.

It may be noted as probably more than a coincidence that in the cases mentioned by Mr. Dodd, in which there were definite histories, syphilis had occurred, and therefore it is more or less reasonable to presume that this disease was the originating cause. However, the cases referred to do not seem to fall into any recognized class, and Mr. Dodd's request that others who have had greater opportunities than he has had will bring forward other cases, if complied with, may aid in clearing up what now seems to be a mystery.

THE PREDISPOSITION OF THE PULMONARY APICES TO TUBERCULOUS INFECTION.

BEFORE the bacterial character of tuberculosis was established no serious effort had been made to account for the peculiar liability which the apices of the lungs manifested towards the localization of this process. In accordance with the beliefs current at that time it was conveniently ascribed to a "predisposition," and as there was no way to disprove this assumption, the case rested. With the advance of pathological knowledge, the theory was proposed that a nontuberculous apical bronchitis was the forerunner of the more specific process, but it is now well known that these types of bronchitis are tuberculous in most instances from their inception. The development of bacteriology and the discovery of the tubercle bacillus led to investigations along entirely different lines, and as pulmonary tuberculosis

was assumed to be due to inhalation of the specific germ, the reason for the more frequent apical localization was believed to reside in the fact that the bronchi in the upper lobes of the lung were bifurcated in such a manner that their invasion by the bacillus was particularly easy. Many theories were built up on this basis, but a critical inspection shows that they lack uniformity, for it is now well known that no very constant anatomical differences exist in this respect between the apices and other portions of the lung.

But if we take up the physiological characteristics, decided differences can be made out, according to L. Hofbauer (*Zeitschrift für klinische Medizin*, vol. 59, No. 1), and these exist normally as well as pathologically. In the first place it is known that the function of the upper part of the lung differs from that of the lower. Although primarily concerned with the interchange of gaseous materials, not all portions of the organ are equally involved in the process, and the inferior segments of the lungs are much more completely aërated than the superior, owing to the action of both the intercostal muscles and the diaphragm. In addition to this there is also a lack of uniformity in the intrathoracic pressure as shown by actual experiment, and these two factors together exert a marked influence on the pulmonary circulation of both blood and lymph. According to Hofbauer, the intrathoracic pressure which reaches its maximum degree in the caudal portions of the lungs becomes very greatly lessened the nearer we approach the cranial segments, and in the apices there is very little change. The consequent diminished circulation in these parts interferes with the proper nourishment of the pulmonary parenchyma of this region and reduces the amount of resistance as compared with that in other portions of the lung.

It will be seen that this theory fits very well with any idea as to the manner of infection by the tubercle bacillus which one may be inclined to adopt, whether this be through the medium of the blood, the lymph, or the air, and although purely theoretical it seems confirmed curiously enough by the autopsy findings in a case recently reported by Birch-Hirschfeld. A woman contracted a pulmonary tuberculosis during the early part of her pregnancy and died at term as the result of an anthrax infection. The lower lobes of the lung were the site of an area of recent cheesy degeneration similar to what is ordinarily found in the upper portions of the organ, and the reason why the former was invaded may be traced to the insufficient aëration with its accompanying effect on the circulation of the part, due to the upward pressure of the diaphragm from the enlarged uterus. In other words we have reproduced in the lower an analogous condition to that ordinarily found in the upper lobes, and consequently a *locus minoris resistentiæ*.

"ONE-CHILD STERILITY."

We are not ordinarily accustomed to regard as sterile a union in which pregnancy has occurred once, and yet under certain circumstances the term can be very aptly thus applied. There are numerous instances in which the birth of a single child or possibly only a miscarriage has been succeeded by a condition of absolute sterility which persists throughout the remainder of married life. In the German medical literature there are frequent references to this condition, but among American writers it has hardly received the attention it deserves. Every practitioner is no doubt familiar with instances in which no further conception occurred during several years after the birth of the first child, although such an event may have been greatly desired. The physician is consulted as to whether the power of child bearing can be restored and the patient is usually advised to submit to a divulsion and curettage. Sometimes this is effectual, but more often it fails to produce the desired result. F. S. Mathews, writing in *Surgery, Gynecology, and Obstetrics* for May, 1906, gives the conclusions derived from some studies into the comparative frequency of this condition and its causes. Among one thousand gynecological dispensary cases there were eighty-two instances of "one-child sterility," in which the pregnancy terminated within the first two years after marriage and no further conception took place during the next three or more years. Among this number there were only seventy-five cases of absolute sterility. In one hundred consecutive gynecological cases in private practice, there were eighteen women sterile after three years of married life and fifteen sterile three or more years after one pregnancy.

It may be assumed that in the class of cases under discussion, the sterility is due to some condition in the female rather than in the male genital tract, and that it is not the result of a congenital factor. More likely the cause is something thing that took place during the pregnancy or the puerperium, and Mathews is inclined to lay the blame in the majority of instances to gonorrhea, which may supervene about the same time with pregnancy and is known to spread readily to the tubes. Even puerperal sepsis seems less likely to bring about sterility, as the resulting endometritis or salpingitis is frequently recovered from. Retroversion or flexion and subinvolution furnish another small percentage of cases, but the frequency of gonorrhea shows that in recommending treatment this factor must be carefully borne in mind. As Mathews truly says, it is "foolish to dilate the cervix and curette the uterus when the history points to occluded tubes." In view of the increased attention which the subject of sterility has been accorded by the profession, the variety here referred to is deserving of closer study. This means that more care than ever should be given to the pregnant woman if gonorrheal infection supervenes, and as this can hardly ever be eradicated during pregnancy itself, the treatment should be continued for some time after.

THE VALUE OF THE DIFFERENTIAL LEUCOCYTE COUNT.

The realization that the blood must necessarily come into intimate relation with every inflammatory process, no matter in what part of the body the latter might be situated, has led to the adoption of clinical methods by the aid of which certain changes can be detected in this medium and thus made use of in

the diagnosis of surgical conditions. An increase in the number of the white blood cells was at first taken as a criterion of the progress of hidden purulent processes, but in the course of time it was found that this sign was not always absolute, and the search was continued for some other and more certain evidence. It was then determined that the key to the situation lay in the study and recognition of the changes which took place in the relative number of the polynuclear leucocytes, and the differential blood count and its relation to the total leucocytosis is to-day the most valuable diagnostic and prognostic aid in acute surgical diseases that is furnished by any of the methods of blood examination.

In the practical application of this clinical method, the determination of the disproportion which exists between the leucocytosis and the percentage of polynuclear cells is the determinative factor. In order to have some standard by which this disproportion may be measured, C. L. Gibson (*Annals of Surgery*, April, 1906) proposes the adoption of a chart which may be tentatively recommended under the arbitrary designation of "standard." As a basis for constructing such a chart the resistance of the body against infection has been adopted, although this must be essentially purely an arbitrary factor. Gibson estimates that in inflammations which are well resisted, the polynuclear cells are increased approximately one degree for every thousand of the total leucocytosis above ten thousand. Starting with such a basis experimental charts have been worked out and the results apparently show that such a standard may form a very good working basis for the measurements which have been adopted. Briefly described, the chart is divided into units of one centimeter each. A horizontal base line is drawn as the starting point of the pathological leucocytosis of ten thousand on the left hand side, while the right hand side of the base line corresponds with the index of 75 per cent. polynuclear cells, the limit more or less arbitrarily chosen. Variations in these proportions are noted at the proper level on the polynuclear side of the chart, and the vertical distance between the two points will denote the disproportion between the two counts. Such a chart would seem useful in comparing examinations made from day to day. From computations based on a larger number of observations, some more definite standard may perhaps be adopted, but the main idea as suggested by Gibson is certainly worthy of attention.

Sudden Death Following the Injection of Horse Serum.

One of the serious objections which has been urged against the use of diphtheria antitoxin has been the apparently fatal character of the latter in certain, fortunately isolated and uncommon, instances. The reason for this effect has never been explained, although attempts to seek a cause have been numerous. The latest contribution to the subject is a paper by M. J. Rosenau and J. F. Anderson, in Bulletin No. 26 of the Hygienic Laboratory of the Marine Hospital Service for April, 1906, in which are noted the results of their observations on guinea pigs which have been subjected to treatment with horse-serum. It was found that both the normal and the antitoxic serum was practically harmless for normal guinea pigs, but was poisonous to those animals which had previously been injected with this substance, the period between the two injections being about ten days. The first injection, therefore, seems to render the animal susceptible, and when the second injection is made there follow respiratory embarrassment, paralysis, convulsions, and death. The poisonous principle in horse-serum appears to act upon the respiratory centers, and the heart continues to beat long after the breathing stops. The toxic action here referred to seems to bear no relation to diphtheria, for the guinea pigs cannot be rendered susceptible by previous infection with the *Bacillus diphtheriæ* or by previous injections with diphtheria toxin. The writers are convinced, however, that guinea pigs first injected with diphtheria toxin plus horse-serum are more sensitive to subsequent injections of horse-serum than are guinea pigs sensitized with a first injection of horse-serum alone. Diphtheria antitoxin therefore seems to play no part in this poisonous action, and is itself harmless. In applying the results of their animal experiments to the human species, the explanation offered by the writers is not quite so clear. It seems probable, however, that man may in certain instances be rendered similarly sensitive to the injection of a strange proteid, and that this explanation must be considered as well as the status lymphaticus, which has heretofore been assigned as the cause of sudden death following the injection of horse-serum.

Nursing by the Tuberculous Mother.

Investigations in considerable number have been made with reference to the presence of the tubercle bacillus in the milk of animals, but in only a few instances has the attempt been made to demonstrate the bacillus in the mammary secretion of the human species during the period of lactation. With the idea that this knowledge might prove of value in the etiology of infantile tuberculosis, O. Füster was led to make an investigation which, although not very extensive, afforded results fairly uniform in character. These, as detailed in an article in the *Wiener klinische Wochenschrift*, No. 20, 1906, show quite clearly that in the dissemination of tuberculosis the milk of an infected mother is not apparently an important factor. Füster examined the milk and colostrum in a number of undoubted cases of maternal tuberculosis by microscopic methods and also injected some of the suspected material into guinea pigs. The results were practically negative, and in only two cases were any organic changes noted in the animals and these were too indefinite to warrant their being attributed to a tuberculous process. These observations, together with similar ones made by certain other writers, seem to show that the direct transmission of the disease from mother to infant by this means is quite improbable. What, then, is the danger connected with an infant's nursing a tuberculous mother? The risk, it appears, comes rather from the necessarily intimate contact to which the child is subjected with the infected mother and her environment, and this is what contraindicates breast feeding in such cases. But when the tuberculous process is quiescent, if not actually arrested, in the mother, and the physical and clinical signs show no advancement during pregnancy, and the sputum remains free from tubercle bacilli, then, Füster claims, breast feeding may be continued without exposing the child to the danger of becoming itself tuberculous.

News of the Week.

Public Health and Marine Hospital Service.—An examination of candidates for the position of assistant surgeon in the Public Health and Marine Hospital Service will be held at Washington, D. C., Monday, August 6, 1906. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery, and hygiene. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars; passed assistant surgeons, two thousand dollars, and surgeons, twenty-five hundred dollars a year. When quarters are not provided commutation at the rate of thirty, forty, and fifty dollars a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, the Surgeon-General, Public Health and Marine Hospital Service, Washington, D. C., should be addressed.

Cholera at Manila.—The efficacy of the methods employed by the sanitarians in Manila is shown by the prompt fall in the morbidity since the first outbreak of cholera in that city a short time ago. During the week ending July 4 there were 116 cases and 99 deaths from the disease, but since then the daily number of cases has diminished almost one-half. The victims have been almost entirely among the natives, although several deaths among the white population have been reported. The chief difficulty in controlling the situation consists in the opposition offered by the natives, who fear the health officials and endeavor to conceal cases of the disease.

Yellow Fever at New Orleans.—It is asserted that the case of yellow fever recently reported from New Orleans has proven itself to be typhoid fever. An elaborate system of houseboat quarantine has been established, whereby fruit steamers are enabled to get their cargoes ashore without delay. No members of the sea-going crew are allowed to land at New Orleans, their places being taken by a special unloading crew, which boards the vessel from a houseboat, on which the sea-going crew remain until picked up again on the outward trip. Only the captain of the vessel is allowed to go on shore at New Orleans, and then only during the daytime. The steamers are fumigated with sulphur and pyrethrum four times on each round trip.

Deafness and Blindness in the United States.—A special report on the blind and deaf of the country has been issued by the Census Office under the direction of Dr. Alexander Graham Bell. The total number of blind persons in the United States in 1900 was at least 64,763, of whom 35,645 were totally blind. Of this number 37,054 were males and 27,709 females. The blindness was congenital in about one-tenth of the cases, and developed after the age of twenty years in 65 per cent. The native born whites suffer less from blindness than do negroes and the foreign born. In about 5 per cent. of the cases reported, the parents of the blind were cousins. Of the blind whose parents were so related, 25 per cent. were congenitally blind, while among the blind whose parents were not cousins the proportion of cengenitally blind was only 6.8 per cent. Of the blind at least ten years of age 20 per cent. were engaged in some gainful occupation. Deafness is more common in the northern part of the United States than in the South, and there are more deaf males than females. The total number of deaf is given as 89,287, of whom 37,426 were totally deaf and 51,861 partially deaf. From the latter class, however, are eliminated those merely "hard of hearing." Of the totally deaf 52.5 per cent. were males and 91 per cent. were deaf from childhood (under 20 years of age) and 36 per cent. from birth. Of the 89,287 persons reported as deaf, 55,501 were able to speak well, 9,417 imperfectly, and the remainder not at all.

Tuberculosis in France.—According to a report received a tthe Department of Commerce and Labor, the yearly deaths from tuberculosis in France number 150,000, representing a death rate of 39 per 10,000 inhabitants. The statistics obtained by the French authorities show that the mortality from this cause increases in almost regular proportion to the density of population. In Paris, for example, the ratio of deaths from tuberculosis is 45.2; in cities of 100,000 to 492,000 population, 34.4; in cities of 20,000 to 30,000 inhabitants, 30.8; in cities of 5,000 to 10,000, 23.4, and in cities of 1,000 to 5,000, 20.4. In the course of an inquiry into the effect of various occupations in predisposing to the disease, it was found that those vocations bringing the worker into contact with dust were especially dangerous. Laundry workers were found to be the most seriously affected, however, their mortality from tuberculosis in some regions being 75 per cent. Contact with the soiled linen is supposed to be the reason for this appalling morbidity. It is also stated that 240,000 out of 400,000 bakers in France are tuberculous.

Site for Hospital for Criminal Insane.—The commission appointed by Governor Pennypacker, of Pennsylvania, for the selection of a site and the erection of a State Hospital for the Criminal Insane, has secured from the Delaware and Hudson Railroad Co., as a gift, 450 acres of land at Fairview, high in the mountains of Wayne County. The State Legislature has appropriated $200,000 for the erection of a building, including $10,000 for a site. The new hospital is to have accommodations for from 800 to 1,000 patients, and the total cost will be about $1,000,000.

Vital Statistics of Philadelphia.—As a result of the intense heat, the number of deaths in the city of Philadelphia for the week ended July 7 was the highest in five years, namely 651. Of this number 277 occurred in infants under the age of five years, while 17 were due to sunstroke. Diarrhea and enteritis alone caused one hundred and forty-eight deaths in children under the age of two years, and

nine in children above this age. Pulmonary tuberculosis is charged with fifty-four deaths, Bright's disease with forty-nine, congenital debility with twenty-five (not including fourteen due to marasmus), whooping-cough and heart disease each with twenty-four, apoplexy with twenty-two.

A Sanitary Commission for Madrid.—A hygienic commission has been formed in Madrid for the purpose of instituting radical measures for effecting reforms in the sanitation of the city. Investigation of the slums has revealed conditions in urgent need of amelioration; for example, four hundred and thirty-eight tenement houses were found to be occupied by 52,521 persons, with only one lavatory to each house and only one hand basin to each 100 tenants. Madrid's death rate is 28 per 1,000, and in 1905 3,192 children died under the age of one year.

Examinations for Meat Inspectors.—The Civil Service Commission has announced an examination to be held for the purpose of obtaining sufficient eligibles from which to organize the force of meat inspectors, which was authorized by the Agricultural Appropriation Bill passed by Congress recently. The examination will be held July 21, and the commission hopes to secure an eligibility list of 400. The candidates are not required to be veterinarians, but they must possess some practical experience in the handling of meat and meat products. They must be between 21 and 50 years old. The salaries will range from $1,000 to $3,000, according to the length of service and the experience of the inspectors.

Award Against a Dental Company.—An opinion of the Appellate Court confirms the decision of the Superior Court in a damage suit brought against a dental firm of Los Angeles, Cal. The plaintiff claimed damages because in having seven teeth extracted, after six had been successfully removed, the seventh slipped from the forceps and was drawn into the lung. She was awarded the sum of $2,400.

Fourth of July Casualties.—On July 5 nearly 500 accidents and one death, caused by the Fourth of July celebration, had been reported to the police of Manhattan as occurring in this city alone. Reports from all over the country show a death roll of at least 50, and last year's record of over 2,500 serious injuries will probably be equaled.

Red Cross Conference at Geneva.—The international Red Cross conference which has been held at Geneva, Switzerland, came to a close on July 6, and it is stated that the desired changes in the international Red Cross agreements were made without serious objection by any of the powers taking part.

Dr. J. C. Corbus has resigned as superintendent of the Illinois Eastern Hospital for the Insane at Kankaee, and the resignation was accepted formally by the Board of Trustees July 6, at the regular meeting at that institution. His successor probably will be appointed in a few days. Dr. Corbus has been superintendent of the hospital for nine years, having been appointed by Governor Tanner.

Dr. J. A. Egan, Secretary of the Illinois State Board of Health, has been appointed a member of the American Committee of the Fourteenth International Congress of Hygiene and Demography.

New Hospital in South Chicago.—Plans for a new hospital two stories in height, 64 by 40 feet, and to cost approximately $10,000, have been prepared.

Sanitary Matters on the Isthmus.—If the United States succeeds in making as great an improvement over the French company in the actual digging of the Panama Canal as it has in sanitary matters, some persons now alive may celebrate its opening. The *Mexican Investor* makes the following interesting comparison: In 1882, the second year of French work on the canal, the death rate was 112 per 1,000. In August, 1905, under American sanitary rule, there were but eight deaths among six times as many men, the mortality rate being something less than one death in every thousand, or roughly, twelve per thousand per year, which means that of every thousand men in the canal zone the lives of an even hundred are being saved every year. In August there were about 12,000 men there.—*The Globe.*

Consolidation of Medical Journals in Los Angeles.—Announcement is made that the *California Medical and Surgical Reporter* has purchased the *Los Angeles Medical Journal,* and that the publication of the latter as a separate journal will cease.

West Virginia State Medical Association.—At the thirty-ninth annual meeting of this society held at Webster Springs on June 20 to 22 the following officers were elected: *President,* Dr. William W. Golden, Elkins; *First Vice-President,* Dr. V. T. Churchman, Charleston; *Second Vice-President,* Dr. M. F. Wright, Burlington; *Third Vice-President,* Dr. C. T. Smith, Tunnelton; *Secretary,* Dr. T. W. Moore, Huntington; *Treasurer,* Dr. T. L. Barber, Charleston. *Councillors*: First District, Dr. H. P. Linsz, Wheeling; Second District, Dr. R. H. Powell, Grafton; Third District, Dr. P. A. Haley, Charleston; Fourth District, Dr. W. S. Link, Parkersburg; Fifth District, Dr. C. R. Enslow, Huntington, and Dr. J. W. Preston, Keystone. Huntington was selected for the next place of meeting.

Queens Medical Building in the University grounds, Kingston, Ont., was destroyed by fire on July 4. The fire is supposed to have started from an oil stove. The loss is estimated at nearly $100,000.

Tazewell County (Va.) Medical Association.—At the regular meeting of this society, held at Tazewell on June 28, the following officers were elected: *President,* Dr. Isaac Pierce; *Vice-Presidents,* Drs. George M. Walker and L. J. Stump; *Secretary,* Dr. C. T. St. Clair; *Treasurer,* Dr. W. I. Painter.

Wisconsin State Medical Society.—At the sixtieth annual meeting of the society, held at Milwaukee on June 29, Superior was chosen as the next place of meeting, and the following officers were elected: *President,* Dr. L. H. Pelton, Waupaca; *First Vice-President,* Dr. A. J. Burgess, Milwaukee; *Second Vice-President,* Dr. W. E. Ground, Superior; *Third Vice-President,* Dr. W. J. Pinkerton, Prairie du Chien; *Secretary,* Dr. Charles S. Sheldon, Madison; *Treasurer,* Dr. S. S. Hall, Ripon.

Obituary Notes.—Dr. Palmer C. Cole of this city died suddenly on July 4, at the age of seventy-one years. He was graduated from Harvard Medical College in 1858, and served as surgeon during the Civil War. He was the first president of the New York Harvard Alumni Association.

Dr. G. W. Birch of Stanton, Conn., died on July 4, at the age of sixty-five years.

Dr. Charles Lester Spaulding of Kansas City, died suddenly on June 24 at the age of thirty-seven years. He was a graduate of Williams College and had been practising in Kansas City for some years.

Dr. J. W. Cline of Dayton, O., died on July 3 at the age of seventy-three years. Dr. Cline was long prominent as a practitioner, but retired from active work some years ago.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITAL SUNDAY—MITRAL STENOSIS IN PREGNANCY—TUBERCULOUS PORK—PRESERVED FOODS—MEDICAL REPORTS—A PARASITOLOGICAL LABORATORY—DRUGS AND FATIGUE—LIVINGSTONE COLLEGE—OBITUARY NOTES.

LONDON, June 22, 1906.

THE week opened with Hospital Sunday. This collection began in 1872, under the presidency of the Lord Mayor, and each year since his successor has acted as president. At St. Paul's the preacher urged the necessity of systematic support, and said year by year the aid of the State seemed to draw nearer. It was not a question of conscience as to how to give alms. It was the moral self-respect of wealthy London that was involved. There was a large congregation at the afternoon service, the Lord Mayor and Sheriffs attending in state, and as it was "judges' Sunday" also, being the first after Trinity, the bench was fully represented.

The Bishop of London preached at Marylebone and said he would deeply regret to see the hospitals put on the rates. It would be a sad day for London, for when contributions were enforced the love of hospital work would go.

It is not possible to estimate the result of the effort at present, as the moneys only reach the Mansion House very slowly. In fact the various persons would do well to forward their collections more promptly than they have been in the habit of doing. There was a good collection among city men and there was an effort to reach those who usually pass the week-end at a distance.

Mitral Stenosis and Pregnancy was the subject of a paper at the Medico-Chirurgical by Drs. H. French and H. T. Hicks. They found that when heart failure developed it was not with the first pregnancy—often only after several. The treatment was not to be modified by the pregnancy. It was not right to forbid marriage to all women who had mitral stenosis. Such a patient, whether married or single, was not likely to reach old age. But after twenty, with good compensation pregnancy was not so likely to accelerate heart failure, as recent text-books stated. Sir D. Duckworth thought marriage unwise. The probability of early breakdown was greater in the poor. The plethora of pregnancy threw an extra strain on the heart. Dr. Herman thought the danger had been exaggerated; with good compensation there was only slight risk, and that about the seventh month. A subsequent speaker advocated rapid delivery (forceps and chloroform) in threatening cases; another held that compensation might in some cases be increased through stenosis.

Dr. Poynter appealed to statistics to show that the frequency of heart disease through rheumatism was the same in the two sexes. He thought that perhaps in pregnancy there was an increase. Dr. Bonney mentioned three cases of malignant endocarditis occurring in puerperal sepsis and a fourth in which a pregnant woman was attacked. Dr. W. S. Griffith said delivery might be accomplished in severe cases of stenosis and yet death occur during the puerperium. The risk, though there, had been exaggerated. In 4,171 recent deliveries in hospital there were 28 cases of heart disease. Of these 2 were aortic and both did well; 12 were mitral stenosis and 1 of them died; 14 were mitral regurgitation and 2 of these died.

Dr. Buchanan's report to the Local Government Board in reference to tuberculosis affecting pigs was issued last week as a Blue-book. It deals with the liability of pigs to tuberculosis, the origin of the pigs sold in London, and the methods of inspection at home and abroad. Dr. Buchanan says that "at present there seems to be no warrant for regarding tuberculous matter derived from the pig as comparatively harmless to man, merely because it comes from the pig. That any person who takes tuberculous matter of animal origin (containing living bacilli, etc.) into the body along with food, thereby incurs some risk of acquiring tuberculous disease is an inference which is generally drawn and rests upon a considerable mass of evidence, experimental and clinical." Dr. Buchanan thinks, however, that it is not possible to form an opinion as to the extent to which meat from tuberculous animals is responsible for the human disease. Relatively to other causes he thinks it is no doubt small.

The Royal Commission of 1898 held that in this country the risk had been exaggerated. The incompleteness and lack of uniformity of measures adopted by our public authorities for preventing the importation or sale of diseased meat has often been exposed. Dr. Buchanan says there would be many advantages in extending the Dutch and Danish system. The question of so dealing with diseased meat as to prohibit its use as food is a delicate one. Dr. Buchanan says suitable treatment (cooking or sterilizing) should enable a large proportion of condemned meat (including that condemned as tuberculous), to be "used as food," although he admits it would have to be sold at a low price. To say the least this is not appetizing reading, and some officers of health have expressed the same view.

Another report attracting attention in reference to imported foods is that of the health officer for the port of London (Dr. Herbert Williams). He says that decomposed food will cause bulging of the tins ("blowing" as it is called) in most cases, but if the liberated gas is not sufficient to cause bulging it requires experience to detect the change. "Blown tins" are apparent to anyone, and when opened the contents are offensive. Another medical officer reports that tin and lead on rare occasions have been detected by chemical examination. The question of diseased meat being employed has attracted the attention of several medical officers of health and it is obvious that the detection of such frauds after the arrival of the tins in this country must be extremely difficult. In fact at present bacteriologists or chemists are alike unable to protect the public, and rigid inspection at the place of canning affords the best security.

The Royal Institute of Public Health inaugurated a parasitological department on Wednesday. Dr. Smith (Mayor of Holborn) presided and said the new departure had been created for research work in tracing diseases which may be transmitted by insects and animals to man. Such work he held would be of immense value. The Institute was founded in 1886 for the purpose of obtaining skilled and trained men for public health positions. The Institute could boast of laboratories equal to any in London, and in view of recent advances in our knowledge of the solution of diseases in animals and man it had been decided to establish this new department. Sir Patrick Manson spoke of the discoveries as to mosquitos and other parasites as transmitters of disease. The old theory was that dirt was the cause of diseases. Now we can show the particular element in the dirt which is responsible. In developing this field of research the institute will do much for medical science and it is only on such lines that disease will be effectually combated.

The Croonian Lectures at the Royal College of Physicians this June were entrusted to Dr. W. H. R. Rivers, who took for his subject the "Action of Drugs on Fatigue." He gave some account of experiments by previous observers before putting forth the results of his own investigations. He pointed out the distinction between the sensation of fatigue and the process of exhaustion. Hard mental work often gives rise to fatigue, and a drug which removes or diminishes that feeling does not necessarily relieve exhaustion. After a dose of caffeine there is an increase in the force of muscular contractions lasting for about an hour. In 1893 kola was held up as a remedy for fatigue, and there seemed to be an increase in the amount of work that could easily be done under its influence.

Caffeine is a stimulant of the nervous centers rather than of muscles, and after the initial increase is followed by a lowering of activity, as the essential oils in tea also do. Indeed one observer concludes that these drugs are in reality acceleratives of fatigue, reducing the total output of work, although they produce a temporary relief or exhileration. Tea causes an immediate but brief increase of the working capacity. As fatigue increases there is also an increased output of central energy, and this has to be reckoned with. So, too, have psychical influences such as interest in an experiment. Training is necessary before undertaking experiments. He had himself given up tea and coffee in order to carry out the tests. He considered, however, that doing so lowered his natural energy, and he thought that a sudden discontinuance of a daily practice must have some effect on the vital processes.

Livingstone College was established to give a training in hygiene and elementary medicine and surgery to missionaries. Mr. Cantlie spoke at the recent commemoration and declared it was doing a good work, for the course of instruction was good of its kind and well adapted to be useful to missionaries going abroad. He thought the great missionary societies ought to take the matter up, for it was wrong to send men out with no knowledge of medicine. I dare say he would agree with me that a full training would be very much better and that at every mission station there ought to be a qualified doctor. Some of the societies are establishing medical missions as a part of their regular work, but in other cases the want of medical aid by the missionaries themselves, as well as the people among whom they work, is felt to be a crying one.

Deputy Surgeon-General T. Ringer, who died in his eightieth year, entered the Indian Medical Service during the mutiny and was present at Lucknow and Delhi, for which he received a medal and clasp. He was a keen naturalist and archeologist. He retired in 1881.

On Tuesday night Dr. Duke, one of the resident staff at University College Hospital, met his death by falling down

the lift. He had gone to an upper floor to see a patient, and on returning seems to have thought the lift remained on that level and stepping in fell to the basement.

On Wednesday Lieutenant F. M. G. Tulloch, R.A.M.C., son of Surgeon-General Tulloch, died at the early age of twenty-seven. You will remember that he went to Uganda to investigate sleeping-sickness, and, as I reported to you, he contracted the disease. He took the double qualification of the London Colleges in 1901 and served as a civil surgeon in South Africa in 1902-3. On his return he was gazetted lieutenant in the Royal Army Medical Corps as from August, 1903. Towards the close of 1904 he was sent, under the Colonial Office, to Entibbe. When he was smitten with the disease he went to investigate he was invalided home and some hopes were entertained, but the progress was unusually rapid, and he succumbed on Wednesday, the 20th inst.

The death is announced of Dr. T. E. Hayward, M.B. London, F.R.C.S., Medical Officer of Health for Haydock, where he passed most of his professional life and where he achieved his high reputation as a statistician. He brought out life tables for two decades which were regarded as most valuable. His paper on a mode of constructing abbreviated tables for public health comparative statistics is quoted as the most authoritative, but it had been preceded by other contributions of scarcely less importance. In other work more closely related to the daily work of the practitioner he was also energetic, and his services were greatly esteemed in the community in which he resided.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

BRITISH MEDICAL ASSOCIATION—NEW HOSPITAL FOR TORONTO—INCREASE IN CANADIAN HOSPITALS—CRUSADE AGAINST PATENT MEDICINES—CANADIAN AND ONTARIO MEDICAL ASSOCIATIONS.

The local arrangements for the coming meeting of the British Medical Association at Toronto, August 21 to 25, are now about completed. It is quite evident that a large attendance will be recorded. More than 200 members, resident in the British Isles, have already reserved accommodations, and from the inquiries which have been made from every part of the American continent it is expected that the coming meeting will be the largest ever held in Canada. The local committees have been actively at work for several months, and strenuous efforts are being made to have all details carefully worked out. The association will be convened under thirteen sections, which will meet daily, from 9.30 to 1 o'clock. The afternoons and evenings will be devoted to general meetings, public addresses, and various entertainments. There will be three public addresses delivered, the orators being Sir James Barr, Dr. W. S. A. Griffith and Sir Victor Horsley. It is intended that clinics will be held each morning at 8.30, when interesting cases will be reviewed by some of the prominent physicians and surgeons in attendance. There is a pleasing indication of a large attendance of visitors from the American Medical Association. None will receive a more cordial welcome.

Toronto is likely to have a new hospital that will be thoroughly modern in every detail, and which will become an important addition to the clinical facilities in connection with the medical department of the Provincial University. The management is to be vested in a board of twenty-five trustees appointed by the Ontario Government, the University Council, the benefactors, and the City Council. This board has just been organized, and attention is now being given to secure suggestions in regard to the best hospital architecture in America and Europe. The site for the new hospital has been selected on University avenue convenient to the medical college.

The present Government of Ontario has been in power only a little over one year, but during that period has inaugurated several schemes for promoting not only the success of educational institutions but also has materially aided the hospitals and charities of the Province. There are now in Ontario over sixty public hospitals receiving Government aid in accordance with the number of patients treated. There are now nine institutions supported by the Government for the care and treatment of mental defectives. A special hospital for epileptics, to be conducted as a colony, located on a large farm, has just been opened near Woodstock in Oxford County. Nearly every county in Ontario has now a public hospital, and the scheme of supplementing local philanthropic efforts by generous aid from the provincial Government has resulted in the development of a hospital spirit that is most acceptable to the medical profession in Ontario. The other portions of Canada are also making commendable progress in the establishment of hospitals. The number of public hospitals in the other Canadian provinces now are: Quebec, 22; New Brunswick, 6; Nova Scotia, 3; Prince Edward Island, 2; Manitoba, 11; British Columbia, 12; Alberta, 5, and Saskatchewan, 2.

A vigorous campaign was inaugurated recently in Canada, having for its object the correction of some of the many evils of the patent medicine business. In both the Dominion and the Provincial Parliaments bills have been introduced compelling all engaged in the manufacture of proprietary medicines to publish the correct formula of each prescription in distinct and legible form on the label of each package, also compelling all manufacturers of patent medicines to have their products regularly analyzed by the Provincial Boards of Health. The public would in this way be protected and would be able to have definite and reliable information in regard to the ingredients of all proprietary medicines. Needless to say the opposition to these bills was most determined by the organized trade, backed up by local newspapers, who derive a large annual income for advertising and encouraging the sale of patent nostrums. In spite of this, however, the hope is well founded that very soon stringent restrictions will guard the sale of patent medicines in Canada.

On account of the meeting of the British Medical Association at Toronto in August the proceedings of both the Canadian and Ontario medical associations will be confined to executive work. Each of these organizations will convene at Toronto on the day previous to the meeting of the British Medical Association. At the meeting of the Canadian association a new constitution and by-laws will be presented as a report of the special committee on reorganization appointed at Halifax last year. The meeting of the Canadian Medical Association will be on the afternoon of August 20, and the meeting of the Ontario Medical Association on the evening of the same day.

Progress of Medical Science.

Boston Medical and Surgical Journal, July 5, 1906.

The Heart in the Puerperium.—H. Jackson reports two cases. The first one was apparently one of typhoid fever in the later stages of the puerperium, the heart action being rapid and feeble, suggesting an acute cardiac infection either muscular or valvular. The patient recovered. The second case was seen at the third month of a first pregnancy, the patient being a young woman of twenty-five years Two months later she complained of overaction of the heart. Two months later still she was seen in an attack of rapid, tumultuous heart action, it being impossible to determine the rate. Diagnosis was made of hypertrophy with tachycardia from overstrain. Rest in bed and proper remedies were ordered and in a short time she seemed as well as ever. She passed through her delivery in due time and without untoward incident. On the eighth day the tachycardia returned and was partially relieved. Soon a friction sound developed at the right base with an enlarged and pulsating liver. Toward the last a systolic murmur was heard over the latter, suggesting a marked tricuspid regurgitation evidently dependent on sudden dilatation of the heart. She died about four weeks after delivery. Sudden dyspnea at the close suggested pulmonary embolism. The case, therefore, was one without septic infection, but one of acute and fatal dilatation without demonstrable cause, except the effect of labor in a heart not previously absolutely sound, though no valvular disease had been detected at any of the numerous early examinations.

New York Medical Journal, July 30, 1906.

Thumb Sucking.—G. B. Webb employs the following preventive device. In a thin rubber ball of appropriate size an oval hole is cut to loosely fit the wrist, and the surface ventilated by very numerous punches with a stable harness punch. A cheesecloth bag of ample size is attached by stitches to the oval hole, and a tape run in and out of the cloth at this aperture, which can be gently tied at the wrist. A woolen mitten can be worn within this if required for cold weather. Several sizes have to be made at intervals of two months, to allow for growth. For a half hour night and morning these are removed and the child is taught gradually to pat-a-cake and play with its own hands. After four months the child will be completely broken of the habit, but still must wear the balls at night as a precautionary measure. The advantages of such a device are that the child can exercise and develop all its hand and

forearm muscles. It will also be of service with nail-biters.

Technique of Intramuscular Injections for Syphilis.—W. S. Gottheil describes this method in considerable detail. He reserves the use of soluble mercurials for those rare cases in which the luetic process threatens immediate damage to or destruction of important tissues or vital organs. This method, while efficacious, is painful, must be frequently repeated, and is often accompanied by salivation and gastroenteric troubles. The use of insoluble compounds establishes, so to speak, a medicinal depot in the tissues. The insoluble compound is slowly converted into a soluble one, and is gradually absorbed. The method is practically painless. After experimenting with various salts of mercury and various menstrua, he has adopted the salicylate suspended in liquid vaseline in the proportion of 10 per cent. by weight. An emulsion is formed, which flows easily through the needle. Ten drops equal one grain of the drug. The syringe employed should be used for no other purpose, and should be much heavier than the ordinary hypodermic. The needle should be about one and a half inches long. The needle ordinarily used for antitoxin injections answers every purpose. The fluid should be sterilized and kept in separate bottles, which can be placed in warm water when needed for use. The skin should be scrubbed with green soap and alcohol. The gluteal muscles should be used as the site of injection, which should be the center of the gluteal mass, about midway between the intergluteal fold and along the inner third of the region bounded by the fold and perpendicularly through the great trochanter on either side. The patient should stand erect during the injection. Just before the latter is made, the area selected (covered with sterile cotton after above-described cleansing) is bared and washed with ether. The needle is now quickly inserted for its entire length and the barrel contents discharged. The syringe is detached from the needle and the suspension-filled proximal end of the latter is carefully watched for a few seconds. If the point of the needle happens to be in a vein, the suspension will very slowly begin to well out of it; and if the vessel is a larger one, it will be followed by a drop of blood. The needle must then be withdrawn, and another puncture made, or the injection postponed. The precaution, however, must never be neglected. Oozing of blood after the injection is completed, showing that a vein has been traversed by the needle, does no harm at all. The implantation being found safe, the syringe is reapplied to the needle and the desired amount of suspension is injected. This should be done very slowly. The needle is then withdrawn as quickly as it was introduced, and the cutaneous orifice immeately closed with a pledget of cotton. A small piece of sterile zinc oxide plaster is then applied, to remain in place for a day, and the injection is completed.

Ocular Eczema in Children.—F. Krauss says that ocular eczema is a disease common in childhood, forming 21 per cent. of all eye diseases in children under sixteen years. It is most common at the age of two years, becoming less frequent as the age advances. It is endemic, but especially prevalent during the months of May, June, and April, in the order named. Treatment is very important in modifying its progress and tendency to relapse, and should comprise general treatment, with attention to diet and hygiene, as well as local treatment for the eye; the severer and stubborn cases quickly improve when rest in bed is required of the patient. The medicinal combinations which have given the author the greatest satisfaction are the following: For a tonic and alterative, syrups of iron iodide, hydriodic acid and hypophosphites; for a local wash, boric acid, cocaine, adrenalin, and distilled water; for eczema of the lids, boric acid in vaseline. When the cornea even at its periphery is attacked, it is advisable to put the ciliary body at rest at once by the use of a mydriatic, preferably atropine. The yellow mercuric oxide ointment, one grain to two drachms of petrolatum, introduced into the eye at night, causes rapid absorption of the phlyctenulæ. It should not be used in the earlier part of the disease, when the corneal lesion has reached the deeper layers, or when the eye is easily irritated. It does most good after the apex of the phlyctenulæ has ulcerated. Dark glasses should always be worn, on account of the photophobia. After the disease has passed the acute stage, insufflations of calomel or iodoform (of which the author prefers the former) into the ulcer act very beneficently. Ethyl morphine muriate solutions (4 to 15 per cent.) are of some benefit in aiding the disappearance of the resulting scar. The ulcer may require cauterization, but the resulting scar is apt to become, in these cases, quite opaque.

Fever in Childbed Due to Other Causes than Sepsis.—A. S. Wilner would divide the causes of this condition into psychical and physical. The former includes joy, fear, grief, fright, annoyance, too many visitors, etc. Of the latter, the most common is constipation. Other causes are overfeeding, improper diet, mammary gland disturbances, including nipple affections, absorption from wounds of the genital tract, retention of urine, and intercurrent diseases. Of these latter, malaria is the most common, but we may also have typhoid and scarlet fevers, diphtherias, tuberculosis, measles, smallpox, and pneumonia. The phenomena of labor may stir up old pelvic disorders. Of all these causes, each of which suggests its own treatment, the most common are constipation, overfeeding, and strong emotion. When these can be excluded, we must look, says the author, for some omission or commission with regard to asepsis. The article closes with some pertinent suggestions as to the conduct of the accoucheur.

Journal of the American Medical Association, July 7, 1906.

The Relation of Nerve Impulse to Cutaneous Inflammation.—E. L. McEwen discusses the problem of whether or not the process of inflammation can be produced by nerve impulse alone. He analyzes the different stages of the process and concludes that direct motor impulse can produce dilatation of the blood-vessels and secretion of fluid by the endothelium. It is possible that it may influence indirectly the slowing of the blood stream, the emigration of the leucocytes, and the readiness of the passage of the latter through the vessel walls. Motor impulse has no direct relation to the migration of leucocytes and proliferative tissue changes, and hence is not alone sufficient to produce inflammation. The factor necessary to supplement nerve action must embody the requirements of chemotaxis and the power of attracting leucocytes. This is found in external irritation. The four sources of irritation, chemical, mechanical, thermal, and actinic, by an analysis, may be narrowed down to one, namely, chemical. Chemical irritation has all the essentials for producing the full inflammation complex, initiating nerve action and supplying the other necessary factors. Products of protoplasmic degeneration or destruction, whether from trauma, perverted trophism, or disturbance of cellular nutrition, may be toxic to living cells and so furnish the needed chemical irritant for starting inflammation. This is probably the *modus operandi* in herpes. A purely reflex dermatitis is an impossibility, as every inflammatory skin lesion must have, from the nature of the pathological process, the factor of local toxic irritation in its etiology.

Lesions Predisposing to Cancer.—M. B. Hutchins enumerates the various skin lesions which may produce cancer, such as the irregular scaly, crusty, horny patches seen on certain skins, fissures, lupus, moles, *x*-ray ulcers, irritation from jagged tooth, also cases of so-called benign tumors and cysts. He urges the importance of attention to these conditions in time to prevent their malignant development, and gives brief reports of a number of illustrative cases.

The Reflexes of Dentition.—C. H. Dunn, while admitting the reflex element in certain of the symptoms credited to dentition, such as fever, aural disturbances, etc., maintains that the commonest symptoms seen in dentition are not reflex, but are due to pain. They may arise either from the tooth cutting the gum or from irritation of the root of the tooth. The majority of the symptoms attributed to a reflex irritation from the tooth, such as the skin exanthems, the ocular disturbances, and the respiratory disturbances, are probably mere coincidence. As to the digestive disorders considered as dental reflexes, he thinks a reflex causation is possible. Such nervous disturbances as muscular twitchings, tetany, and even convulsions, occurring during the eruption of the teeth and usually considered as reflex, he would hesitate positively to assign this cause. While we cannot deny that they may possibly be due to teething, he holds that there is little positive clinical evidence in favor of it.

Rocky Mountain Spotted Fever.—H. T. Ricketts, after a fairly exhaustive search of the blood in stained and unstained specimens in two cases, was unable to identify a parasite positively either within or without the erythrocytes. Similarly, cultures of the blood, made in bouillon and on agar plates of differing reactions, gave negative results, with one exception. In the one exception mentioned, a staphylococcus grew in a flask of bouillon which had been inoculated with from 3 to 5

c.c. of blood drawn from one patient. The results of experiments with rabbits and guinea pigs were somewhat surprising, since the failure to recognize the organism microscopically had suggested the probability that it was of exceedingly minute size and might be readily filterable. He would not assume that filtration is impossible, but states that it did not pass through the filter under the conditions of experiment. These experiments prove, then, that the condition produced in the guinea pig is an infection and not an intoxication, for otherwise the filtered serum undoubtedly would be as toxic as the unfiltered. In view of the infectiousness of the serum they also prove that the infecting agent is far from being an exclusive corpuscular parasite, and suggest very strongly that the organism is of such size that its ultimate and positive recognition with the microscope may reasonably be hoped for. Experiments with monkeys are also related. From these Ricketts concludes that the condition produced has been an actual infection rather than a transferred intoxication, because it can be passed through the second generation of animals, and because the filtered serum, which would certainly contain any soluble toxins which might be present, causes no disturbance when injected. No other cause of death in the animals experimented on could be found, and it was not possible to cultivate any microorganism from the heart's blood.

Harry N. Mayo describes the etiology, morbid anatomy, and symptoms of the disease. He states that the anatomic changes are those incident to purpura hemorrhagica. At first the spots resemble petechiæ, later they increase in size and extend over the entire body. The patient first complains of lassitude and shows an elevation of temperature to about 100° or 101°. As the spots appear the temperature rises, and there is headache, general malaise, loss of appetite, constipation, and coryza. The nervous symptoms are those usually accompanying febrile diseases. Mayo states that the disease is typical and could hardly be mistaken for anything else. The treatment, he says, must be in accord with the symptoms presented.

The Lancet, June 23, 1906.

Primary Pneumococcal Arthritis.—A general description of the affection is given by W. Pasteur and L. Courtauld, who describe one personal case, three from literature, and a fifth, which though not primary, contains certain points of interest. Their general conclusions are thus stated: (1) Primary pneumococcal arthritis is apparently of rare occurrence in adults. (2) In children it is less uncommon. (3) The path of infection is the blood stream, to which the organisms gain access through some slight and unnoticed area of injury. This is in all probability situated in the mouth, nasopharynx, or middle ear, and the relative frequency of this form of arthritis in infants and young children may be connected with their susceptibility to inflammatory conditions of these regions. (4) The infection is usually localized at first in one joint and may remain so; on the other hand, it may become generalized. (5) The death rate in the primary form compares very favorably with that of secondary pneumococcal arthritis. This may be accounted for by the usual restriction of infection in the former, whereas the latter generally implies a more or less pronounced septicemia. (6) It is probable that the records available do not convey an accurate idea of the frequency of this form of arthritis, as many slight cases, which recover without surgical interference, must escape bacteriological examination.

Congenital Hypertrophy of the Pylorus.—One personal case is reported by J. W. Rob. His patient was a healthy male child who at the end of the third week (as he did not seem to be gaining) was taken from the breast and artificially fed. Digestive troubles soon appeared. The bulk of the paper consists of details as to diet indication, etc., and cannot be reproduced here. No definite pyloric tumor could be felt, but the abnormally large size of the stomach and the forcible "pumping" vomiting led to the diagnosis given. No gastric peristalsis could be seen, although it could be felt. Later a pyloric swelling was detected, but disappeared. Under careful feeding the child was doing well at the seventh month.

British Medical Journal, June 23, 1906.

Copper Alginate.—A. and G. Gresswell enumerate some of the common uses of the familiar salts of copper, calling attention to the fact that in some animals this element is the essential metallic ingredient of the coloring matter of the red cells. They have employed copper alginate in pill form, 1-24 gr. to 1-6 gr., for simple and pernicious anemia. They have also used the salt in tuberculous ulceration of the bowel, but as other remedies were employed the value of the copper is decidedly problematical.

Neuritis in Phthisis.—A patient of J. Stark, a young man with tuberculosis, developed a typical wrist drop of the right hand. It was at first ascribed to pressure, but as it became permanent the author finally attributed it to the tuberculosis. This is a rare complication of the latter disease. Cases previously reported have presented lesions of the lower extremities, accompanied by excruciating pains. In the author's case there were no pain and the affected member was not sensitive to pressure.

Degeneration of the Myocardium in Hot Climates.—W. C. Brown calls attention to the fact brought out in the title of his paper. He considers the condition referred to as of great importance, for while the prognosis is, in case of prompt recognition and treatment, by no means bad, evidences of myocardial change are apt to be misinterpreted, and death not infrequently occurs after an apparently trivial illness. The disorder has no racial preference. Overindulgence in hard exercise is clearly causative. The middle-aged man who removes to the tropics and keeps up the athletic activities of his earlier years furnishes an especially fit subject. The patient has an indefinite malaise, but there is no faintness, dyspnea, cough, or precardial oppression. Cardiac rhythm is unimpaired, though the action is indicative of a flabby organ. Death may come in an anginoid seizure. It frequently occurs at night and after the administration of a hypnotic. Autopsy shows the heart somewhat enlarged, lax, and flaccid. Epicardial fat is markedly deficient. There is no endocarditis and no dilatation. Coronary arteries are dilated and soft. The myocardium is pale, soft, and friable. The intermuscular connective tissue is swollen and apparently increased in quantity, but round-celled infiltration and vascular congestion are absent. The tissue appears waterlogged, and in general it may be said that the condition is only a prominent feature of a general dyscrasia which affects all the tissues to a greater or less degree. The main principles of treatment are embraced in rest in bed, limited diet, general massage, avoidance of tobacco, and restriction of alcohol. Opium is the most valuable drug. Strychnine, digitalis, etc., are to be avoided.

Chorea Considered as Cerebral Rheumatism.—Dyce Duckworth gives his adherence to the infection theory of rheumatism, and admits the claims of Poynter, Paine, and others as to the isolation of the bacterial element therein. Chorea is also a manifestation of the infection. The old theory of nervous shock or fright in its causation must be abandoned, although we must acknowledge a neurotic factor in the pathogeny of the disease. The embolic theory, also, of causation is no longer tenable. That the young and the female sex afford the greater number of examples of chorea is probably due to the fact that in such subjects the rheumatic toxin is more apt to spread widely and to act with greater intensity than in adults. The adolescent brain is also more unstable than the adult one. Moreover, says the author, we have to bear in mind that the occurrence of chorea may be the sole manifestation of an attack of rheumatism in the absence of any concomitants, beyond possibly some degree of cardiac dilatation. It is thus a true cerebral rheumatism. This fact has not failed to inspire observers with doubt and incredulity as to the true rheumatic nature of the disorder. It is surely worthy of note that in first attacks of rheumatism and in first attacks of chorea there is not seldom to be observed a distinct degree of cardiac dilatation, sometimes independent of pyrexia, pericarditis, or appreciable endocarditis. This condition appears to be due to rheumatic toxemia, which induces a measure of myocarditis. In some of these cases the more ordinary rheumatic symptoms may supervene. The rheumatic toxin must possess a certain specific infecting quality, as we do not meet with chorea in cases of ordinary streptococcal infection or in strictly pyemic conditions. It is probable that there are variations in the quantity and degrees of virulence in the provoking toxin of rheumatism, which does not merely represent an alternated form of blood poisoning due to various pyogenic organisms.

Berliner klinische Wochenschrift, June 18, 1906.

The Causes of the Early Loss of the Teeth.—Warnekros describes at great length the mechanics of mastication, and points out that the loss of even a single tooth is of importance for the proper performance of the function. This is especially true for the

molars, and the absence of any one of these seriously disturbs the mechanics of mastication, and by causing undue and uneven wear to fall upon the other teeth brings about their premature loosening. In addition erosion and decay are favored, so that the loss of the first tooth should be the signal for prompt aid on the part of the dental surgeon to forestall subsequent damage. The loss of a single tooth is usually not regarded seriously, and the author holds that it is the duty of practitioners to counsel their patients to seek the dentist at once, and by providing themselves with a properly fitted prosthesis to prevent the tendency to further trouble.

The Therapeutic and Symptomatic Value of Lumbar Puncture in the Tuberculous Meningitis of Children.—Schlesinger says that four cases of tuberculous meningitis in which the bacilli were demonstrated in the spinal fluid obtained by lumbar puncture have been reported as having recovered. He considers that lumbar puncture offers the most promising therapeutic resource in these cases, and advises that it be repeated at intervals of from three to five days. It should be begun early and as much fluid as possible should be withdrawn, 50 c.c. or more. The danger of convulsions after withdrawal of cerebrospinal fluid seems to exist only in cases of brain tumor and need not be apprehended in dealing with children whose fontanel is still open. The only misadventure likely to be encountered is a so-called "dry tap," that is, although there is evidence of an excess of fluid in the ventricles, none can be obtained by lumbar puncture. This the author suggests may be due to a valvelike action, whereby the posterior cornua of the brain are forced so tightly against the margins of the foramen magnum, owing to the increased pressure, that no fluid can pass downward. The frequent repetition of the lumbar puncture is directly beneficial in preventing the convulsive seizures, and it is not unlikely that aside from its value in giving symptomatic relief it also influences favorably the actual course of the disease.

Münchener medizinische Wochenschrift, June 19, 1906.

Auscultation of the Spinal Column, Sacrum, and the Pelvis.—Ludloff states that he has found that much diagnostic information may be obtained by auscultation along the spinal column and over the pelvic bones. Many cases of backache, so-called occipital neuralgia, etc., may in this manner be discovered to be due to localized arthritis of the vertebral joints in question, owing to the very loud but sharply circumscribed crepitation to be heard with the stethoscope. Fractures of the vertebræ or about the pelvis may also be detected in the same manner.

Version in Placenta Previa.—Jolly is of the opinion that for the practitioner version is still the most advisable plan of procedure in dealing with placenta previa. He considers that if the cervix is still undilated it is much better to allow as much as possible of the liquor amnii to escape before attempting to seize the foot. When the cervix is dilated the version can, of course, be more easily performed if the uterus is distended with fluid, and under these conditions it is advisable to endeavor to prevent leakage as much as possible, but in placenta previa, owing to the fact that the seizure of the foot must be effected with one or two fingers, it is preferable to empty the uterus as completely as possible before attempting the version. This has another advantage, in that active pains and dilatation of the cervix are set up more rapidly if the liquor amnii has been allowed to escape, and as the period of birth is therefore shortened, the chances of securing a living child are greatly increased.

A Simple Method for Making Anaërobic Cultures.—Reuschel describes the following procedure. The test-tube to be used is provided at its open extremity with a piece of tightly fitting, thick-walled rubber tubing, which projects a short distance beyond the end of the tube. This is plugged with cotton and the tube containing the culture medium is sterilized as usual. The tube should contain more of the medium than is usually employed, so that it is about two-thirds full. The tube is heated so as to expel all air contained in the medium and is rapidly cooled. The inoculation is performed in the usual way, and by tipping the tube the upper layers of fluid are heated to the boiling point over a flame. In this way the upper portion of the tube is filled with water vapor and all air is expelled, while at the same time the organisms in the lower layers of the fluid are not injured. The rubber tube is closed with a clamp and the tube is placed in cold water, in order to cool it quickly. That all air has been expelled from such a tube is shown by the fact that if the lamp is removed from the rubber tube under water the entire test-tube will fill with the water. The author states that the most sensitive anaërobes can readily be grown by using this technique.

Deutsche medizinische Wochenschrift, June 21, 1906.

The Excretion of Sugar in the Urine in Pneumonia.—Rosenberger describes two cases of lobar pneumonia in which small quantities of a reducing substance were temporarily excreted. In the one instance, the patient being a boy of six years, it appeared that the condition was one of maltosuria, but in the other case, which was that of a woman of twenty-six years, the author was unable to arrive at a satisfactory conclusion in regard to the nature of the sugar. He suggests for the cause of this symptom that the pancreas in these cases may be the seat of a parenchymatous degeneration such as is commonly observed in other organs in the course of the acute infectious diseases. He considers that in the infectious diseases carbohydrates may be excreted in the urine, usually during only a short period of time and in small amounts, and independently of the diet, the body temperature, or the course of the disease. Neither the amount nor the specific gravity of the urine suggests their presence, and it is not unlikely that it may often be overlooked. The prognosis of glycosuria of this sort does not appear to be bad, and the symptom usually disappears of itself without being affected by the further course of the infectious disease. A tendency to the excretion of glycuronic acid or sugar after carbohydrate feeding may persist. Both of the author's patients recovered completely.

A Simplified Method for the Quantitative Determination of the Uric Acid in Urine.—Kowarski describes the following procedure, which he says has the advantages of simplicity and rapidity without any sacrifice of accuracy. Ten c.c. of urine is put in a small centrifuge tube and two or three drops of ammonia and 3 g. of powdered ammonium chloride are added. The tube is closed with a rubber stopper and shaken until the ammonium chloride has dissolved. The tube is allowed to stand for two hours, during which time the ammonium urate formed separates. The fluid is then centrifuged during one or two minutes and the supernatent fluid is poured off. Five drops of concentrated hydrochloric acid are added and the tube is heated over a small flame; a crystalline deposit of uric acid promptly forms and the tube is allowed to stand for an hour. The sediment is washed with water and alcohol by means of the centrifuge until the alcohol has a neutral reaction. The sediment is then dissolved in 2 c.c. of hot water, a drop of phenolphthalein is added, and the hot fluid is titrated with 1-50 normal piperidin solution until a permanent pink color is obtained. The number of milligrams of uric acid present in the 10 c.c. of urine is obtained by multiplying the number of c.c. of piperidin solution used by the factor 3.36. The author has found that the results obtained compare favorably with those of the Salkowski or Hopkins method, and the procedure has the further advantage of not requiring more apparatus than is usually to be found in the physician's office.

French and Italian Journals.

The Use of Alcohol in Gastric Pathology.—Paul Carnot has been investigating a new method of determining the secretions of the stomach. It consists in provoking gastric secretion by the ingestion of a small quantity of alcohol and of analyzing this secretion. While normal stomachs react very similarly in the production of an acid secretion rich in pepsin, diseased stomachs act in a very different manner. Some produce a hyperacid and hyperpeptic secretion; others a hypoacid and hypopeptic secretion. In a large number of cases (atrophic cirrhosis and cancer of the stomach) the gastric glands do not react at all to alcohol. In other cases (certain forms of gastritis) the secretion is not acid, but is rich in pepsin. Finally, in other cases the reaction is muciparous. It would seem from these experiments that alcohol may give very helpful indications in the different pathological processes.—*La Presse Médicale*, May 10, 1906

Treatment of Whooping-Cough by Chloroform Narcosis.—Henri de Rothschild has recently observed the remarkable effect of chloroform anesthesia on a child suffering from whooping-cough. The chloroform was administered to the little patient for the purpose of reducing the hip. The child had been suffering from whooping-cough for eight days. At the time of writing this child had been under observation for more than fifteen days, but had not had one coughing spell during that time, although before the anesthesia she had suf-

fered from about thirty-nine attacks a day. Vomiting, cyanosis of the face, and insomnia have also ceased. This observation led the writer to suppose that chloroform anesthesia might have a distinctly beneficial influence on whooping-cough, especially at the beginning. He has tried this method on other children. In these cases the results have been most encouraging. The duration of the anesthesia is five minutes. Complete anesthesia is not attempted. The stage of muscular relaxation before reaching the point of abolition of the corneal reflex gives the best results. In no case has the writer practised a second anesthesia.—*Le Bulletin Médical*, May 23, 1906.

Metastasis of Cancer of the Soft Parts of the Thigh.—Vian reports this case. The patient was a woman sixty-one years old. On the internal surface of the thigh was an oblong tumor, solid, and movable from side to side. The inguinal ganglia were not palpable. Operation was performed and the growth was found to be a fibromyoma, having its origin in the muscular layer of the femoral vein. Within a year the patient had a recurrence. Operation was again performed, but on account of adhesions to the large vessels the tumor could not be entirely removed. Some days later amputation of the thigh was practised. This time examination showed the growth to be a fasciculated sarcoma, or rather a fibrosarcoma. A few months later the patient returned to the hospital with a dorsal tumor. At operation this growth was found to be under the muscles. The seventh, eighth, and ninth spinous apophyses had been destroyed by the growth. Microscopical examination showed this new tumor to be a fasciculated sarcoma. The localization of the metastasis in the vertebral column is not common to sarcomata. The transformation of fibromyoma into sarcoma is exceptional.—*Le Progrès Médical*, May 19, 1906.

Researches on the Hibernal Whitening of Hair and Feathers.—Elie Metchnikoff has been making a special study of old age. The phenomenon of the blanching of the hair has been investigated. In a work published five years ago he said that the loss of pigment in the hair was due to the action of certain cells, which he called chromophages. This theory did not agree with the one commonly accepted, that of the penetration of the air. Metchnikoff believes from his studies that human hair, hair of the lower animals, and feathers contain living elements sensitive to outside influences, and capable of moving and of seizing grains of pigment. In other words, these chromophages show the highest functions of the cell. Their existence explains how the influence of strong emotions in man may blanch the hair in a night. Under the influence of violent excitement these little elements may become particularly active. These studies also serve to explain the whitening of the fur of certain animals in the winter.—*Gazette des Hôpitaux Civils et Militaires*, May 22, 1906.

Clinical Experiments on the Complements.—D. Pacchioni and A. Mori give us a résumé of the most important conclusions obtained from the determination of the quantity of complements existing in the blood of twenty-nine infants sick or convalescent from different diseases. The complements are contained in the blood in a fixed and determined quantity, which varies with morbid conditions, lessening in some diseases and increasing in acute infective diseases in the beginning of the attack. In tuberculosis, typhoid, and purulent arthritis, the complement was the same as in normal infants, In nephritis, one case of tuberculosis, and scarlatina the quantity was from two to four times less than normal. In varicella and pneumonia, the complements were increased in the beginning of the attack and decreased in the successive days.—*Lo Sperimentale*, Vol. LX, Part II.

Echinococcus Cysts of the Liver and Kidney.—Gaspare Alagna describes a case diagnosed as cyst of the liver in which, when the abdomen was opened, it was found that there were cysts of both liver and kidney. The kidney was reduced to a cyst the size of an orange, with a connective tissue capsule, the renal tissue having been almost entirely destroyed so that the cyst appeared to be connected with the intestine to which it had become adherent. As such it was removed, and only the microscopical examination of the specimen revealed the existence of a small amount of degenerated renal tissue. Such cysts are exceedingly rare, there being records of but ten to be found in medical literature. It is usually impossible to diagnosticate them during life, as they produce no renal symptoms at all. This case occurred in a child of twelve years. All the other recorded cases have occurred in adults.—*La Riforma Medica*, April, 1906.

Books Received.

While the Medical Record is prepared to receive all trade publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.

[illegible] B.A. (Cantab), M.B., C.M., F.F.P.S. (Glasg.). 12mo, 547 pages, muslin. William Wood & Co., New York. Price, $2.75, net.

[illegible] TIONS AND WOUND TREATMENT. By C. YELVERTON PEARSON, M.D., M.Ch., F.R.C.S. 8vo, 392 pages, illustrated, muslin. William Wood & Co., New York. Price, $3.50, net.

[illegible] TION; ITS PREVENTION AND CURE. By JOHN BESSNER HUBER, A.M., M.D. 8vo, 536 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

THE DISEASES OF THE NOSE AND ITS ACCESSORY SINUSES. By H. LAMBERT LACK, M.D., F.R.C.S. 8vo, 399 pages, illustrated, muslin. Longmans, Green & Co., New York. Price, $8.50, net.

THE DAMASK GIRL AND OTHER STORIES. By MORRISON I. SWIFT. 12mo, 144 pages, muslin. The Morrison I. Swift Press, New York. Price, $1.00.

INTRODUCTION TO MATERIA MEDICA AND PHARMACOLOGY. By OLIVER T. OSBORNE, M.A., M.D. 12mo, 167 pages, muslin. Lea Brothers Co., Philadelphia. Price, $1.00, net.

HEATH'S MANUAL OF MINOR SURGERY AND BANDAGING. Thirteenth Edition. Revised by BILTON POLLARD, F.R.C.S. 12mo, 409 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.50.

NOTES ON SURGERY FOR NURSES. By JOSEPH BELL, M.D., F.R.C.S. (Edin.). Sixth revised Edition. 12mo, 187 pages, muslin. William Wood & Company, New York. Price, $1.50, net.

TWENTIETH ANNUAL REPORT OF THE STATE BOARD OF HEALTH AND VITAL STATISTICS OF THE COMMONWEALTH OF PENNSYLVANIA. (1904-'05.) 8vo, 577 pages, illustrated, muslin. Harrisburg Publishing Co., Harrisburg, Pa.

THE THEORY AND PRACTICE OF MEDICINE. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P. Tenth Edition. Volumes I and II. 8vo, 1,382 pages, illustrated, muslin. H. K. Lewis, London, Eng. Per set, 26s., net.

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE COLLEGE OF P. AND S., COLUMBIA UNIVERSITY, N. Y. Vol. X. For the Collegiate Year 1904-1905. Reprints. 8vo, illustrated, paper.

COLLECTED STUDIES ON IMMUNITY. By Prof. PAUL EHRLICH. Translated by Dr. CHARLES BOLDUAN. First Edition. First Thousand. 8vo, 586 pages, illustrated, muslin. John Wiley & Sons, New York. Price, $6.00.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Seventeenth Session. Vol. XVII. Edited by LINNAEUS EDFORD LA FETRA, M.D. 8vo, 228 pages, muslin. E. B. Treat & Co., New York.

DIE INTERNE UND CHIRURGISCHE BEHANDLUNG DER GALLENSTEINKRANKHEIT, von Prof. Dr. HANS KEHR. 8vo, 178 pages, illustrated, paper. J. F. Lehman's Verlag, Munchen. Price, Mk. 4.

DAS HEUFIEBER SEIN WESEN UND SEINE BEHANDLUNG. Von Dr. ALFRED WOLFF-EISNER. 8vo, 141 pages, illustrated, paper. J. F. Lehman's Verlag, Munchen. Price, Mk. 3.60.

SUPPLEMENTARY ESSAYS ON THE CAUSE AND PREVENTION OF DENTAL CARIES. By J. SIM WALLACE, M.D., D.Sc., L.D.S. 8vo, 81 pages, muslin. Balliere, Tindale & Cox, London, Eng. Price, 2s., 6d., net.

DIE BASEDOW'SCHE KRANKHEIT. Von Dr. P. J. MOBIUS. Second enlarged Edition. 8vo, 155 pages, paper. Alfred Holder, Wein. Price, M. 4.20.

MATERIA MEDICA AND THERAPEUTICS. By J. MITCHELL BRUCE, M.A., LL.D., M.D. Forty-ninth Thousand. 16mo, 632 pages, muslin. W. T. Keener & Co., Chicago. Price, $1.75, net.

AN ESSAY ON THE GENERAL PRINCIPLES OF THE TREATMENT OF SPINAL CURVATURES. By HEATHER BIGG, F.R.C.S., (Ed.) 8vo, 240 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $2.00.

A MANUAL OF MEDICAL TREATMENT OR CLINICAL THERAPEUTICS. Volumes I. and II. By I. BURNEY YEO, M.D., F.R.C.P. Fourteenth Edition, Twenty-second Thousand. 12mo, 696 and 818 pages (respectively), illustrated, muslin. W. T. Keener & Co., Chicago. Price, $5.00, net.

A MANUAL AND ATLAS OF DISSECTION. By SIMON MENNO YUTZY, M.D. 4to, 256 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

Book Reviews.

A Manual and Atlas of Dissection. By Simon Menno Yutzy, M.D., Instructor in Osteology and Demonstrator of Anatomy in the University of Michigan. With 314 illustrations. With an introduction by J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy, University of Michigan, Ann Arbor. Philadelphia: P. Blakiston's Son & Co., 1906.

This volume is designed to help the student in his work in the dissecting room, and it is well adapted for this purpose. The student will find here a list of the structures which he should identify and study, and also some concise directions as to how to proceed with his dissection; but for a description of the structures named, and for all details of anatomy he must refer to his text-book. The book is profusely illustrated, and almost all of the cuts are taken from Holden's or Morris' Anatomy. The volume is well printed, strongly bound, and it will lie open at any desired page.

The Modern Materia Medica. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Antidotes, and Incompatibles of all Additions to the Newer Materia Medica that are likely to be called for in Prescriptions. New York: The Druggists' Circular, 1906.

With the ever-increasing number of therapeutic agents, most of them fortunately of purely ephemeral interest, that are offered by the manufacturing chemists, it is impossible for the ordinary practitioner to keep their often confusingly similar names straight in his mind, even if it were worth while to do so. There are times, however, when it is desirable to have some means of securing at least a superficial idea of the nature of some particular agent, and then the present compilation may be found very useful. The descriptions of the various drugs appear to be fairly impartial and the list seems as nearly complete as is possible in dealing with such a mushroom growth. For another edition we would suggest the addition of an index of the chemical names of the substances, for many old acquaintances become wholly unrecognizable when attired in the polysyllabic disguise that these ultraethical days seem to require.

A Textbook on the Practice of Gynecology. For Practitioners and Students. By W. Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society; Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Second Edition, Revised. With 1,046 original line drawings. Philadelphia and London: W. B. Saunders Company, 1906.

As it is less than a year since the first edition of this work appeared we naturally expect to find but few alterations in the text; a few typographical errors have been corrected, and there is some change in several of the illustrations. The most noticeable features of this work are that it is intended for the general practitioner rather than for the specialist; that it gives in considerable detail all that should be done in any given case, and tells not only what to do, but also how to do it; the general arrangement of the work is also different from that of any other book on the subject, and it will particularly appeal to those for whom the book is intended. The illustrations are numerous and helpful. Of course every method described by the author will not be indorsed as the best possible procedure by every gynecologist; but the general practitioner will find this a safe guide, and a more than ordinarily useful one. That there is ample room for a book of this sort, and that it supplies a want, is evidenced by the short time that has elapsed since the issue of the first edition. One adverse criticism that we would make is on the spaced type so freely used, presumably for emphasis; it is very trying to the eyes.

Chemistry of the Proteids. By Gustav Mann, M.D. (Edin.), B.Sc. (Oxon.), University Demonstrator of Physiology, Oxford. Based on Professor Otto Cohnheim's "Chemie der Eiweisskörper." London: Macmillan & Co., Limited; New York: The Macmillan Company, 1906.

The author of this work is not one of those who see in the phenomena of cellular metabolism manifestations of so-called "vital" processes whose true inwardness forms a mystery that the human mind must not hope to solve. The volume is rather an expression of scientific optimism, and the reader who follows the steps by which so many of the problems of organic chemistry have been unraveled can but share the author's hopefulness in regard to future work. The present book is founded largely on Cohnheim's treatise on the same subject, of which it was the author's original aim to present simply a translation; but, as he explains, the work grew under his hands to such an extent that finally he decided, with Cohnheim's consent, to assume the whole responsibility for it. For those who are acquainted with the "Physiological Histology" of the same author no commendatory phrases are necessary in regard to his present contribution, but for those who are not and who would inform themselves as to the present standpoint of knowledge in this intricate field, it may be stated that it is without doubt the most satisfactory exposition of the subject to-day extant in English. The synthesis of albumins forms one of the most interesting chapters of the book and is given in detail as far as developed up to September, 1905.

A Compend of Obstetrics, especially adapted to the use of Medical Students and Physicians. By Henry G. Landis, A.M., M.D., Late Professor of Obstetrics and Diseases of Women in Starling Medical College. Revised and edited by William H. Wells, M.D., Demonstrator of Clinical Obstetrics in the Jefferson Medical College, Philadelphia; Gynecologist to the Mount Sinai Hospital, Philadelphia; Late Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic; Fellow of the College of Physicians, and of the Gynecological section of the same; Member of the Pediatric Society of Philadelphia, etc., etc. Eighth edition, illustrated. Philadelphia: P. Blakiston's Son & Co., 1906.

As this compend has reached its eighth edition, it may be presumed to have justified its existence. The present issue contains three or four new illustrations taken from Edgar's book on obstetrics, an occasional new paragraph in the body of the work, and an appendix of some obstetrical constants.

The Examination of the Function of the Intestines, by means of the Test-Diet. By Prof. Dr. A. Schmidt. Translated by Charles D. Aaron, M.D. Philadelphia: F. A. Davis Company, 1906.

Aaron's translation of this important and practical booklet of Prof. Schmidt is an excellent one. In order to be able to judge of abnormal processes within the intestines through an examination of the feces a standard diet must be given. This, according to Schmidt, should consist of 1.5 liters milk, 100 gm. zwieback, 2 eggs, 50 gm. butter, 125 gm. beef, 190 gm. potatoes, and gruel of 80 gm. oatmeal. It contains about 102 gm. albumin, 111 gm. fat, 191 gm. carbohydrates, or a total of 2,234 calories. The test is generally given for three days, sometimes longer, at any rate until a stool is obtained which comes with certainty from this diet. With a normal evacuation this occurs with the second defecation after the beginning of the diet. The patient as a rule does not need to take a special powder in order to mark off the normal excrement from the excrement of the former diet, for the normal excrement can generally be recognized at once by its uniform consistency and its lighter color. For a macroscopical examination the excrement is first stirred up thoroughly with a wooden spatula, and a small amount of about the size of a walnut is transferred to a glass mortar (of about 12 centimeters in diameter). In this it is ground up as fine as possible with the addition of at first a few cubic centimeters and gradually more distilled water (until it is of fluid consistency). The grinding up must be done carefully, so that no coloring excrement particles remain. The ground-up specimen of excrement is then spread over a flatback plate or a large glass vessel in as thin a layer as possible and account is taken of all the elements that are still recognizable in it with the naked eye.

Under pathological conditions then appear: Mucus, in larger and smaller, even very small flakes; remains of connective tissue and tendons from the chopped meat eaten; remains of muscular tissue; potato remains; large crystals of ammonia, magnesium phosphate.

A Text-Book of Human Physiology, Including a Section on Physiological Apparatus. By Albert P. Brubacker, A.M., M.D., Professor of Physiology and Hygiene in the Jefferson Medical College; Professor of Physiology in the Pennsylvania College of Medical Surgery; Lecturer on Physiology and Hygiene in the Drexel Institute of Art, Science, and Industry. Second edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co., 1905.

The first edition of this work was well received by teachers and students of physiology, although not superior to some of the already existing books on the subject. It is well, however, to have more than one text-book on any subject, especially one of this nature, in order that facts regarding some of the more obscure points may be stated in different ways and so be more readily understood. The present edition is an improvement on the first in that certain obscure sections have been rewritten and the inevitable inaccuracies of a first edition have been corrected. The new views of digestion brought to light by Pavlov, Cannon, and others are noted, and new matter on the nervous mechanism of the heart and on vision has been introduced. The work as it is now improved compares most favorably with other physiological text-books, and can be recommended to students as a safe and satisfactory guide.

Society Reports.

ILLINOIS STATE MEDICAL SOCIETY.

Fifty-sixth Annual Meeting, Held at Springfield, May 15, 16, and 17, 1906.

DR. H. C. MITCHELL, OF CARBONDALE, PRESIDENT.

THE society met in the First Methodist Church. Its scientific work was divided into two sections, medical and surgical.

MEDICAL SECTION.

Duties and Obligations Relating to Tuberculosis.—Dr. C. W. LILLIE of East St. Louis dealt with what might be termed the ethical aspects of this subject. The paper dealt with the duties of parents and guardians; of teachers in our common schools; of employers of labor of all kinds; of city and county officials and boards of health and overseers of the poor; of legislators, governors, and others whose duty it was to promote the passage of laws for the preservation of public health; of charitable persons in each community; of philanthropic and wealthy citizens; of managers of steam and street railways; of hotel proprietors; of the individual in his personal habits; of all doctors, and especially members of State, county, and city medical societies. The doctor's duty more particularly was to make sure of his diagnosis. Lastly, the author pointed out the duty of the doctor to instruct all others in regard to tuberculosis.

Etiology and Diagnosis of Tuberculous Spondylitis in Infancy and Childhood.—Dr. J. H. HESS of Chicago read a paper on this subject, in which he reported two interesting cases, and emphasized the great importance of early *x*-ray examinations in these cases. This was clearly illustrated in the first case, in which the degree of destruction, though only moderate, could be localized beyond a doubt. He also pointed out the common danger of misinterpreting the reflected pains as local diseases in the parts affected, as illustrated by conclusions in both of the cases reported.

Congenital Syphilis in the Infant.—Dr. I A. ABT of Chicago discussed the treatment of this condition in infants. He pointed out the indications for treatment, and remedies employed, choice of drugs, plans of treatment, etc.

Hysteria in Children.—Dr. D'ORSAY HECHT of Chicago said that this subject merited the attention of the general practitioner and specialist in pediatrics and neurology. Inquiry into hysteria in children had not been a searching one. The general belief was that hysteria was a malady of adult life. He spoke of the physical and mental factors conducive to the development of hysteria in children. He considered the symptoms and cited several illustrative cases. The diagnosis was discussed with special reference to the exclusion of organic disease, the recognition of organic disease complicated by hysteria, and the detection of simulation. The prognosis and treatment were likewise discussed briefly.

Intestinal Disorders of Children.—Dr. JOHN C. COOK of Chicago discussed the etiology, the bacterial findings, the pathological lesion, and the treatment, both dietetic and medical, of the intestinal disorders of children, accompanied with diarrhea.

Infant Feeding.—Dr. A. C. COTTON of Chicago followed with a paper, in which he gave some practical points on infant feeding.

Manifestations of Rheumatic Infection in Children.—Dr. C. MARTIN WOOD of Decatur pointed out the difference between adults and children in their reaction to rheumatic infection, and said that there was more extensive and lasting damage in the latter. He spoke of tonsillitis, endocarditis, arthritis, chorea, and erythemas as rheumatic manifestations. He likewise discussed their differential diagnosis. He emphasized the importance of recognizing both mild and obscure cases. He said there was a marked tendency on the part of some children to frequent outbreaks in one family or another. This was due to a lessened resistance, either hereditary or acquired. The protection of the heart and the prevention of fresh attacks should be the main object of treatment. The former was secured by rest and counteracting of poisons, while the latter was obtained by hygienic management, especially of clothing, exercise, and bathing.

The Attitude of the Physician Toward the Nostrum Evil.—Dr. CHARLES SPENCER WILLIAMSON of Chicago said that a very small part of the knowledge and energy which every physician is constantly giving to his work would, if applied to the eradication of the nostrum evil, do away with it in a very short time. Already there were signs of improvement. In another city where the nostrum evil had reached, a year or so ago, even a worse stage than in Chicago, he found from the last two hundred prescriptions taken consecutively but twenty-one calling for proprietaries. This number was, of course, still large, greatly in excess of the justifiable proportion, and yet it showed that the diminution to one-half or one-third of this figure should be readily obtained. All that was necessary was to arouse the profession thoroughly to the exact situation, and it would do as it always had done before—act promptly and efficiently, and wipe out this blot upon its fair name.

Disease in the Aged.—Dr. W. H. CURTIS of Wilmington in a paper on this subject drew the following conclusions: "(1) While the first requisite for longevity may perhaps be deemed to be an inborn, perhaps inherited quality of tissue structure wherein one part shall be just as strong as another, like the materials of the famous One Hoss Shay, it is still manifestly possible and sometimes practicable to detect the onset of those pathological processes frequently originating in middle life, and whose development is synonymous with that symptom-complex known as old age. And, further, when a diagnosis is thus made, it is possible and frequently practicable to institute therapeutic measures that will insure the prolongation of the individual life. (2) The study of the processes of disease in the aged, together with their appropriate therapeutics, offers a rich field for individual research, and one that deserves more thorough cultivation. In this connection our present knowledge of the subject needs thorough revision, amplification and systematization at competent hands, and to be made more accessible. (3) It is requisite to the successful study of disease in the aged, and certainly almost essential to the one who undertakes their management that he be possessed of a peculiar mentality, combining not only a liberal education, but great resourcefulness in tact, patience, and sympathy."

The Macroscopical Agglutination of the Typhoid Bacilli as a Diagnostic Test for the General Practitioner.—Dr. A. M. STOBER of Chicago read a paper in which he discussed this question.

Lordosis.—Dr. M. S. MARCY of Peoria reported an interesting case of lumbar lordosis.

Treatment of Obesity.—Dr. ALFRED C. CROFTAN of Chicago presented some newer ideas on the treatment of this condition. He discussed the science and art of reduction cures, the calorimetric method, the three degrees of obesity and their management, the restriction of liquids, the element of exercise, the treatment of complications, thyroid therapy and results.

Significance of Hydrochloric Acid Variation in the Stomach Contents.—Dr. E. J. BROWN of Decatur spoke of the relative importance of HCl determination to other chemical findings, and to the physical examination of the stomach. Errors in diagnosis were made by placing too much reliance upon HCl tests. He spoke of the relations of HCl excess to so-called bilious attacks, muscular rheumatism, gout, eczema, etc. He emphasized, too, the value of HCl tests in hyperchlorhydria, achylia gastrica, gastritis, cancer, ulcer, and neurasthenic gastrica. He dis-

cussed some of the new methods in diagnosis of diseases of the stomach.

Serous Inflammations.—In a symposium on this subject papers were read by Dr. A. A. Goldsmith of Chicago, Dr. L. C. Taylor of Springfield, Dr. C. A. Elliott of Chicago, Dr. N. S. Davis of Chicago, Dr. Wm. A. Evans of Chicago, Dr. C. L. Mix of Chicago, and Dr. E. E. Kerr of Chicago.

Interstate Reciprocity.—Dr. J. A. Egan of Springfield read a paper in which he discussed facts and fallacies concerning interstate reciprocity in medical licenses.

The Opium Habit and Its Treatment.—Dr. George F. Butler of Chicago briefly outlined the general line of treatment he usually adopted. There was, however, no systematic routine specific treatment for this disease. The patient and not the disease, here as in all cases, was first to be considered. He first ascertained the maximum dose and the total daily amount of the drug the patient was taking. Then he began the gradual or more rapid withdrawal of the morphine, the method employed being governed entirely by the character of the case. Under no circumstances must the patient know the amount he was given at any stage of the treatment. If he was taking it hypodermically, he endeavored to abandon the use of the needle as soon as possible, without detriment to the patient, substituting deodorized tincture of opium or codeine in some vehicle, preferably non-alcoholic, which would completely disguise the taste of the opium. The patient was invariably encouraged when he could to abandon the use of the hypodermic syringe. The opium in the mixture for internal use could be diminished as required. Free elimination by the bowels, skin, and kidneys must be maintained. Many other adjuncts to treatment were discussed in detail. He believed morphinism could be cured in the great majority of cases if the physician could have the confidence and entire control of the patient, and had him in an institution where all the facilities for proper treatment were at hand, and provided he could keep the patient under observation a sufficient length of time and would treat the patient mentally and physically, and not merely the disease, according to some routine method.

Serum Therapy.—Dr. E. R. Larned of Chicago gave an epitome of the progress of serum therapy during the last year. He classified sera as to their being efficient or inefficient. He spoke of efforts to produce new sera; also of the attempts made to improve sera which had been inefficient for the purposes intended. He spoke of the investigations that had been carried on with reference to making antigonorrheal and antisyphilitic serum. Attention was directed to modifications of the Widal test for the diagnosis of typhoid fever, and of Wassermann's serum in the treatment of diphtheria.

Defects of Vision and Hearing in the Public Schools.—Papers were read on this subject by Drs. J. Whitfield Smith of Bloomington, Frank P. Norbury of Jacksonville, A. L. Adams of Jacksonville, and James A. Egan of Springfield.

Many other papers were read before the Section on Medicine.

GENERAL SESSION.

At the evening session of the first day, an address was delivered by Governor Charles S. Deneen. The Governor selected for his subject, "Crime as a Social Disease." He confined his remarks mostly to crime in Cook County, where for eight years he was State's Attorney, and was brought face to face with some of the worst criminals and criminal cases in the world, in a district which was noted as the worst criminal district in the world. While crime had existed in the world almost from the beginning, it was only a comparatively late thing that it was being unearthed by modern methods, and it was only within the past twenty-five years that criminal procedure had been directed at the source of crime. The criminal court of Cook County was the greatest in the world. This court had a record of four thousand prosecutions annually by the State's Attorney of Cook County. He closed by saying that crime offered one of the widest fields for medical opportunity in the country.

President's Address.—This was delivered by Dr. H. C. Fairbrother of Carbondale. His subject was "Popular Diffusion of Medical Knowledge." He brought forth the fact that the educated were the best class of people with whom the doctors had to deal; that there was less disease as the people advanced in the educational scale, and that the educated were the most reasonable to deal with. He also stated that the Society should advocate the passage of a law compelling people who wished to marry to undergo a physical and mental examination before entering upon matrimony, and thus allay much of the suffering caused by immature marriage and consequent evil and sickness. Such a measure, he said, would cheat the divorce courts and the jails of their patrons.

The Address on Surgery was delivered by Dr. D. W. Graham of Chicago, who selected for his subject, "Some Hindrances to Surgical Progress."

SURGICAL SECTION.

Perirectal Abscess.—Dr. Charles J. Drueck of Chicago emphasized the frequently overlooked details in the treatment of perirectal abscess, and took up the pathology, symptoms, and diagnosis. Under treatment he considered the necessity of immediate evacuation. He referred to the facts and fallacies of the different methods of obtaining drainage, and made a few remarks relative to the method employed by him. He spoke of the danger of autointoxication and pelvic congestion during the postoperative treatment, and how to prevent it.

The Brain a Good Field for Surgery.—Dr Charles D. Center of Quincy made an effort to show by numerous well-authenticated cases of traumatism that many portions of the brain need not be considered vital parts; that less reluctance should be shown by surgeons in invading the brain under antiseptic precautions, the argument being based on the insensitiveness of the brain to injury. The reason for much unsatisfactory brain surgery in the past was that operative measures had been used too much as a last resort instead of a first resort, and operation had been done in the presence of inflammation, sepsis, or both. He reported a case of gunshot wound of the brain where the ball traversed the brain once in antero-posterior diameter, and partially traversed again in ricochet. Skiagraphs of the head of the patient at the present time were exhibited, and some interesting phenomena were noticed during the progress of the case.

Renal Diagnosis, with Reference to Nephrotomy, Nephrectomy, Nephrorrhaphy, and Plastic Pelviureteral Surgery.—Dr. Frederick Leusman of Chicago, in a paper on this subject, submitted the following conclusions: (1) Functional tests were helpful in causing us to study the kidney more accurately before operation. Their findings were not without value, but experience showed we could do as well without as with their assistance. When employing them in order to save life, we must at times operate, despite their findings. (2) The cystoscope and urethral catheter had come to stay, and familiarity with their use was becoming more general every day. They were indispensable diagnostic aids. (3) Time would show the practical value or worthlessness of other diagnostic methods. (4) A chemical, microscopical and bacteriological examination of the urine obtained from the ureteral catheter frequently meant much to the patient. (5) The *x*-ray was desirable, if obtainable. (6) An early incision into the kidney in the presence of symptoms pointing to renal surgery was the safest thing for the patient. (7) Do not explore during suppurating conditions. (8) Most kidney operations demanded probing to test ureteral

patency. (8) Experience demanded early nephrolithotomy as soon as the existence of stone was established; early nephrectomy in renal tuberculosis, and early nephrotomy or nephrectomy in acute renal abscess. (10) Nephrotomy was safer than nephrectomy in calculus, especially multiple; also in nephritis and cystic kidney. (11) In doing renal surgery we must not neglect to take care of the associated abdominal pathology—stomach ulcer, duodenal ulcer, cholelithiasis and cholecystitis, appendicitis, intestinal stricture or tumor, intestinal tuberculosis, uterine and pelvic adnexa disease.

Treatment of Compound Fractures.—Dr. Edward H. Ochsner of Chicago pointed out in what cases the limb can be saved, and when primary amputation is justifiable. He spoke of the method of disinfection, including prevention of tetanus. He pointed out the indications of plastic work in the repair of bones, tendons, nerves, etc., and discussed the method of drainage and wound closure. Also secondary shock and immobilization.

The Use of Extension Frames in the Treatment of Fractures of the Thigh and Leg by Ambulatory Casts.—Dr. Frederick Mueller of Chicago said the ambulatory plaster cast was the most convenient and natural treatment for all fractures of the thigh or leg. Its application was dangerous in some cases, on account of the possibility of disarranging a fracture once set. The author described a new apparatus which, beside showing all the advantages of the Lorenz apparatus, was especially built for general use in the treatment of fractures. The setting of all kinds of fractures could be accomplished by this apparatus with the greatest convenience for the surgeon as well as for the patient.

The Operative Treatment in Fractures Presenting Obstacles to Reduction.—Dr. William Fuller of Chicago drew the following conclusions: (1) That the unsatisfactory results hitherto obtained in practically all cases when treated conservatively would not meet the continued approval of surgeons familiar with modern surgical technique. (2) That the indications for radical treatment were positive and certain, and that the safety of the procedure was unquestioned. (3) That the operation offered in this class of cases the only reliable means of arriving at a correct diagnosis, the only basis upon which rational and scientific treatment may be enunciated.

Dr. W. R. Cubbins of Chicago discussed the Roentgen ray in fractures, and Dr. A. E. Halstead of Chicago spoke of pathological fractures resulting from metastatic carcinoma.

Problems in Appendicitis.—Dr. H. N. Rafferty of Robinson said that the appendicitis question, although hackneyed, was unsettled in many respects, as shown by bedside contact with individual cases. There was nothing new to offer in the way of diagnosis or treatment. All extremes had been reached in formulating methods of treatment, yet mortality prevailed. He pointed out the difference between radical conservatism and conservative radicalism. Difficulty in the conduct of cases was often due to inability to judge the extent of the lesions from either subjective or objective symptoms. The author, in closing, pointed out how much safer for both patient and practitioner was the doctrine of conservative radicalism over that of radical conservatism.

Angioma and Its Surgical Treatment.—Dr. Carl Beck of Chicago gave a brief historical review of this condition and its treatment, and dealt with the present method of surgery in angiomatous growths. He referred to the Payr and Wyeth method; to excision; electro-surgical method, and described his own method of subcutaneous excision and suture with the gradual growth of normal neighboring skin.

Shortening of the Round Ligaments at the Internal Ring for Persistent Retroversion of the Uterus.—Dr. Franklin H. Martin of Chicago gave a description of the technique of shortening the round ligaments through the internal ring after opening the abdomen by a ventral incision. It was accomplished by making a stab wound through the aponeurosis of the external oblique at the point where it passed over the internal ring. Through this opening was passed a pair of sharp artery forceps, penetrating the peritoneum at the point beneath the internal ring, grasping the round ligament within an inch and a half of its insertion into the uterus, and drawing the same through upon the aponeurosis and securing it there by means of a non-absorbable suture. He considered the operation unique in its simplicity; there was perfect security of the round ligaments. He employed the strong ends of the round ligaments and shortened the ligaments in the line of their normal axis.

Complications and Emergencies Met With in the Surgical Treatment of Ovarian Cystoma.—Dr. George L. Eyster of Rock Island enumerated and described the various complications of ovarian cystoma: Twisting of the pedicle; hemorrhage into the cyst; infection and suppuration; adhesions; displacement due to enlargement of other pelvic or abdominal organs. He made a plea for the split flap method of relieving such sessile adhesions to the abdominal viscera as might endanger their integrity by the ordinary method of enucleation. He reported two interesting cases illustrating some of these complications and emergencies.

The Need of Publicity in Venereal Prophylaxis.—Dr. Denslow Lewis of Chicago said it was the duty of the profession in every township to disseminate a knowledge of the truth regarding the prevalence of venereal diseases. He said the necessity of active endeavor everywhere should excite every humanitarian to do his utmost by a consistent prophylaxis to diminish the ravages of these loathsome diseases.

Symposium on Surgery of the Prostate Gland.—Dr. Carl E. Black of Jacksonville spoke on "How Can We Secure the Cooperation of the General Practitioner in the Surgical Treatment of the Enlarged Prostate?" He gave the history of surgery of the prostate, with special reference to surgical failures and their influence on the profession. He said it was not surprising that it was difficult to have the present operations accepted. What proof was there of the correctness of the present surgical procedures? He spoke of the influence of medical organizations in disseminating information, and their use for post-graduate instruction. He pointed out the apparent conflict between medical and surgical advice, and referred to the weakening influence of the division of the profession into societies and sections of specialists. He discussed the value of papers on surgical topics by general practitioners.

Dr. F. Kreissl of Chicago followed with a paper in which he gave the present status of the Bottini treatment. He reviewed the recent literature on the subject, discussed the operation and its underlying principles, together with the technique, immediate and final results. He spoke of the failures and fatalities, and their causes.

Dr. M. R. Barker of Chicago discussed the disarrangement and destruction of vesical structures in hypertrophied prostate and consequent functional disturbances. Postoperative urinary troubles were due to these conditions and not to the operation. What should be the attitude of the physician toward these patients when he first saw them, and what might he expect from his patients from surgical procedures?

Dr. John B. Murphy of Chicago pointed out the indications for, the limitations, and clinical results of, prostatectomy, saying that the indications were now well accepted and clean-cut. The early operation was the one that preceded catheter life, severe vesical infection, not to speak of ascending pyelitis. The technical procedure as to route was always elective in the individual case. The results had been very gratifying as to urinary continence, as to dispensing with the catheter, the cure of suppurative cystitis, absence of fistulæ, prevention of epididymitis, and

life-saving. There was no operation that taxed the surgeon's judgment as to the personal resistance equation so much as the operation of prostatectomy.

Dr. Alexander Hugh Ferguson of Chicago followed with a paper in which he discussed perineal prostatectomy as the operation of choice.

Vasectomy With or Without Subsequent Anastomosis, with Special Reference to the Treatment of Certain Inflammatory and Neuropathic Disturbances of the Male Sexual Apparatus.—Dr. G. Frank Lydston of Chicago said that the operation of vasectomy was a legitimate means of relief for certain conditions. Cord operations in suitable cases had a profound influence on the innervation and circulatory supply of the prostate and seminal vesicles, and incidentally a marked effect upon nutrition must result. Vasectomy was not indicated in any case in which there was a reasonable probability of relief being afforded by less radical means. The operation, when properly performed, was practically free from danger. Vasectomy had a certain range of application in sexual neurasthenics, spermatophobiacs and in genuine spermatorrhea. The operation was of the greatest value in intractable chronic prostatitis and seminal vesiculitis. Its beneficial effects were due not only to the change which it induced in the circulation and innervation of the prostate, but also to the rest which it secured to the seminal vesicles. Vasectomy had a certain range of application in suspected or known tuberculosis or malignant disease of the testis. In inoperable malignant disease of the prostate with severe hemorrhages, vasectomy had, in the author's experience, been beneficial. He described the technique of the operation of anastomosis of the vasa deferentia. In a certain as yet undetermined proportion of cases it was possible to so anastomose the divided vasa deferentia as to reestablish their continuity. Of four cases operated on in this manner, one had shown a restoration of function of the vas on one or both sides by the presence of spermatozoids. Of the other three, one was apparently a failure. There had been no opportunity to determine the condition of the remaining two.

Sarcoma in Childhood.—Dr. W. K. Newcomb of Champaign reported a case of sarcoma in a child, three and a half years old, and exhibited the specimen.

Treatment of Blenorrhea of the Lacrymal Sac, with Special Reference to Sac Extirpation.—Dr. W. O. Nance of Chicago said that chronic dacryocystitis is an exceedingly annoying process, and a source of danger to the integrity of the eye. The course of the disease was almost invariably obstinate and frequently resulted in months and even years of treatment by probing, syringing, and correction of nasal abnormalities. The removal or destruction of the diseased mucous membrane of the lacrymal nasal duct was positively obligatory as a preliminary to operation upon the globe of the eye. He pointed out the other indications for extirpation of the sac, and suggested some practical points concerning the technique of operation. He spoke of the essentials of success in operating, and described the changes in the lacrymal gland following the extirpation of the sac.

The Operative Treatment of Chronic Discharges from the Ear.—Dr. A. E. Prince of Springfield said a very large percentage of cases of middle ear discharge was due to chronic suppurative mastoiditis. He pointed out the complications which were liable to result when the disease was not controlled. Attention was directed to the results of the efforts of nature to bring about a spontaneous cure. It was the duty of the surgeon to assist nature. He spoke of the results of imperfect operations in which the surgeon had failed to remove all of the cells, which actually increased the danger of fatality. He summarized the points in the radical operation which were designed to bring about a permanent cure in the least possible time, and cited illustrative cases.

Symposium on Carcinoma.—Dr. George N. Kreider of Springfield spoke of the popular agitation for the early operative treatment in carcinoma. Cancer was a frequent and increasing disease. He referred to the remarkable superstitions about the disease, and said that the affection was not so fatal as was generally supposed. There was great need of teaching physicians and the public the early symptoms. Reference was made to the great number of uneducated persons who were using the strongest, most painful means of treating the disease. Washes and salves were entirely useless. All abnormal growths should be extirpated early. Early extirpation in cancer was absolutely necessary. Inoperable cases should be treated with the *x*-ray, and the patient be given hopes of recovery.

The Operative Treatment of Superficial Carcinomata.—Dr. Daniel N. Eisendrath of Chicago said that by superficial carcinomata are understood those of the lip, tongue, ear, extremities, and external genitalia. The reason for recurrence in many of these cases was that no attention, or but little, had been paid to the removal of the secondary deposits in the surgical anatomy of the lymphatic supply of the above regions. He made a plea for a thorough removal of the secondary foci simultaneously with the extirpation of the primary growth, saying that the two operations can be done at one sitting. The extirpation of lymph nodes should precede that of the primary tumor on account of the lesser danger of infection of the operative field. He described the technique as used by him in his surgical work.

The Logic of Abdominal Pain.—Dr. J. L. Wiggins of East St. Louis said that one of the fallacies that was general among the laity and altogether too prevalent among physicians was that the summoning of the surgeon presumed an operation. Another equally vicious was that operations were expedient only as a last resource. Considering the frequency with which these errors obtained, the surprise was not that surgery fell short of perfection, but that it was not altogether discredited. When we considered the safety and simplicity of an operation when a disease was in its incipiency and confined within the lumen of a dispensable organ, and then contemplated the rapid change incident to the escape of infectious material and consequent local or general peritonitis, we felt that the surgeon might be absolved from the charge of excessive zeal in his endeavor to impress upon the general profession the vital importance of an early and exact diagnosis, supplemented by an immediate operation whenever an operation was indicated.

Many other excellent papers were read.

Officers.—The following officers were elected for the ensuing year: *President,* Dr. J. F. Percy of Galesburg; *First Vice-President,* Dr. L. H. A. Nickerson of Quincy; *Second Vice-President,* Dr. James H. Stowell of Chicago; *Secretary,* Dr. E. W. Weis of Ottawa, reelected; *Treasurer,* Dr. E. J. Brown of Decatur, reelected.

Resolutions.—The following resolutions were adopted by the Society:

Resolved, That the Committee on Medical Legislation be instructed and the members of the Society urged to work for the passage of the bill by the next General Assembly of Illinois which shall provide that all bottles or packages containing drugs shall bear a statement on the label of the quantity or proportions of alcohol, narcotics, or other poisons which may be contained therein.

Resolved, That the Illinois State Medical Society directs its Committee on Medical Legislation and urges its members to do what they can to secure the passage of the Pure Food Bill now before the House of Representatives, except the amendment introduced into the bill by the House Committee, providing for the appointment of a Commission of Experts. It requests that this amendment, which would probably decrease the efficiency of the measure, be eliminated.

Resolved further, That the Committee on Medical Legislation and the members of the Society be requested to

oppose any amendment to this bill that would essentially change the provision of the bill as it came from the House Committee, requiring the labeling of medical packages containing alcohol, narcotics, and other poisons.

Resolved, That the Illinois State Medical Society directs its Committee on Medical Legislation, and urges its members to do what they can to secure the passage of the bill to increase the efficiency of the medical department of the army, which is now before the House of Representatives.

Resolved, That the Illinois State Medical Society fully endorses the campaign of education and of practical work against the nostrum evil in its various phases, and urges its officers and members to cooperate in every way to further this cause.

Hereafter Papers to Be Read Before the General Body.—It was also resolved that, as this was largely a society of general practitioners who are of necessity interested in all branches of medicine and surgery, the Committee on Scientific Work should be instructed for the next year's program to provide one day for the medical section, at which papers on purely medical subjects shall be presented; one day for the surgical section, at which papers on purely surgical subjects shall be presented; and one day for a joint meeting, at which papers on borderland subjects and subjects of mutual interest to all shall be presented.

Rockford was selected as the place for holding the next annual meeting, the third Tuesday in May, 1907.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held May 3, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

Memorial Address on the Late Dr. George Ryerson Fowler.—Prof. A. T. BRISTOW of Brooklyn, Ex-President New York State Medical Society, read this memorial.

Presentation of a Patient Shot Through the Abdomen, Liver, and Spinal Cord. Laparotomy, Laminectomy, Recovery.—Dr. IRVING S. HAYNES reported this case of V. C., Italian girl, twelve years of age, who was accidentally shot by a 32-caliber bullet, the entrance of the wound being at the left of the median line, three and one-half inches below the ensiform appendix. The bullet could be seen at the right of the middle line of the back, at the eleventh dorsal spine. Examination revealed a small pulse, extreme pallor, dyspnea, cold skin, restlessness, and thirst. The lower extremities were very hyperesthetic from the middle of the thighs downward. The legs were moved slowly and with difficulty. Ankle motion very slight. Dr. Moorehead operated, closing the orifices of entrance and exit in the liver with No. 2 chromic gut. The abdomen was made clean and the abdominal wound sutured. The bullet was removed. The lower extremities were still hyperesthetic and there was incontinence of urine and feces. The accident occurred on October 28, and on November 3 the patient showed anesthesia corresponding to the terminal distribution of the musculocutaneous, small sciatic, and external saphenous nerves, and motor and sensory paralyses of the anterior tibial, posterior tibial and its branches, and of the anus and vesical sphincter. There was also anesthesia of the skin of the buttocks, perineum, and inner side of the thighs. In view of the extension of the paralysis an exploratory operation on the cord was deemed advisable and a laminectomy was performed on November 3. The bullet had passed between the laminæ of the eleventh and twelfth dorsal vertebræ, close to the base of the spinous process of the upper one. Both laminæ were slightly notched by the bullet. The posterior arches of the eleventh and twelfth dorsal and first lumbar vertebræ were removed. No blood clot external to the dura was found. The dura had a small, round hole in its center at about the middle of the field. The cord showed directly in its center a small mushy area where it had been traversed by the bullet, though it was not severed. The dura was sutured with a fine catgut continuous suture. Heavier interrupted catgut was used for the deep muscles. A few silkworm gut strands were left in place for drainage. On November 8 the drain was removed and the wound healed *per primam.* The course of the case was very tedious, there being incontinence of urine and feces and constant pain in the legs below the knees. On November 13 there was slight general wasting of both legs, with absence of both knee-jerks and plantar reflexes. The galvanic current was used every other day and right-angled splints applied to the feet. By December 17 the patient had regained control of the bladder and rectum. By January 4 the patient had been out of bed for a week and pulse and temperature were normal. By January 23 all sensation above the level of the crest of the ilium was normal. Anteriorly, internally, and externally sensations were normal as far as the knees. On the outer side of the right knee pain and temperature sense were disturbed. There was complete anesthesia of the greater portion of the surface of the right foot. There was marked disturbance of sensation for pain and for temperature from the upper part of the buttocks to just above the knee. Flexion of the knee was very weak and of the right ankle it was absent. The patient walked with typical ataxia gait. On February 9 the general motor power was very much improved, but the right anterior tibial group was still paralyzed. The reflexes and sensations remained practically the same.

Dr. WM. M. LESZYNSKY, who had recently examined the patient, said that no knee-jerks were present, and that the weakness of the flexures of the thigh was more marked on the right side. There was also a slight foot drop on this same side. The condition of bladder and rectum was normal. The Faradic irritability in the perineal nerves was preserved. There was no marked atrophy. The Faradic irritability was quantitatively diminished in the muscles. The girl had made a decided improvement. The reflexes had always been absent. There was anesthesia for pain, touch, and temperature of the right leg.

Gunshot Wounds of the Spinal Cord: A Plea for Early Myelorrhaphy.—Dr. IRVING S. HAYNES said that this paper was written to advocate early interference in the worst cases of spinal injury, and while only gunshot wounds were dealt with, the argument, proof, and conclusions were equally applicable to the severer forms of fracture, dislocation, and traumatism. He described the pathology of this class of cases as limited to the findings within the spinal cord. The symptoms which followed cord injury were produced by an interference with the conductivity or interruption of the continuity of the nerve fibers, or a disturbance or destruction of the nerve cells reflected in various motor and sensory symptoms and alteration in the reflexes in parts situated below the seat of the lesion. There was no symptom or group of symptoms that would prove that the cord was severed within a reasonable time. As to treatment, he thought that all patients who survived the initial shock of the injury to the cord should be operated upon. The damaged region should be laid bare in order that the extent of the injury might be ascertained and the proper treatment instituted. The total mortality in non-operated cases was 69¼ per cent. and in operated cases 42½ per cent. It was generally conceded that laminectomy was imperative in the following conditions: (1) To remove the bullet, or spicules of bone or particles of clothing; (2) to remove blood clots; (3) to arrest hemorrhage; (4) to allow for oozing in traumatic edema of the cord; (5) to prevent pressure and sepsis by free drainage; (6) in advancing paralysis; (7) to suture a cord was a proposition not universally accepted, but it was upon this subject that he wished to devote his time.

The idea back of the advice for early interference was not to attack a severed cord, primarily, but to operate in the hope of finding and alleviating the less serious conditions, before compression of the cord had produced secondary de-

generation. As this set in at an early date operation must be correspondingly early. His reasons for radical operation were: First, in regard to the anatomical possibility of suturing severed cords where there had been loss of substance, the feasibility of suture of the cord had been demonstrated in the living when there had been separation of the ends to the extent of three-fourths of an inch. In work on the cadaver he had demonstrated that coaptation was possible after resection of three-fourths of an inch in the dorsal and one-half in the cervical regions. Such resection was followed by retraction of the ends of the cord to a much wider interval than was occupied by the segment removed. An essential step in the operation which rendered coaptation possible after the loss of three-fourths of an inch was full extension of the spine and head. He thought that cadaver work did not express the full possibilities of spinal-cord resection in the living. In the upper dorsal and cervical regions freer mobility and easier coaptations of the severed ends could be obtained by tearing off with a blunt hook the attachment to the dura of two pairs of the serrations of the dentate ligament above and below the site of the section. Second: As to the possibility of several cords uniting, it had been demonstrated that in animals hemisections of the cord always united. This was true of complete sections, though in the latter case there was a retraction of the ends and the interval was filled in with a blood clot, followed by a cicatrix. In human beings Chipault stated that the results following severance of the spinal cords by a stab wound were ordinarily complete recovery. In gunshot, fracture, and dislocation lesions attended by destruction of tissue the ends of the cord had been united in five cases with evidences of union of the severed ends in all. Third: As to whether such microscopical union was attended with true microscopical union or regeneration, experimental evidence of several observers after transection of the spinal cord found nerve fibers traversing the cicatrix, which were considered traceable to an efferent root adjacent, being able to trace them to a spinal ganglion. From an exhaustive paper by Strobe we learned that the fibers of the posterior roots, at the level of the lesions, grew out from the side of the spinal ganglions and pushed their way a distance between the fibroblasts of the cicatrix. These new fibers looked like the regenerating fibers of divided peripheral nerves. These fibers were not full size, and at the end of forty-five days had not produced anything like genuine regeneration of the cord. A study of these experiments proved very conclusively that in no case was the severed cord sutured, and consequently a blood clot formed which retracted to a greater or less extent, so that it was no wonder that continuity of the cord was not established in forty-five days. Several cases were cited where the cord had been sutured with apparent success. One case in the Montreal General Hospital was operated on eleven months after the injury had been received. The interval between the ends of the cord had increased to one and one-half inches and a segment three inches long of the spinal cord of a large dog was placed alongside of the severed ends of the patient's cord. This patient died a month later from an abscess of the right kidney. Autopsy showed that there was typical ascending degeneration of the columns of Goll and Burdach above the site of the lesion. Sections below the lesion showed definite degeneration in the direct and crossed pyramidal tracts. The dura and tissues at the site of the grafting showed a mass of minute myelin sheaths of nerve fibers which lay closely adherent to the dura and united with the segments of the cord above and below, demonstrating that regeneration of the axones of the spinal neurones had taken place to a limited extent. Two other cases by Estes and Fowler confirmed the preceding results. Every case of complete transverse lesion of the cord not operated upon had died in less than a year, while of the five operated upon one died in ten days and the others were living and improving, having lived from two and one half to eight years after the injury. As to the operation upon the spinal cord, the dura should be opened in every case for the full extent of the wound. Two or four traction sutures should be placed in the cut edge; they were better than clamps or tenacula and were not in the way. The bullet, spicules of bone, foreign bodies and blood clots should be removed, the latter preferably with a stream of saline solution. By drawing on the traction sutures and lifting up, the cord was brought into better view. If it was completely severed the bruised and lacerated ends should be carefully trimmed and then brought into coaptation. Fine chromic catgut sutures should be introduced well away from the severed ends, so that in tying they would not cut through the cord. One suture was passed anteroposteriorly through the center of the cord and the other two from side to side, one near the ventral the other near the dorsal surface of the cord. The trunk should be kept fully extended until the operation had been completed and a plaster jacket applied. The sutures should be tied in the cord, the mushroomed ends smoothed out, and the dura closely adjusted by three interrupted sutures. Drainage should be from the dura outward with strands of silkworm gut or strips of rubber tissue for twenty-four hours. Operation should be performed at the earliest possible moment after recovery from the initial shock of the injury or after dealing with the serious complications of abdominal or thoracic lesions. The after-treatment was important. Immediately after operation the indication was rest for the spine, the body being maintained in the fully extended position. The jacket could be removed in from two to three weeks and active electrical stimulation with massage and passive motion should be undertaken. Retention apparatus should be employed to prevent deformities in the limbs. The bladder should be carefully catheterized and irrigated and everything pertaining to the preservation of strength, nutrition, and comfort should be utilized.

Dr. George E. Brewer said that the case reported was a surgical triumph. His own experience with spinal surgery, however, for traumatism had led him to change his views. Following the advice of Boston surgeons and neurologists, who advised operating upon all cases of spinal injury, it was his practice to make an exploratory laminectomy in every case of fracture or dislocation of the spine, in the hope that he might, by the relief of pressure, removing the blood clots, etc., bring about a restoration of function. In five or six years not a single case received any benefit where there were evidences of a transverse lesion of the cord. Therefore he abandoned this plan. Dr. Brewer said that five or six years ago there was a patient at the City Hospital with a transverse lesion of the cord following a fracture in the mid-dorsal region. When the dura was seen it was found to be dark colored, but the cord was found to be apparently normal except that it was surrounded by blood clots. The removal of these clots was not followed by benefit. Death later resulted, and at autopsy the cord showed no grave lesions except the blood clots surrounding it. This led him to believe that many of these cases were due to the presence of blood clots. As yet there was no proof that complete transverse crushing injuries are benefited by operation. It was his habit now to discourage operations in all such cases; but where there were evidences of partial lesions he encouraged operation. Dr. Haynes' case was one of incomplete lesion of the cord in the upper segment, and the brilliant results obtained were due to this fact. In cases of gunshot wounds nothing can be definitely learned except by an exploratory operation, which he believed should always be done in such cases.

Dr. Samuel Lloyd considered the question of regeneration of the spinal cord and called attention to the fact that Dr. Dana was one of the first to take up this subject. Dr. Lloyd said he had had two cases in which he tried to get the cord together following complete transverse injuries. In one case he succeeded in getting the cord together and improvement followed. In the other case, one of gunshot wound in which the injury was in the fifth lumbar seg-

ment, a similar attempt was made, but little improvement resulted. Another consideration to be taken into account was not only how much improvement was due to the regeneration of the cord, but also how much improvement was due to the recovery of the cord from the injury or destruction. In all these cases he said there was apoplexy of the cord and improvement followed the absorption of these hemorrhagic areas. This should be taken into account before one decided that the full recovery of function was due to the regeneration of the cord itself. In fractures of the arch operation should be invariably undertaken, and early operation should be emphasized, giving a sufficient length of time first for the patient to recover from the shock of the injury, unless symptoms are present calling for immediate operation, such as increasing paralysis.

Dr. G. M. Hammond said that the case presented was a very interesting one, but he was not sure that the cord had been wounded at all—at least he did not believe the bullet had wounded the cord. The electrical reactions were normal; there was no muscular atrophy, there was no injury to the motor tract, no contractures, rigidity, clonus, exaggerated reflexes; in short, there were no symptoms which made it appear that there was any lesion of the motor columns of the cord. There was a loss of the muscular sense and sensory symptoms which showed the possibility of some lesion of the posterior roots or columns of the cord; but in the case reported it would have been impossible for the bullet to injure the posterior portion without some injury to its anterior portion. The fact, too, that the patient was improving was to him an argument that they were not dealing with a gunshot wound of the cord. Regeneration of a cord so torn by a bullet was impossible.

Dr. J. J. Moorhead said that at the time of the patient's entrance into the hospital there was little in her appearance that made them suspicious of spinal involvement because of the absence of gross sensory or motor paralysis. Then, too, the bullet was subcutaneously palpable well outside the median spinal line and there were no signs of bone splintering. The immediate diagnosis of abdominal hemorrhage from penetrated viscera was readily apparent, and when it was seen that only one edge of the liver was involved, surprise was expressed that it was possible for a bullet to traverse the cavity in the manner related without doing greater damage. The following morning the bullet was extracted, and the patient's complaints of sensitiveness in the lower extremities seemed so disproportionate to her good condition that she was thought be somewhat hysterical. With this definite destruction of spinal marrow, there was lack of absolute corroboration until the cord was exposed; in fact, the operation was performed under the impression that a hematomyelia had occurred. Surprise was again expressed when it was apparent that the bullet had traversed an intevertebral disk and there was little or no pressure, hemorrhage, or clot, and that the symptoms were due to a definite loss of tissue bored out by the traversing bullet as by an augur. With regard to the theories of restoration of function, he said that it appeared that such could take place on the basis of (1) regeneration of axones; (2) anostomotic action compensating for destroyed fibers; (3) vicarious action on the part of uninvolved sections; (4) union of individual fibers, as occurred in peripheral nerves, and (5) organization by blood clot. At the present state of our knowledge regarding spinal function the weight of authority was not with any one of the above, but he thought that further investigation would probably show that a combination of factors was responsible.

Prof. Trendelenburg of Leipzig said that a year and a half ago he and his assistants had made a great many experiments, cutting and suturing the spinal cords of twenty-five cats and dogs. The cats died but the dogs lived long enough to show results. Some dogs died at the end of a few weeks, some at the end of a few months, from kidney involvement. One of the dogs lived one year and two months. None of the dogs ever had regeneration of the cord or its fibers, so far as could be determined. The post mortem showed a mass of cicatricial tissue in the gap caused by the retracted cord. He thought that if the animals could be kept quiet other results would have been obtained; but in their moving about the ends of the cord were torn asunder.

Dr. Wm. M. Leszynsky said that the bullet went through the cord and that certain symptoms presented by the patient without any doubt pointed to the spinal lesion.

Dr. George Woolsey said that his experience in the treatment of fractures of the spine had been like Dr. Brewer's, and he had never had any good results from operation when there had occurred a complete severance of the cord. Where there was a fracture of the posterior portion of the spine, operation should be undertaken. The lower down the fracture, the better the prognosis. Operation should be more often undertaken the lower down in the column the fracture was; one could not be sure whether complete paralysis would occur until time had elapsed, and he believed the cases should be given the benefit of the doubt in the way of operative treatment. Personally he had but little faith in operating when there was a complete severance of the cord. He said he was not enthusiastic regarding suturing the spinal cord. The anatomical regeneration of the cord had not been proven, although he believed that a few of the nerve fibers might become regenerated. He called attention to a boy who was brought to Bellevue Hospital a year ago last February with a complete crushing injury of the cord, as evidenced by complete motor and sensory paralyses below a certain line. The symptoms persisted for weeks and he did not suppose the patient would ever be able to leave his bed. Later on he was surprised to see him up and around the ward. This boy recovered under expectant treatment and the results were as good as those obtained in Dr. Hart's case, in which the cord was sutured. It was astonishing how many and what good recoveries were reported after such a severe accident.

Dr. Charles L. Dana called attention to the brilliant success attending nerve suturing and grafts, and said that all knew that in cases of crushing injuries of the spinal cord no restoration of function could occur except by the renewal of spinal cord tissue. In certain locations he did not see why one could not take a motor nerve above the lesion, bring it down, and suture it to another motor nerve below. It seemed to him feasible.

Dr. Haynes, in answer to Dr. Hammond's statement that he did not believe the bullet had injured the cord directly, said that the bullet did go through the spinal cord and the case presented was a good argument that regeneration had taken place. One never knew just what happened to the cord after an injury, fracture, or dislocation unless one opened up the spinal canal. He thought that the cases reported that recovered from apparent transverse complete lesion without operation were open to serious questioning. There were a few cases of complete division of the cord where the patient lived for from five to eighteen years, but at autopsy it was found that the lesion had not been a complete one. This seemed to bear out the contention that all cases of complete transverse division of the spinal cord had died, and died within one year. The longest authentic case he knew of lived 265 days. The completeness of the recoveries had given rise to much debate, but whether the cord regenerated *in toto* or in part there seemed to be no doubt that there was some sort of union. Muscles that hitherto had not been capable of moving were moved; regions not sensitive before operation became sensitive after. He believed that the argument was a strong one that, in spite of the experiments performed upon animals, better results had been obtained in the case of human beings, and one must believe that there had been fibrous unions or that regeneration had taken place.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	August 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	October 1
Arkansas*	J. P. Runyan, Little Rock	Little Rock	October 9
California	Chas. L. Tisdale, 530 California Street, San Francisco	San Francisco	August 21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	October 2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Nov. 13
Delaware	P.W.Tomlinson, Wilmington	Dover	December 11
Dis. of Col'bia	W.C.Woodward, Washington	Washington	October 11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	October 17
Georgia	E. R. Anthony, Griffin	Atlanta	October 9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October 2
Illinois	J. A. Egan, Springfield	Chicago	October 17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October 23
Iowa	J. F. Kennedy, Des Moines	Des Moines	September
Kansas	T. E. Raines, Concordia	Topeka	October 9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October 19
Maine	Wm. J. Maybury, Saco	Augusta	
Maryland	J. McP. Scott, Hagerstown	Baltimore	December 12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept. 11
Michigan	B. D. Hanson, 205 Whitney Building, Detroit	Lansing	October 9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October 2
Mississippi	J. F. Hunter, Jackson	Jackson	October 9
Missouri	J. A. B. Adcock, Warrensburg	St. Louis	August 8
Montana*	Wm. C. Riddell, Helena	Helena	October 2
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	August 6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January
New Jersey	E. L. B. Godfrey, Camden	Trenton	October 16
New Mexico	B. D. Black, Las Vegas	Santa Fe	December 3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany Syracuse, Buffalo,	Sept. 25
N. Carolina*	Geo. W. Pressly, Charlotte		
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 3
Ohio	Geo. H. Matson, Columbus	Columbus,	December 11
Oklahoma	J. W. Baker, Enid	Guthrie	
Oregon*	B. E. Miller, Portland	Portland	
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	December
Rhode Island	G. T. Swarts, Providence	Providence	October 4
S. Carolina	W. M. Lester, Columbia	Columbia	June, 1907
S. Dakota	H. E. McNutt, Aberdeen	Watertown	January
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May, 1907
Texas	T. T. Jackson, San Antonia	Houston	October 16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	October 1
Vermont	W. Scott Nay, Underhill	Burlington	January 8
Virginia	R. S. Martin, Stuart	Richmond	December 11
Washington*	C. W. Sharples, Seattle	Spokane	January 2
W. Virginia*	H. A. Barbee, Point Pleasant	Clarksburg	Nov. 13
Wisconsin	J. V. Stevens, Jefferson	Madison	January
Wyoming	S. B. Miller, Laramie	Cheyenne	September 5

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

North Carolina.—At the examination held in May, 1906, there were 131 applicants; of this number 86 passed and 45 failed.

Texas.—From May 1, 1905, to April 10, 1906, there were 185 applicants for the State board examination; of these 112 passed and 73 failed. Under the reciprocity clause three licenses were granted, the States thus recognized being Virginia and New Jersey.

South Carolina and Georgia.—Reciprocal relations which formerly existed between these two States have been broken on the ground that the Georgia standard is not up to that of South Carolina. The Georgia board has been notified that South Carolina will not again reciprocate with their State until they raise their requirements

Illinois reciprocates under certain conditions with Indiana, Iowa, Kansas, Maine, Maryland, Michigan, Minnesota, Nebraska, New Jersey, North Dakota, Ohio, South Carolina, Vermont, Wisconsin, and Wyoming.

Indiana reciprocates under certain conditions with Georgia, Illinois, Iowa, Kansas, Kentucky, Maine, Michigan, Missouri, Nebraska, Ohio, Virginia, and Wisconsin.

North Dakota reciprocates under certain conditions with Illinois, Maine, Michigan, Vermont, and Wyoming.

New Jersey reciprocates under certain conditions with Illinois, Maine, Michigan, New York, Ohio, and Vermont. Her licenses are endorsed by Delaware, Illinois, Iowa, Kansas, Colorado, Maine, Michigan, Minnesota, Missouri, New York, Ohio, South Carolina, Texas, Vermont, Virginia, and Wisconsin.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the City, for the week ending July 7, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	343	161
Diphtheria	220	27
Measles	370	19
Scarlet Fever	103	6
Smallpox	—	—
Varicella	28	—
Typhoid Fever	45	10
Whooping Cough	36	4
Cerebrospinal Meningitis	27	16
Malarial Fever		
Totals	1,172	243

The Normal Microbism of the Appendix.—A. Gilbert and A. Lippmann have conducted a series of experiments in order to determine the normal bacteria of the appendix. These experiments deal solely with the rabbit and the dog, on account of the extreme difficulty of obtaining the human appendix free from all infection. These investigators conclude from their results that in the normal state the appendix in its entirety is the seat of a microbic flora of great variety and of extreme abundance. They also call attention to the preponderance of the colon bacillus.—*Le Bulletin Médical.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending July 7, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Connecticut, Stamford	June 1–30	1	..
Florida, Brevard County	June 23–30	1	..
Columbia County	June 23–30	4	..
Duval County	June 23–30	3	..
St. Johns County	June 23–30	1	..
Georgia, Sapelo Island	June 29	1	..
Louisiana, Shreveport	June 23–30	2	1
Massachusetts, New Bedford	June 23–30	6	..
Michigan, Detroit	June 23–30	1	..
Nebraska, Omaha	June 8–23	5	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	*April 21–28	1	..

*Received out of date.

SMALLPOX—FOREIGN.

Argentina, Buenos Ayres	April 1–30	..	159
China, Hongkong	May 5–12	8	6
France, Paris	June 2–16	13	..
Germany, Bremen	June 9–16	1	..
Great Britain, Liverpool	June 9–16	1	..
London	June 9–16	1	..
Greece, Athens	June 4–11	..	5
India, Bombay	May 29–June 5	..	7
Calcutta	May 19–26	..	35
Karachi	May 27–June 3	16	6
Madras	May 26–June 1	..	9
Rangoon	May 19–26	..	12
Italy, General	June 7–14	32	..
Japan, Yokohama	May 6–20	..	2
Russia, Moscow	June 2–9	6	4
Odessa	June 2–9	6	2

YELLOW FEVER.

Honduras, Pimienta	June 13–16	13	..
Mexico, Merida	June 17–23	17	7

CHOLERA—INSULAR.

Philippine Islands, Provinces	April 21–28	17	16

CHOLERA—FOREIGN.

India, Bombay	May 29–June 5	..	16
Calcutta	May 19–26	..	25

PLAGUE—INSULAR.

Philippine Islands, Manila	April 21–28	1	1

PLAGUE—FOREIGN

China, Hongkong	May 3–12	96	89
Egypt, Alexandria	June 3–12	5	3
Keneh	June 9–10	..	3
Port Said	June 8–9	2	1
India, Bombay	May 29–June 5	..	180
Calcutta	May 19–26	..	43
Karachi	May 27–June 3	80	73
Rangoon	May 19–26	..	39
Peru, Lima	May 25–31	1	.
Paita	May 25–31	1	1
Trujillo	May 25–31	1	..

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Original Articles.

MULTIPLE MOTOR NEURITIS, INCLUDING LANDRY'S PARALYSIS AND LEAD PALSY;*

WITH REPORTS OF CASES.

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CASES of rapidly developing paralysis of all four limbs are not common. Undoubtedly many classed as Landry's paralysis are caused by neuritis, but to assume that all have this etiology, as some writers have done, is unjustifiable. The literature of Landry's paralysis has become so extensive that it is inadvisable to review it. The subject has recently been discussed by Hans Lohrisch,[1] and the report of his case, among others, shows that Landry's paralysis may be spinal in origin. Lohrisch found disease of the gray matter in all parts of the spinal cord and medulla oblongata, as shown by hemorrhages, degeneration of medullary sheaths in the gray matter, degeneration of the nerve cells and of the anterior roots. He describes it as a diffuse acute poliomyelitis. The peripheral nerves were not examined. The patient had tabes also. There seems to have been no round-cell infiltration in the spinal cord.

The case of acute, rapidly-developing paralysis like that of Landry's paralysis, reported by one of us (Dr. Spiller[2]) in association with Dr. Sherman, showed much more intense alteration of the spinal cord than that reported by Lohrisch.

A recent case of acute ascending paralysis, with necropsy, reported by Edwin Bramwell,[3] is explained by him as the result of a toxic process acting upon the lower neurones. Degenerative changes were found in the facial and external popliteal nerves and tibialis anticus muscle. Bilateral facial palsy was an unusual complication of the acute palsy, and the paralysis first appeared in the face. The histological examination of the tissues for bacteria was negative.

Landry's paralysis is not always fatal. Some years ago one of us (Dr. Spiller[4]) reported a case of this type in which complete recovery occurred, and similar cases are recorded in the literature.

Buzzard[5] says that enlargement of the spleen and extensive pleurisy in the form of old or recent adhesions are found frequently in Landry's paralysis, and these lesions seem to indicate an infection.

A case of acute anterior poliomyelitis causing rapidly ascending paralysis has been reported recently by F. A. Hoch[6] with a review of the literature of this disease.

A case by Mills and Spiller[7] in which the peripheral motor neurones alone were affected was reported, with a careful review of the literature of the subject, in 1898. A still more recent paper on Landry's paralysis is by Peter Bassoe.[8]

Instead of discussing the subject of Landry's paralysis separately, we have preferred to include it under the heading of multiple motor neuritis. As already said, we do not ignore the spinal form of this symptom-complex.

The selective action of poisons for certain portions of the central or peripheral nervous system is one of the most striking facts of medicine. In uremia, whatever the intoxication may be, we see at times focal cerebral symptoms, and we are in the habit of explaining these on the theory of a locus minoris resistentiæ. Unquestionably similar symptoms are caused by arteriosclerosis, and we have been familiar with these at least more than ten years and have frequently referred to them, but to explain all uremic focal symptoms as the result of arteriosclerosis is unwarrantable.

In tabes, a metasyphilitic disease, we have the action of some poison on the posterior roots. Why the posterior roots should be implicated instead of the anterior we cannot say.

In tetanus we have the implication of the motor system, and in some cases paralysis of the facial nerve, a motor nerve. Alcohol and nicotine select the papillomacular bundle; diphtheria especially the nerve fibers to the ciliary muscle, and lead the distribution of the posterior interosseous nerve. Cramer[9] has referred to the fact that Arneth, on account of the appearance of the neutrophile leucocytes in the agonal period of Landry's paralysis and tetanus, made the inference that in both affections the central nervous system forms the point of attack of the infection. As Arneth puts it: "We shall hardly err if we ascribe to the poison of Landry's paralysis an exclusive affinity for the central nervous system."

Peculiar to Landry's paralysis is its irresistible course. Von Leyden in 1893 said that multiple neuritis requires less time for its development, and may become manifest very rapidly, and shows little tendency to the orderly extension, the gradual and steady progression, of Landry's palsy. Still, multiple neuritis of the ordinary type is at times confined to the lower limbs, in which Landry's paralysis usually develops, as in a recent case, with necropsy, observed by one of us.

Believing, as we do, that many cases with the symptom-complex known as Landry's paralysis are cases of multiple motor neuritis, we must seek a cause for the first manifestations of the paralysis in the lower limbs. The ingenious theory of Edinger may give us the answer. The nerves of the lower limbs are most employed, and therefore are most susceptible to poisons, and we have in Landry's paralysis, as in tabes resulting from another poison, the symptoms first manifested in the lower limbs.

*From the Department of Neurology, and Laboratory of Neuropathology in the University of Pennsylvania, and from the Ayer Clinical Laboratory, Pennsylvania Hospital. Read before the Philadelphia Neurological Society, April 24, 1906.

We have recently had an opportunity to observe three cases that might be classed as Landry's paralysis, two with necropsy, but we prefer to regard them as atypical forms of multiple motor neuritis, atypical in the rapidity of their development. Multiple neuritis sometimes develops very rapidly, and one of us (Dr. Spiller) has had recently in his service at the Philadelphia General Hospital a case in which complete paralysis of all four limbs with great tenderness of all the muscles of the limbs to pressure, developed in about twenty-four hours.

These three cases resemble one another closely in the rapidly developing motor paralysis. The sensory symptoms in the first two cases, in the opinion of some, would prevent the diagnosis of Landry's paralysis, but those sensory symptoms were much less pronounced than the motor. We have described the three cases together to show the common pathological basis. Sensory symptoms were not excluded by Landry. There is much confusion regarding what should be called Landry's paralysis, as shown by E. W. Taylor and J. E. Clark.[10]

In the first case (a man 52 years of age, a laborer, of good habits) the condition started with numbness in the right hand and slight disability. Twelve hours later the hands were paralyzed, the legs weak, while in thirty-six hours a complete paralysis of all four limbs had developed. The paralysis was accompanied by pain in the calves of the legs and in the shoulders. These pains persisted ten days. The patient was examined four weeks after the onset of the disease; at this time there was complete flaccid paralysis of both upper and lower extremities, with absence of deep reflexes. The muscles of the arms and calves and the ulnar nerve were slightly tender to pressure. The sensations of temperature, pressure, and pain were normal. Control of the bladder and rectum was preserved. The head was not involved; the eyegrounds were normal; there was no fever. The muscles showed no marked alterations to electrical stimuli. After several months a small amount of voluntary motion of all four limbs was regained.

In the second and third cases death occurred and the course of the disease was rapid.

The second patient was a man, 60 years old, who had been a moderate drinker; he developed a sudden paralysis of both arms and legs. There were no premonitory symptoms, the patient waking one morning to find himself helpless. This paralysis was accompanied by numbness, pain in the lumbar region which shot down the inner side of the thigh to the toes, and pain in the arms. There was dyspnea, inability to cough, and difficulty in starting urination. On admission to the hospital two days later there was complete paralysis of the upper and lower extremities and of the diaphragm. The deep reflexes were absent. Sensation was unimpaired in the upper extremities, but on the inside of the thighs areas of anesthesia were found to alternate with areas of hyperesthesia. The sensory symptoms were comparatively slight. The paralysis ascended rapidly. The shoulders became involved; the voice was lost; swallowing became impossible, until finally, four days after the onset, the patient suddenly had dyspnea and died. Just before death he had incontinence of urine and feces. There was no fever. The autopsy findings as regards the nervous system were entirely negative. There was chronic aortic endocarditis and chronic nephritis. Macroscopic and microscopic examination of the spinal cord and brain showed no lesions. The peripheral nerves were not obtained. Bacteriological examination proved negative.

The third case differs from the other two in that there were no sensory disturbances, which, however, were not intense in the other two cases. The patient, a man 60 years old, who had been a painter for fourteen years but had not had lead colic, felt one evening a heavy sensation in his legs. The next morning his legs were weak, and in twenty-four hours they were partially paralyzed. The paralysis rapidly ascended. In two days the arms were affected and there was difficulty in swallowing. There was no pain and no incontinence of urine or feces. He was admitted to the hospital five days after the onset, and showed then almost complete paralysis of both upper and lower extremities with loss of all the deep reflexes except for a slight plantar response. Sensations were perfect. The paralysis rapidly became more profound and ascending and involved the muscles of the thorax and shoulders. The voice was lost, swallowing became impossible, dyspnea developed, and on the eighth day after the onset there was sudden cyanosis and death. The temperature remained normal. At autopsy there was an acute bronchopneumonia and chronic nephritis. The brain could not be examined. The spinal cord appeared normal on macroscopic examination. A microscopic study showed slight but distinct degeneration of the internal plantar and one other nerve; extensive changes in the anterior horn cells of the lumbar region, and marked fatty degeneration of the gastrocnemius muscle. Again the bacteriological examination was negative.

Finally, in the last case, one of typical lead palsy, examination of the central and peripheral nervous systems showed extensive degeneration of the anterior horn cells in the lumbar and cervical regions of the spinal cord, with pronounced degenerative changes in the left brachial plexus and moderate degeneration of the ulnar nerve.

In the first case sensory symptoms were of short duration, whereas the motor symptoms were persistent; in the second case also the sensory symptoms were not very pronounced, and in the third case they were entirely absent throughout the course of the disease. The last of these three cases is one that belongs clearly to the group of Landry's paralysis, but the microscopical examination showed that the symptoms were caused by degeneration of the motor cells of the anterior horns of the spinal cord, of the motor fibers in the peripheral nerves, and of the muscles. This case is remarkable in that the recent degeneration of the muscles as shown by the Marchi method is intense and out of proportion to the alteration of the nerve cells of the anterior horns and to the degeneration of the nerves. To these three cases of motor neuritis, in all of which the paralysis of all four limbs developed within twenty-four or forty-eight hours, we have added the unpublished case of lead palsy, with necropsy, as an example of still another form of multiple motor neuritis.

To multiple neuritis also belong at least some of the cases of the neurotic form, or muscular atrophy.

The reports of these cases in detail are as follows:

Case I.—Gano, aged 52 years, was referred to one of us (Dr. Spiller) by Dr. D. W. Shelly of Ambler, Pa., and was admitted to the University Hospital February 27, 1905, when the following history was obtained: He has been a laborer all his life, working principally on a farm. He has been married twenty-two years; does not drink, smoke, or chew tobacco, and says he never has done so. He denies venereal diseases and has eight healthy children.

Four weeks previous to admission he first noticed numbness of his right hand about 6 P.M. He was unable to use his knife and fork properly at the sup-

per table that evening, with his right hand, but had no difficulty with his left. About the time he was ready to retire he found that the numbness was becoming more marked, and he was unable to unbutton his clothes. The following morning he could not use either his left hand or his right, and numbness was felt in both hands and arms. The lower limbs also were first noticed to be weak and numb, and he had some difficulty in walking and was obliged to hold on to the furniture as well as he could with his weak hands. On the evening of the same day he attempted to go upstairs and found that he was unable to do so. His legs gave way beneath him and he was obliged to sleep downstairs. That evening he began to experience dull and sometimes shooting pains in his calves, in his shoulders, and back.

The following morning he was completely paralyzed in all his limbs, but had no difficulty in urination. The pains continued ten days, after which they disappeared.

He has not had incontinence of urine, but urination is a little slow, and the bowels are somewhat constipated. He had severe diarrhea three or four days before the paralysis developed.

The notes of the examination soon after his admission are as follows: He draws up his shoulders very slightly, and the right a little more than the left. There is very little distention of the abdomen when he breathes deeply, and he seems to have paralysis of the diaphragm. Respiration is very shallow and is mostly costal in type. When he attempts to breathe deeply both sternocleidomastoid muscles contract. The upper limbs are completely paralyzed and flaccid. The skin of the hands is rough and desquamative, especially on the palmar surfaces. The biceps and triceps tendon reflexes are completely lost on each side. The sensations of touch, pain, and temperature are normal in both upper limbs and over the front of the trunk. The muscles of the upper limbs and the ulnar nerves are tender to pressure. Squeezing the hands causes much pain.

The lower limbs are completely paralyzed except that the man can draw each limb upward a little at the hip. The patellar tendon and Achilles tendon reflexes are lost on each side. Babinski's reflex is not obtained, the toes not moving in either direction from irritation of the sole of the foot. Both calves and feet are very tender to pressure. Sensations for touch, pain, and temperature are normal in the lower limbs and there is no distinct atrophy of these limbs.

March 6, 1905. The cranial nerves are not implicated, and sensation in the face is normal. The pupils are equal, and the pupillary responses are normal. The head is moved freely from side to side. The heart, lungs, and abdominal viscera seem to be normal.

Dr. de Schweinitz's examination of the eyes revealed nothing abnormal. Dr. Potts made an electrical examination and reported as follows:

"March 16, 1905. *Right leg:* All muscles respond to a strong faradic current (all but one inch of secondary coil) excepting peroneals and rectus femoris, which do not respond. *Flexor longus digitorum* requires somewhat weaker current than the other muscles.

"Left leg: All respond to strong faradic current, slightly better than those of right leg.

"Right arm: All muscles, also those of shoulder, pectorals, and abdominal muscles respond to strong faradic current, but not so strong a current is required as for the leg (secondary coil two inches from end).

"Left arm: All muscles respond to slightly weaker current than is required for the right arm.

"Right leg: Tibialis anticus, flexor longus digitorum, gastrocnemius, soleus, show quantitative decrease. K Cl C > An Cl C. No modal change. Peroneals quantitative decrease. An Cl C > K Cl C. Modal change. Rectus femoris, An Cl C > K Cl C. Modal change. Vastus internus, An Cl C > K Cl C. Other muscles of thigh, K Cl C > An Cl C. Tendency to modal change in adductors, irritability about normal.

"Left leg: In muscles below the knee, K Cl C > An Cl C. In soleus slight modal change, quantitative decrease. In vastus externus, An Cl C > K Cl C. Slight modal change in other muscles of thigh, no change in irritability.

"Right arm: K Cl C > An Cl C in all muscles, irritability about normal, excepting in ulnar distribution, where it is increased and An Cl C is relatively greater than normal.

"The same holds good for the left arm.

"With the faradic current the muscular contractions did not cause any motor effect. Galvanic current did cause motor effect in arms, but not in legs."

The patient did not have any fever, and after some months regained a small amount of voluntary movement in all the limbs, sensory disturbances having entirely disappeared.

Case II.—Dr. C. C., 60 years of age, physician, was a patient in the service of Dr. A. V. Meigs at the Pennsylvania Hospital. On admission he complained of paralysis of the arms and legs.

Family History: Father died of apoplexy, aged 84; mother died of old age at 88; one brother living, aged 63, has hemiplegia; one sister died recently from dropsy and hemorrhage from the bowel. Three daughters and one son living and well. One uncle died of apoplexy; one brother living and well, a minister.

Personal History: Had typhoid fever when 16 years of age; has had no other disease. Was graduated from the University of Pennsylvania Medical School in 1870, then practised in Virginia, later in Iowa, and for the last fifteen years in Philadelphia. Uses alcohol moderately; chews tobacco moderately; no drugs (?). Had lumbago, which stiffened his legs, about ten years ago. No venereal history.

Present Illness: About two years ago the patient awoke in the morning with severe "lumbago," which also passed around his waist and made his legs stiff so that he could not get out of bed. He also had pain in his hips and numbness in his feet. He was in bed with the attack four or five days and gradually improved. Since then he has had no trouble with his legs at all. Day before yesterday when he awoke in the morning he found that he could not move his arms or legs; he had been perfectly well the evening before, and can think of nothing he had done in the direction of unusual exertion, except a fall on his hip five days before. He has had since the onset a feeling as of pins and needles in his extremities, and pain in the lumbar region, which shoots down the inside of his thighs to his toes when he is moved. This morning he has had slight pain running down the inside of his arms. He has had no headache, loss of consciousness or convulsions. Bowels have not moved since the attack; has had slight difficulty in starting urination. There is dyspnea, inability to cough, but no dysphagia. He has had no trouble with vision. (Had a blow in his right eye in 1889 and three years later Dr. Harlan did a tenotomy; the eye has been blind since it was struck.)

Physical Examination: Patient is a large, well-

nourished man, lying on his back; slightly dyspneic, apparently employing only the upper part of his chest; abdomen retracts with each inspiration (no Lytton's sign); skin of trunk and extremities covered with an eruption consisting of small crusts, evidently arising from scratching. Urine: dark amber; mucoid sediment; acid, 1,028; no albumin or sugar; few hyaline casts. On the shins are three or four large pustular lesions covered by dark crusts. Right eye: (optic atrophy) has been blind for eighteen years; pupil small and immobile, internal strabismus. Left eye: pupil is eccentric, being nearer the lower part of the cornea; apparently it reacts normally. No facial paralysis; tongue slightly coated, protruded straight, no tremors. Movements of neck normal except that he cannot raise his head very high. He can flex the fingers slightly and extend the right leg slightly. He can also raise his shoulder. All tendon reflexes in the extremities are absent. No plantar reflex; no Babinski; tactile and pain sensations in the upper extremities are normal. There are irregular areas of anesthesia in the thighs, and in other areas there is apparently hyperesthesia. The patient complains of a great deal of pain in his hips. Lungs: anteriorly are normal. Heart: O. C. D. normal, sounds clear, regular and of fair tone. Liver and spleen: negative. Abdomen: negative.

January 22. Patient died yesterday about 4 P.M. About 2:30 P.M. he suddenly became exceedingly dyspneic and cyanosed. The pulse remained very strong and he was conscious until late. In the morning he was unable to raise his shoulders or to speak above a whisper, and complained of heaviness of his chest. At noon he was unable to swallow; had incontinence of urine; bowels did not move. Average temperature, 97; average respiration, 25; average pulse, 90.

Autopsy No. 652; Hospital No. 3,311. January 22, 1905. *Anatomical Diagnosis:* Chronic diffuse nephritis; chronic aortic endocarditis; cardiac hypertrophy; acute splenic tumor; cloudy swelling of liver; congestion of brain; congestion of viscera; rupia (?).

The body is that of a fairly well-built old man, 172 cm. in length. Rigor mortis well marked. Much purplish discoloration of dependent parts. Left pupil dilated, right contracted. On arms, chest, back, abdomen, and legs are numerous small, raised black scabs, averaging about the size of a pinhead and occasionally running into streaks. On the inner surface of the right arm, most marked at the elbow, are very small ecchymotic spots. Over the anterior surface of both tibiæ there are several large raised crusts, varying from 1 to 2.5 cm. in diameter. Six of these are on the right and one on the left leg, from which the scabs have been removed. The scabs are piled up towards the center, having a slightly purplish skin margin, which is dried and over which the epidermis scales off in concentric rings. External genitalia apparently normal. The abdominal fat measures 3 cm. in thickness and is orange colored. The muscles are rather pale.

Abdominal Cavity: The omentum is small and contains a good deal of fat. Peritoneal surfaces are smooth and glistening. The intestines are pinkish or gray in color and rather collapsed. Appendix measures 11 cm. in length, lies pointed upward behind the cecum in the retroperitoneal tissue, is patent to tip and apparently normal. The liver is bound to the diaphragm by fibrous adhesions. Diaphragm extends to third interspace on right side and to fourth interspace on the left side.

Thorax: The lungs are voluminous and meet in mid line. Both pleural cavities are free from fluid and adhesions. Pericardial cavity contains a small amount of clear, straw-colored fluid.

Heart: Weight, 390 grams. The heart is quite large, the cavities are filled with fluid blood and red post-mortem clots. The pericardium is smooth and glistening and contains a good deal of fat. The tricuspid and pulmonary valves are thin, delicate, and apparently normal. The mitral leaflets are also quite delicate; the aortic flaps, although large, are a little thickened and present calcified patches at the bases of the sinuses of Valsalva which stiffen the attachments of the leaflets. The heart muscle is firm, beefy, and red in color. The left ventricle is hypertrophied; the wall measures from 15 to 20 mm. in thickness, and the cavity is small. The aorta is large; the wall is not thickened, and the surface is exceedingly smooth. Coronary arteries are large and patulous. Auricular appendages are free from thrombi.

Lungs: The left lung is fairly large, rather heavy and soggy, especially in the posterior portion. The anterior portion of the upper lobe is lobulated, mottled dark gray, red, and black. Posterior portion of the upper lobe and lower lobe present a smooth, bluish-gray surface. The pleura is everywhere smooth and glistening. Lung is everywhere crepitant. On section cut surface oozes blood and frothy fluid, is deep purplish-red in color, soft and crepitant, except for a few indefinite red patches in the lower lobe. Bronchi at root are congested and contain bloody mucus. Vessels are clear. The right lung is in general like the left. The lower lobe is quite heavy and soggy. Crepitation, though present, is generally decreased. On section there is general congestion and edema, and one sees indefinite small solid patches in the lower lobe and a few more definite, raised, grayish, granular patches in the upper lobe. Bronchi and vessels at root are like right lung.

Spleen: Weight, 120 grams; measures 13 x 12 x 4 cm. The spleen is of medium size, regular, exceedingly soft and mushy. Color is a pale violet. The capsule is roughened and thickened in many places. Posteriorly it is firmly adherent to the diaphragm. On section the pulp is soft, almost diffluent and of a pale, muddy, red color. Malpighian bodies seem to be very large and indefinite; trabeculæ not very prominent.

Liver: Weight, 1,680 grams. Size, 26 x 18 x 10 cm. Liver is large, regular, and decreased in consistency. Capsule is adherent over a large portion of anterior surface to diaphragm and is torn in removing the organ. Color is a uniform light reddish-gray. On section the cut surface is smooth; the lobules are well marked, the centers being red and the peripheries gray, so that the surface has a slightly fine mottled appearance and is generally opaque and cloudy. Portal connective tissue is not specially increased. Bile ducts are patent. Gall-bladder is apparently normal.

Kidneys: Combined weight, 220 grams. The left measures 12 x 4.5 x 5 cm. It is fairly large, regular, and firm. The capsule strips with a little difficulty, leaving a finely granular, dark red surface showing a few injected stellate veins. Here and there, three small yellow points the size of a pinhead are seen. On section the kidney substance is decreased in proportion to the pelvic fat, but is still present in fair amount. The striæ are well marked, usually irregular, occasionally a little distorted. The medullary pyramids are large, dark, and streaked with purple. The cortex is from 6 to 10 mm. in thickness and is red in color. Vessels are injected. The glomeruli are large and purple in color. Pelvis and ureter apparently normal. The right kidney measures 12 x 6 x 3.5 cm. The surface shows two small yellow pits. In all other respects the kidney

is like the left. Adrenals are apparently normal. Testes apparently normal. Urinary bladder, prostate, seminal vesicles apparently normal.

Stomach and Intestines appear normal except for some congestion.

Brain: The brain is of medium size and fairly regular, although bulging a little over the parietal lobes. The dura mater is thickened and adherent to the pia in places. The pia is slightly thickened. The vessels are congested. At the base the vessels are very delicate and collapsible. The ventricles are not dilated. No macroscopic lesions are found.

Spinal Cord: Both the dura and pia mater are delicate; there are no adhesions between them. Vessels are congested. The general appearance is normal. On section the white matter seems very faintly mottled in many places by yellowish patches. This is irregular, but seems to affect most of the posterior portion of the cord. Left eye appears normal.

Aorta: The ascendnig arch is quite smooth; in the descending arch, about the opening of the greater vessels, there is an irregular, circumscribed patch about 2 cm. in diameter, which is yellow or cream-colored, raised, scarred, softened, and in some places calcified. Throughout the abdominal aorta there are localized, nodular, yellowish and cream-colored swellings varying from the size of a pea to 1 cm. in diameter; they are rather soft and have a fairly smooth surface. They are particularly numerous about the openings of the blood-vessels. Iliac vessels are free from thrombi. There is no general enlargement of the lymph nodes.

Microscopical Examination.—Heart: There is an excess of pigment about the nuclei of muscle fibers, with some fatty degeneration; no increase in connective tissue.

Lungs show marked congestion, and in places the alveoli contain large cells filled with brownish-black pigment, a little coagulated serum, red blood corpuscles, and polymorphonuclear leucocytes.

Spleen: The capsule is thickened and contains a good deal of yellowish-brown pigment. The pulp shows a patchy congestion, with general hyperplasia of the cells. The Malpighian bodies are large and in some the germinal centers are swollen and show central necrosis. There is some thickening of the intima of the blood-vessels.

Liver: There is well-marked congestion, with some parenchymatous and fatty degeneration of the liver cells. The portal connective tissue is slightly increased.

Kidney: There is much congestion, and the cortex presents slight proliferative changes. In the connective tissue descending from the capsule there are many small round cells. The tubular epithelium shows parenchymatous degeneration. Most of the glomeruli are engorged with blood; a few have undergone complete fibroid change.

Aorta: There is an extreme grade of irregular fibrous thickening of the intima, with fatty degeneration, deposits of cholesterin crystals and calcified material. The media suffers little change, though there is some degeneration of the elastic fibers.

Sections of the spinal cord, stained in hematoxylin and acid fuchsin (midlumbar and cervical regions). No definite alterations can be made out. The vessels of the pia and the smaller vessels of the cord are delicate and show no thickening. The cells of the anterior horns stain well by the thionin method, but are much pigmented. Marchi sections also are normal. Unfortunately peripheral nerves were not obtained.

Case III.—A. L., 60 years of age, painter; was in the service of Dr. A. V. Meigs, Pennsylvania Hospital. Complains of paralysis of arms and legs.

Family History: Father died of diabetes; mother of accident; two sisters have diabetes. No other family disease; no nervous disease. Has three healthy children.

Personal History: Has never been sick in his life, except for a few slight attacks of rheumatism. Had gonorrhea when about fifteen years old; never had chancre; drinks whiskey occasionally, but never to excess; never had lead colic; no injury in recent years (barrel fell on him many years ago). He has been a painter for fourteen years and at the onset of this attack was in perfect health.

Present Illness: Last Friday night (five days ago) patient noticed, while going upstairs, that he had a feeling as if heavy weights were in his hip pocket; also when he stooped down he had difficulty in rising. He slept well that night, and had no discomfort, but in the morning found that his legs were so weak that he could not stand to dress himself and he could put on only one of his shoes. By evening he could not raise himself because of weakness in his back. On Sunday his hands and arms began to be weak, and swallowing became difficult. Since then there has been no change except that the existing paralysis has become more complete. There has been absolutely no pain since the beginning of the attack. There has been no loss of sensation, or perverted sensation; no loss of control of the bladder or rectum. No dyspnea. Bowels have been moved by laxatives.

Urine: amber color, clear, acid, 1035; albumin, very faint trace; no sugar, few hyaline casts. Hemoglobin, 95. Leucocytes, 4,900.

January 24.—*Physical Examination.*—Patient is a fairly well-nourished old man, apparently no older than he is; speaks distinctly and intelligently; soon becomes tired of lying in any one position, but otherwise has no complaint. Pupils and movements of eyeballs are normal; no facial paralysis; can turn his head from side to side, but cannot raise it from the pillow. Tongue is protruded straight; some difficulty in swallowing, but he is able to get down liquids fairly well; is able to shrug his shoulders and can move his right arm a little, but grip with the right hand is very weak. Complete paralysis of the left arm; sensation as elsewhere apparently normal for tactile and pain sensations. Abdomen protrudes with each inspiration (Lytton's sign present); can extend the toes and move both ankles very slightly; plantar reflex present to a slight degree; no Babinski; both knee jerks absent; no ankle clonus; no apparent atrophy; control of bladder and rectum normal.

January 25. Had a restless night; swallowing difficult; paralysis about the same; voice not so strong as yesterday; no pain; much mucus in throat.

January 26. Sleeps very little, mind perfectly clear; voice weaker, sometimes whispering; grip of right hand is noticeably weaker; is fed from a medicine dropper; had to be catheterized for the first time this evening; no difficulty in respiration, but complains very much of the mucus which collects in his throat.

January 27. Cannot speak above a whisper today; had to be catheterized this morning, but later urinated involuntarily. Bowels have not moved since admission; cannot move his right hand this evening; about 4 P.M. became cyanosed and complained of dyspnea; also of pain in his legs, and the pain later moved to the small of his back. Entirely unable to swallow since noon; chest does not expand with respiration; diaphragm moves; slightly

irrational this P.M.; pulse weak and rapid; profuse perspiration.

January 28. Died at 10:10 P.M. For three hours previously had been semi-stuporous, but was able to answer questions; had to be propped up to get his breath; pulse very weak and rapid; breathing stertorous towards the end, but was regular; this suddenly became shallow and in less than a minute ceased entirely.

Average temperature, 99; respiration, 28; pulse, 90.

Autopsy. No. 653. Hospital No. 3378.

A. L. January 28, 1905; aged 60 years; performed by Dr. Longcope.

Anatomical Diagnosis. — Acute bronchopneumonia; congestion of liver, kidneys, and abdominal viscera; chronic interstital splenitis and hepatitis; chronic diffuse nephritis; chronic fibrous pleurisy.

The body is that of a well-developed man, 170 cm. in length. Rigor mortis is marked. Slight post-mortem discoloration over dependent parts. Pupils equal and dilated. External genitalia normal. No edema of extremities.

Abdominal Cavity: The omentum is quite large, contains a good deal of fat, and lies in the upper part of the cavity. Peritoneal surfaces are smooth and glistening, but slightly injected, mottled pink, and brownish yellow. The appendix measures 5 cm. in length hangs over the brim of the pelvis, is free, and the lumen is obliterated throughout. Diaphragm extends to the fifth space on the right side and to the fifth rib on the left side.

Thorax: Lungs are voluminous and collapse on removal of the sternum. The right pleural cavity is free from fluid and adhesions. The left pleural cavity contains cobweb-like fibrous adhesions. Pericardial cavity contains a slight excess of clear, straw-colored fluid; serous surfaces are smooth and glistening.

Heart: Weight, 240 grams. The heart is of medium size, epicardium is smooth and glistening, contains a good deal of fat, and shows at one point over the right ventricle a milk patch the size of a quarter. The vessels are prominent and the lymphatics somewhat dilated. Cavities are filled with soft, red post-mortem clots, but are not greatly dilated. All the valves are exceedingly thin, delicate, and normal. The endocardium is everywhere thickened and gray in color. The heart muscle is fairly firm, cloudy, and brownish-red in color. The left ventricle averages from 12 to 15 mm. in thickness. Coronary arteries are patulous and their walls are fairly delicate. The aorta is quite smooth and delicate except for a few yellowish cross-streaks above the aortic leaflets. Auricular appendages are free from thrombi.

Lungs: The left lung is large, rather heavy and soggy. Anteriorly the color is gray and the lung is lobulated. Posteriorly it is smooth and deep purplish in color. Over the apex the pleura shows small, thick, white cartilaginous areas of thickening, and in one or two other points there are similar patches two or three centimeters in diameter. There is some air everywhere throughout the lung. On section the cut surface is deep purplish-red in color and oozes frothy blood and serum. Scattered everywhere throughout the lower lobe are numerous small raised purplish-gray areas, slightly granular and firm; they average about 0.5 cm. in diameter. Bronchi at the root contain some bloody mucus. Vessels are clear. The right lung is rather small, somewhat retracted, and the pleura is covered with fresh fibrous adhesions, so that the lung is torn in many places during removal. The organ is heavy and contains very little air, the lower lobe being almost entirely solid, but at the same time rather soft and flabby. On section the lung presents a deep purplish-red, moist surface, from all parts of which bloody fluid filled with air bubbles exudes. The middle lobe and anterior portions of the upper lobe are crepitant. The remainder of the lung presents large, irregular, solid patches which are sometimes smooth and red, but more often raised, granular, and grayish. Between these areas of consolidation there is usually a little air contained in the lung. Bronchi at the root are congested and contain a little mucus. Vessels are clear.

Spleen: Weight, 90 grams; size, 10 x 7.5 x 4 cm. The spleen is small, regular, and much decreased in consistency. The color is pale lilac. Capsule is wrinkled, shows a little thickening, and is free from fibrous tags. On section the cut surface is a little rough, trabeculæ being coarse, increased, and prominent. The color is mottled gray and red. Malpighian bodies are quite large and pale.

Liver: Weight, 1,410 grams; size, 24 x 21 x 6.5 cm. The liver is of medium size, fairly regular, and quite firm. Over the anterior surface of the right lobe the capsule shows a scar-like area of thickening, about 8 cm. in diameter; this does not extend into the liver substance. There is also a little thickening over the anterior surface of the left lobe; elsewhere the capsule is delicate, although the surface is a little irregular. The color is a uniform brown. On section the cut surface is slightly granular, brown mottled with red. The lobules are well marked and regular, their centers are red, peripheries brown. Portal connective tissue is a little increased. Bile ducts patent. Gall-bladder is normal.

Kidneys: Combined weight, 250 grams. The left measures 12 x 5 x 4 cm. It is of medium size, regular and firm. The capsule is slightly thickened, strips with difficulty, leaving a finely granular, uniform purplish-red surface. On section the kidney substance is slightly decreased in proportion to pelvic fat. The medullary pyramids are fairly large, slightly irregular, and streaked with purple; cortex is deep red and well defined, is somewhat irregular and measures from 4 to 8 mm. in thickness. The striæ are well marked and regular; glomeruli are injected. Pelvis and ureter apparently normal. The right kidney is like the left. Adrenals are apparently normal. The urinary bladder contains several cubic centimeters of cloudy urine; mucous membrane is deeply congested and purplish-black in color about the trigonum. The prostate is large across the lateral lobes, which measure 5 cm. from right to left. On section it is soft and has a spongy appearance. Seminal vesicles and testes apparently normal. Pancreas is apparently normal.

Stomach is congested and shows hemorrhages on the crests of the rugæ.

Intestines are apparently normal. The *aorta* is quite smooth throughout the arch. In the thoracic portion just above the bifurcation of the iliacs, the wall is partly calcified, but thin, and the intimal surface is smooth. Iliac vessels are free from thrombi.

Spinal Cord shows some congestion of the pial vessels. The dura mater and pia are thin and delicate. There is a small amount of clear fluid in the arachnoid space, but otherwise normal to the naked eye. Muscles of the calf appear normal. Permission to open the skull could not be obtained.

Microscopical Examination. — Heart: Muscle fibers are small and show an excess of pigment about the nuclei. There is some increase in the connective tissue of the large trabeculæ.

Lungs show marked congestion and edema, with patches of bronchopneumonia where the alveoli are filled with leucocytes, red blood corpuscles, and a little fibrin.

Spleen shows a patchy congestion, with some increase in the connective tissue of the pulp. The Malpighian bodies are large and their margins ill-defined. There is some thickening of the intima of the blood-vessels.

Liver shows some congestion, with parenchymatous degeneration of the cells.

Kidney shows slight increase in connective tissue of the cortex, with swelling and parenchymatous degeneration of the cells of the convoluted tubules. The glomeruli are as a rule congested. Many hyaline casts are seen. The intima of the blood-vessels presents a moderate grade of thickening.

Bacteriological Examination. — Cultures made by Dr. Robinson from the left lung yielded *Micrococcus lanceolatus* and an unidentified bacillus. Cultures from heart's blood showed no growth after forty-eight hours at 37° C.

Spinal Cord. Lumbar region: The sections appear to be normal except that in many of the nerve cells of the anterior horns the chromophilic elements have become granular and the nucleus is displaced to the periphery of the cell. The alteration of the nerve cells is distinct, but not intense. The pigmentation of the cells is pronounced. The anterior and posterior roots are normal. Cervical swelling: The condition of the spinal cord at this level is much the same as in the lumbar region. No alteration is seen by the Marchi method. Sections of the sciatic nerve are normal. Pieces of the right obturator, internal plantar, and posterior tibial nerves were examined, but the portions of nerves removed had become mixed. In two of these smaller nerves some degeneration is observed by the Weigert hematoxylin stain. Slight but distinct degeneration in the form of many black granules is found in the right internal plantar and the left internal popliteal nerves when fibers are teased in the fresh state and stained by osmic acid. Swollen axis cylinders are seen in one of the small nerves. When a nuclear stain is employed the muscle appears normal, except that there may be a slight increase in the sarcolemma nuclei. Nerve fibers within the muscle are normal.

Case IV.—J. L. A., 67 years of age, was at first in the service of Dr. Alfred Stengel, at the Philadelphia General Hospital, and was then transferred to the service of Dr. Spiller.

July 16, 1904. He had been a painter since he was 14 years of age. He first began to have weakness with his upper limbs in 1876, and has had six or seven attacks (probably of paralysis) in these limbs since. Two weeks ago he stopped work, complaining of diarrhea and loss of power in his upper limbs. He has not had headache nor pain anywhere. Has lost his appetite. He could walk when he had his shoes on without much difficulty. He is emaciated and anemic, and his face appears edematous. Pupils are equal and react sluggishly. He has no blue line on the gums. Pulses are equal and easily compressible; vessels do not show much sclerosis. Chest is somewhat emaciated, supraclavicular spaces are sunken, interspaces are wider than normal. Lungs are resonant and no râles are detected. Rough breathing is heard over the anterior surface of the right lung at the upper part. Heart dullness is about normal in outline; sounds are not very strong; no murmurs. Liver dullness extends from the upper border of the sixth rib to two fingers' breadths below the costal border. Spleen not palpable. Epigastric pulsation is marked.

He has bilateral wrist drop, with much atrophy of thenar and hypothenar eminences. In the lower extremities there is palsy and atrophy of the peroneal groups of muscles. The skin of the feet and legs is glossy, and there is some swelling and pitting upon pressure. He shows a marked intention tremor of the hands. Patellar tendon reflex is diminished; biceps tendon reflex seems to be normal. He has not had any pain or disturbance of vision.

August 15, 1904. He is very feeble, and examination is unsatisfactory because of stupor. He does not obey commands. He moves his head freely from side to side; does not take his nourishment now, but has not had any difficulty in swallowing. The wrist drop is very pronounced on each side, but he is not paralyzed in the muscles of the shoulders, as he can voluntarily place both upper limbs above his head. The fingers of each hand, especially those of the right hand, are somewhat cyanotic. The biceps tendon reflex is weak on the left side and uncertain on the right. The triceps tendon reflex is not obtained on either side. The muscles of the arm of each side are wasted, but not so much as those of the forearms. Each forearm and each hand are much wasted, but the extensors on the back of the forearms are more wasted than the flexors. He has not been seen to move his lower limbs, although he has some power in the muscles of each thigh. The lower limbs are flaccid except at the ankles. The feet are in the position of talipes equino-varus and cannot be passively straightened. The lower limbs are much wasted, especially in the peroneal group of muscles. The patellar reflex is entirely lost on each side. Achilles tendon reflexes cannot be obtained. Babinski's reflex is uncertain on the right side, there being no distinct movement of the toes on account of the contractures. This reflex cannot be tested on the left side, because of an amputation at the metatarsophalangeal articulations. He has incontinence of urine and feces. His mentality is much obtunded.

Pathological Diagnosis.—Brown atrophy of heart, senile emphysema, chronic interstitial nephritis.

Microscopical Examination. — Lumbar Region: The nerve cells of the anterior horns are much altered; the chromophilic elements in most of the cells, instead of being rod-shaped, appear as fine granules. The posterior and anterior roots are normal. There are no signs of meningitis. No degeneration can be detected by the Marchi method.

Midthoracic Region: Sections from this region present no secondary degeneration of the posterior columns, and the posterior roots at this level are normal.

Cervical Region: Sections stained by thionin show disintegration of the chromophilic elements like that of the lumbar region. Outside of the changes in the nerve cells, sections of the cervical region seem to be normal.

Paracental Lobule (left and right): The cells of Betz show slight disintegration of the chromophilic elements and much pigmentation, but on the whole the nerve cells are in a fair state of preservation. The proliferation of the endothelial cells covering the pia is not distinct in this case as it was in the former case of lead poisoning reported by one of us (Dr. Spiller), although a slight indication of it is detectable.

Left Brachial Plexus: Sections here show a pronounced partial degeneration both by the Weigert hematoxylin and acid fuchsin stains, but there is no degeneration by the Marchi method.

Pieces of the right ulnar nerve and of the left brachial plexus do not appear much degenerated by

the 1 per cent. osmic acid stain. It is unfortunate that more peripheral nerves were not obtained.

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DIET IN TUBERCULOSIS.*

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From time immemorial, the human race has paid its tribute to consumption, and it is fairly certain that from the start a proportion, sometimes great and sometimes small, of those affected, have been able by conscious effort or otherwise, to throw off the disease and recover. It is equally safe to assert that where this has occurred it has always been primarily by virtue of an improved nutrition—however accomplished.

There is a very general impression to-day, not confined to the medical profession by any means, that if we "build up the patient the disease will take care of itself," and it is also generally conceded that the requisites to this building-up process are essentially —good food, pure air, and proper rest. Other factors there are, to be sure, which may contribute toward the desired result—climate, light, water, drugs, etc., but they are of secondary importance.

So far then, the problem seems easy of solution, and it is not surprising in view of the apparent simplicity of the prescription, that the question is sometimes asked: "Why, then, if this is all that is required, do not more consumptives recover?"

But is the prescription after all so simple as it appears? What is *good* food? Is there such a thing as a *standard* diet? Will the same relative proportion of proteids, fats, and carbohydrates which serve so well with A be equally productive of good results in B? Is it merely a question of calorific values? The same with air; which may be equally pure at sea level or at an altitude of 5,000 meters. Where can pure air be found which will be most efficacious for the consumptive? What degree of relative moisture is most desirable? And have we any standards of pure air applicable to all consumptives alike, or even to all of a single class? Again with rest: How far should we carry restrictions as to exercise? Under what conditions can rest be most advantageously secured? Is there not a very real danger of falling into the thraldom of routine in our practice with regard to rest for the tuberculous invalid?

These are some of the many questions which I fear have not received that scientific scrutiny which characterizes so much in modern medicine.

In combating tuberculous disease, the means at our disposal are of a necessity limited, and for this reason if for no other, it would seem that they should be applied with all the more care and circumspection. Yet I am of the opinion that nowhere else in the practice of medicine is there a more extravagant or indiscriminate misuse of the means at hand than we are forced to see in the prescriptions for good food, pure air, and proper rest which are given to the consumptive patient "to apply as required" upon his own initiative. It is, as it were, to tell a patient with syphilis that mercury is a cure for his disease and leave to his own untrained and imperfect judgment the selection of the preparation, the dosage, and the mode of administration.

We must not forget that in such a matter as that of diet, while there is no doubt a standard of excellence, it is an *individual standard* rather than a *class standard* and must be worked out with as many variations almost as there are patients, if the best results are to be obtained. One patient may do well and recover on the coarse fare of a Canadian lumber camp, while another's success may depend upon the most cunning exercise of the culinary art.

But, although it may not be possible to formulate a dietary acceptable as a standard for tuberculous invalids as a whole, there should be no difficulty in agreeing upon certain fixed principles generally applicable and which should serve as a basis upon which to build the group or individual dietary.

For instance, we should arrive at some definite conclusions regarding the food requirements of the organism in the presence of certain pathological conditions and under identical climatic influences. We should determine the amount and relative proportions of proteids, fats, and carbohydrates per kilo of body weight required to nourish properly the consumptive whose disease is in abeyance and whose weight, temperature, and pulse are normal. Of course such a standard could serve only as a working basis. The real difficulties of the problem follow, for it is one thing to determine what the system requires and quite another to know how best to supply it in a form to be available to the tissues.

But even a working basis, however limited, its application, would be an improvement over the present chaotic state of our information with regard to diet in tuberculosis. Consider in what manner we are in the habit of advising our patient in this respect. We have explained to him the nature of his malady, and have exhausted our eloquence in impressing upon him the vital necessity of hyperalimentation as the primal factor in combating his disease. We have given him a list of foods which he must take in addition to three generous meals a day. Safe to say at the head of this list are the ubiquitous milk and raw eggs, to be consumed in as large quantities as the patient can manage! We have advised that he eat meat three times daily, take large quantities of fat, and limit his vegetables chiefly to those of a leguminous nature. This prescription for a dietary, and you know I have not exaggerated, reminds one of the original Warburg's tincture; something out of the whole ought surely to hit the mark, and if the patient can survive the effects of the balance he ought to get well.

A case in point came under my observation not long ago. It was that of a young man of twenty years. For a month previous his diet had consisted of three hearty meat meals a day, and in addition he had taken three liters of milk and twenty raw eggs, every twenty-four hours. I asked him if his physician had ordered this and he replied: "No, not exactly, but he told me to eat all the meat I could and to take as much milk and as many raw eggs as I could stand besides; and I found I could not stand any more than this without vomiting!"

*Read before the National Association for the Study and Prevention of Tuberculosis, at its Second Annual Meeting, held in Washington, D. C., May 16-18, 1906.

He had gained something like nine kilos (twenty pounds) in weight during the month, but as may be imagined, his digestion was hopelessly ruined and in the course of time he died. Roughly estimated, this young man was daily taking into his stomach 375 grams of albumin, 350 grams of fat, and 500 grams of carbohydrates, representing a total of 6,842 calories. I regret to say that I do not think this a very unusual instance, but it well demonstrates the unwisdom of open prescriptions and illustrates the grave danger of leaving a tuberculous patient to his own initiative.

Much good work has been done in the study of food metabolism, with a result of determining approximately the amount of food necessary to maintain good health in a normal, adult human being. Represented in calories, the generally accepted standard is thirty to thirty-five calories per kilo of body weight while at rest, and about forty calories per kilo of body weight for an individual under the ordinary conditions of life.

The relative proportions of the classes of food stuffs going to make up this number of heat units are theoretically, proteids, twelve; fats, five; and carbohydrates, fifty (Voit's Standard). However, not only the relative proportions but the daily total of food must necessarily vary with varying conditions, both of the individual and of his environment, and these conditions are so manifold and complex when it comes to treating the tuberculous invalid, that it becomes at once apparent how impossible it is to arrive at any specific standard of diet generally applicable in the presence of this disease.

Moreover, it is very doubtful if the last word has been said as to the food requirements of a healthy human being. I am inclined to believe that we have been making a fetich of proteids and fats and have paid too little attention to the carbohydrates.

A good digestion, of course, simplifies the problem. Given a sufficiently generous diet, nature will attend to the demands of the organism. There need be no anxiety as to the relative proteid, fat, and carbohydrate content of the ingested food, and in such cases the appetite alone is a sufficient criterion.

A good digestion, however, is rather the exception than the rule. Digestive disturbances are the most common antecedents of tuberculosis, and are apt to continue as harassing complications throughout the course of the disease. Thus with a poor digestion and assimilation, it is of the greatest importance not only to ascertain approximately the digestive capacity of the individual for the several elements, but to avoid overfeeding, either in total quantity of food or excess of any constituent element. It is often astonishing what can be accomplished with a little patience and study in improving nutrition in a dyspeptic consumptive, simply by judicious restrictions and tentative modification of relative proportions of ordinary food constituents. On the other hand, the results of most painstaking effort are not infrequently disappointing and discouraging, and, without being able to ascribe a cause, we may be forced to see a patient continue to lose weight and strength even while ingesting an amount and variety of food more than sufficient to sustain a robust working man.

Such a case recently came under my observation at the Sanatorium:—A woman, thirty-four years of age, weighing 62.302 kilos (137 1-16 pounds), with a barely demonstrable incipient lesion of the right apex, no bacilli in the very scant expectoration (they had been demonstrated, however, a month before), no elevation of temperature, and a normal pulse. The estimated normal weight for a woman of her height and years was 62.7 kilos (138 pounds), but a year prior to her admission she had weighed 71 kilos (156 pounds). She was thus considerably under her maximum weight. Her appetite and digestion were apparently excellent, her bowels and kidneys functionated normally, and she was not homesick. During a residence of three months, however, she continued persistently to lose weight, although not in large amounts, and this on a diet which was varied from time to time, but which averaged over 3,000 calories per day, or 48 calories per kilo of the patient's body weight.

The daily food régime in this case was about as follows, estimating the amount consumed:—*Breakfast* 8 A. M.: Cereal, two eggs, two glasses of milk, one slice of bread or toast; *Lunch*, 10.30 A. M.: Egg-nog, made with two eggs; *Dinner*, 1 P. M.: Soup, roast, two vegetables, salad, desert; *Lunch*, 3.30 P. M.: Egg-nog, made with two eggs; *Supper*, 6 P. M.: Cold meat, bread and butter, two glasses of milk, fruit; or approximately 130 grams albumin, 156 grams fats, and 260 grams carbohydrates. It will be noticed that these proportions vary somewhat from those usually indicated for healthy individuals under ordinary conditions of life in that the proteids are slightly increased, fats greatly increased (more than three times the amount called for in Voit's Standard), while the carbohydrates are diminished relatively about 50 per cent. Yet I believe that this diet comes nearer the average prescribed for the tuberculous invalid with a quiescent lesion than may be supposed.

During the fourth month of this patient's sanatorium residence, a rather radical change was made in her dietary with a view of checking the weight loss. Proteids were cut down to less than 120 grams and fats were reduced not to exceed 60 grams per day. This was largely accomplished by substituting skimmed for whole milk and by cutting out the yolks of eggs. At the same time, the carbohydrates were greatly increased, an effort being made to reach 500 grams per day and thus more nearly approximate the regulation standards. The results, however, were not very flattering. Further loss was, to be sure, checked, but on discharge at the end of the fourth month the patient had gained back but two or three hundred grams of the three kilos lost during residence; yet in this case the patient *felt well*, enjoyed her food, and apparently completely overcame the pulmonary lesion.

In rather striking contrast to this is the following case:—A girl, seventeen years old, with an extensive lesion and cavity in the right lung and a considerable area of infiltration deposits in the left lung, daily elevation of temperature, accelerated pulse, appetite poor, digestion and elimination fairly good, distinctly an infirmary case; notwithstanding which this patient made very satisfactory gains in weight, on a diet representing only 81+ grams albumin, 102+ grams fats, and 215 grams carbohydrates, a total approximately of 2,315 calories, or as the patient's weight was 43.5 kilos, 53.2 calories per kilo.

At the same time, in an adjoining room in our infirmary, a young woman, with a very similar pulmonary condition and constitutional reaction, but with some digestive disturbance, rapidly lost weight on a diet averaging 106.4 grams albumin, 128 grams fats, and 215 grams carbohydrates, a total approximately of 69.5 calories per kilo of the patient's body weight.

Of course it is not merely a question of the amount and latent heat value of fuel put into the furnace, but of even greater importance, the completeness of the actual combustion upon which depends the total of energy derived.

The theoretically ideal diet utterly and inevitably fails to accomplish its purpose when there is not the power to metabolize it to the requirements of the tissues. Indigestion, malassimilation, defective elimination, whether dependent upon psyconeurotic causes or upon profound organic changes, bring about one and the same result so far as body nourishment is concerned, and this is what makes the real problem of nourishment in the consumptive patient.

Suppose we have ascertained by experiment that an individual can metabolize satisfactorily 100 grams albumin, 50 grams fats, and 200 grams carbohydrates daily, but cannot exceed this amount without giving rise to more or less disagreeable symptoms. While we may be perfectly aware that this total falls below prescribed standards and may not suffice to produce phenomenal weight gains, I am strongly of the opinion that in the long run better results will be obtained from this small diet than will follow a stuffing process with a diet two or three times beyond the individual's capacity for metabolism. Hyperalimentation may be an excellent practice in certain cases under constant skilled supervision, but indiscriminately applied it is capable of working irreparable mischief.

The tuberculous patient, with a quiescent lesion and good digestion, like the healthy individual, undoubtedly eats more than his body actually requires, but here nature takes care of the unused residue and no harm ensues. Not so, however, in the consumptive with an active lesion and a tendency to digestive disturbance. Here unabsorbed food products and such as have been incompletely broken up become an actual menace in the alimentary canal and too often are responsible for the most serious complications.

In the institution, experience and a little common sense soon work out a very satisfactory mixed diet applicable to the average patient presenting a favorable prognosis, such as are admitted to most sanatoria. This, I confess, is usually accomplished without recourse to scientific research.

With a view of establishing a working standard so to speak, for certain classes of tuberculous invalids, the following experiment was recently made at the Annex of the Loomis Sanatorium:—

Twelve patients, equally divided as to sex, were selected with reference, first, to similarity of pulmonary condition, all but one with quiescent or arrested lesions, and that one with but a very moderately active lesion. Second, with reference to similarity of weight, the men, represented in the table following by 1 and 6 inclusive, averaging 11 or 12 kilos more than the women, represented in the table by the numbers 7 and 12 inclusive. And third, with reference to a close approach of each patient to his or her normal weight. It will be noticed, that in all but one case, the patients were slightly below the indicated standard. Nevertheless the appearance was that of a very well nourished group of individuals.

These patients were placed at a table by themselves, and their food, while not differing from that of the other patients, either in quality or quantity, was accurately weighed and recorded for a period of fourteen days.

The test patients' net weights were ascertained after breakfast in the usual manner employed at the Sanatorium, at the commencement of the test and again at its close. The urine and feces were weighed and superficially examined during the test, but as it was not practicable at the time to do certain work with the feces which alone could have made the observation valuable, the feces record has been omitted. In the case of the urine, the twenty-four hour amount, specific gravity, and total solids were estimated and recorded; but no exhaustive analyses were attempted, and thus the records have no value as indicating the proteid metabolism or nitrogen output, except in a most general way. At the close of the experiment the food actually consumed by each individual was totaled in its several constituents and separated into its albumin, fat, and carbohydrate content respectively. From these totals daily averages were ascertained. The fuel value, estimated in terms of large calories, was also recorded. It is here necessary to explain some minor discrepancies which may be noticed between the calorific values in the following tables.

Authors differ somewhat in estimating the heat-producing value of various articles of food, and instead of following the plan of working out each item separately I have, whenever possible, taken the calorific value as given in the work most convenient to hand at the moment. Chiefly, I have had recourse to the excellent tables compiled by Atwater and Bryant, and published at the Government Printing Office. These tables are undoubtedly the most reliable of any available for use in this country, although they differ often considerably from the German and French tables, probably owing to the difference in food composition and methods of cooking. But in some instances I have employed tables of other authors, and as the figures obviously can be no more than vaguely approximated, I have not deemed it necessary to reconcile them.

The following menu represents an average of that employed during this experiment, and does not differ materially from the food régime of the Annex of the Sanatorium during the past winter. It may be of interest to note that this dietary has cost the institution, during the past six months, on a basis of forty patients, 35 cents per patient per day, about one-third of the cost of the more elaborate dietary provided for the patients in the main division of the Sanatorium, yet of about the same practical value:

MENU.

BREAKFAST—7.30 A.M.

	Grams.	*A.*	*F.*	*K.*	*C.*
Fruit	71	3.02	0.22	19.99	87.55
Cereals	41	2.43	0.32	14.04	70.38
Bacon, etc.	7	0.97	3.42	0.00	11.89
Eggs	100	14.40	11.30	0.00	163.70
Breadstuffs	37	2.37	5.76	18.67	102.13
Butter	8	0.08	6.80	0.00	63.66
Milk	347	11.45	13.88	17.35	248.80
Cocoa	129	6.26	37.28	48.63	660.61
Coffee	102	0.00	0.00	0.00	0.00
Total	842	40.98	88.98	118.68	1,408.72

MORNING DIET—10.00 A.M.

	Grams.	*A.*	*F.*	*K.*	*C.*
Milk	380	12.54	15.20	19.00	273.46
Eggs	50	7.20	5.65	0.00	81.85
Total	430	19.74	20.85	19.00	355.31

DINNER—12.30 NOON.

	Grams.	*A.*	*F.*	*K.*	*C.*
Soup	145	4.29	0.00	0.72	67.93
Fish	9	1.71	0.11	0.00	8.14
Meat	49	10.17	10.51	0.26	140.91
Vegetables	133	4.08	2.89	18.11	115.33
Breadstuffs	38	3.86	1.76	22.74	126.23
Butter	8	0.08	6.80	0.00	63.66
Milk	347	11.45	13.88	17.35	248.00
Desserts	62	2.21	4.09	20.43	132.76
Total	791	37.86	40.04	79.61	902.96

AFTERNOON DIET—3.00 P.M.

	Grams.	*A.*	*F.*	*K.*	*C.*
Milk	380	12.54	15.20	19.00	273.46
Eggs	50	7.20	5.65	0.00	81.85
Total	430	19.74	20.85	19.00	355.31

SUPPER—5.30 P.M.

	Grams.	A.	F.	K.	C.
Cereals	15	0.52	0.20	3.78	19.94
Meat or Fish	49	8.20	6.39	2.36	105.51
Vegetables	55	1.67	0.29	10.95	54.74
Breadstuffs	26	2.39	0.09	12.68	65.07
Butter	8	0.08	6.80	0.00	63.66
Milk	347	11.45	13.88	17.35	248.79
Fruit and Cake	58	1.09	1.35	20.37	102.38
Tea	81	0.00	0.00	0.00	0.00
Total	639	25.40	29.00	67.49	660.09

EVENING DIET—7.30 P.M.

	Grams.	A.	F.	K.	C.
Milk	380	12.54	15.20	19.00	273.46
Total	380	12.54	15.20	19.00	273.46

	Grams.	A.	F.	K.	C.
Breakfast total	842	40.98	88.98	118.68	1,408.72
Morning diet total	430	19.74	20.85	19.00	355.31
Dinner total	791	37.86	40.04	79.61	902.96
Afternoon diet total	430	19.74	20.85	19.00	355.31
Supper total	639	25.40	29.00	67.49	660.09
Evening diet total	380	12.54	15.20	19.00	273.46
Total	3,512	156.26	214.92	322.78	3,955.85

The results of this experiment are given in detail in the following table:—

Case No	Pulmonary Condition	Pulse Range	Temperature Range	Daily Exercise	Average Daily Food Allowance: Albumin	Fats	Carbohydrates	Total Cal'r's	Cal'r's Per Kilo	Normal W'ght	W'ght before	W'ght after	Gain, Gms.	Loss, Gms.	Excretions: Urine	Sp Grav.	Total Solids
1	Disease arrested	92–120	97.2°– 98.4°	2 hrs.	215.33	241.47	442.01	4940.76	80.30	64.318	61.462	61.803	340	....	cc. 1950	1.014	gms. 63.60
2	Quiescent	96–108	97° – 99°	2 "	136.24	141.68	289.12	3061.60	47.95	66.679	63.844	63.957	113	....	1200	1.020	55.92
3	"	76–96	97.4°– 98.8°	None	198.54	215.72	311.54	4097.52	62.13	80.287	65.318	66.565	1247	. .	2100	1.016	78.28
4	"	80–104	96.6°–100.6°	½ hour	149.95	168.64	203.42	3386.17	52.48	71.668	64.524	64.638	114	. .	1800	1.016	67.10
5	Disease arrested	76–92	97.4°– 98.6°	2 hrs.	189.58	236.56	357.49	4443.00	65.93	68.947	70.875	71.668	793	.....	2700	1.014	88.07
6	" "	84–100	98.4° 99°	None	183.90	201.71	336.89	4011.14	64.07	62.596	62.596	63.617	1021	.....	1800	1.020	83.88
7	" "	84–108	97° – 98.4°	1 hour	158.66	199.30	328.64	3851.42	76.84	53.524	50.122	51.597	1475	. . .	900	1.020	41.94
8	Quiescent	84–96	96° – 97.6°	1 "	164.76	118.44	344.13	3187.94	59.56	56.600	53.524	54.885	1361	. . .	1950	1.012	44.52
9	"	96–120	97° – 99°	None	125.19	129.81	231.43	2649.38	54.84	61.236	48.308	48.862	454	.	1350	1.016	50.32
10	"	80–108	96° – 98.6°	1 hour	197.85	217.88	412.27	4527.78	83.88	54.885	53.978	54.772	794		900	1.018	37.34
11	Mod. active	72–120	98.4°–100.4°	None	177.72	184.01	310.29	3719.71	76.60	55.330	48.535	49.215	680	.....	1500	1.014	48.93
12	Quiescent	72–128	98° – 99.2°	"	95.20	96.27	206.98	2134.25	44.08	59.875	48.421	47.741	.	680	1200	1.015	41.94
	Average, 12 patients, 14 days				166.08	179.34	322.02	3667.39	64.06	.....	...	.	.....	.	.	..	.....
													763 gms.				58.49 gms.

It will be seen by reference to the table that eleven of the twelve patients made satisfactory, though not phenomenal gain in weight, averaging 763 grams (about 1 pound 10 ounces) per patient. So far as calories per kilo of body weight are concerned, it will be noticed that Patient Twelve, who lost 680 grams during the experiment, was consuming about the same as Patient Two, who made a gain of 115 grams.

On the other hand, Patients One, Seven, Ten and Eleven, who consumed about 80 calories per kilo of body weight, averaged a gain of 712 grams, while Patients Two, Four and Nine, who consumed under 55 calories per kilo, averaged but 227 grams, and Patient Twelve, who as above remarked, fell below 50 calories per kilo, lost 680 grams.

The total solids in the urinary excretion follow roughly in each case the amount of the proteid in the food consumed, and in so far indicate that about the same relative proportion of albumin ingested was metabolized by each patient.

On the whole, this dietary has seemed to us to meet, in a fairly satisfactory manner, the requirements of the class of tuberculous invalids treated in the Annex division of the Loomis Sanatorium. Nevertheless, I have felt that the proteid constituent in the dietary has been in excess of the tissue needs, and, if so, that an unnecessary and perhaps harmful tax was thus imposed upon the organs concerned in proteid metabolism and elimination.

If, as Folin has so ingeniously suggested (*New York Medical Journal*, March 3, 1906), the urea output does not at all, or but slightly, represent tissue catabolism, but, on the contrary, merely the unused and consequently superfluous product of metabolism of the proteids of the food, then it is obvious that whenever urea excretion is considerable, the proteid constituent of the diet is in excess of the body needs, and it is well known that in quiescent cases of tuberculosis on heavy proteid diets, the urea excretion exceeds the average for a healthy person under the ordinary conditions of life, just as occurs in the normal individual under otherwise similar circumstances. This is certainly a matter deserving further inquiry.

A further experiment was undertaken at the Sanatorium Annex, with a view of determining the effects of a diet rich in carbohydrates and relatively poor in proteids, as compared with a heavy proteid diet, poor in carbohydrates. But, as the plan adopted in this experiment could not be satisfactorily carried out in the time intervening before the date of this meeting, I cannot at this time report upon it.

Generally speaking, a tuberculous invalid without acute symptoms may be given a properly proportioned diet of from 45 to 80 calories per kilo of body weight, without danger of overfeeding; but one must exercise vigilance, for there are many exceptions to this general rule. For instance, I have a patient who does well and gains weight upon about 2,500 calories per day, divided as follows:—88 grams albumin, 129 grams fat, 197 grams carbohydrates; but whenever I have attempted to increase this diet I have been met by digestive disturbance and weight loss. In this case the diet represented about 48 calories per kilo of the patient's weight.

Phenomenal weight-gains in patients who have come under treatment greatly underweight, satisfactory as they are to the patient and to his family, should at once arouse a suspicion of overfeeding; an investigation in such cases not infrequently discloses the fact that the diet is approaching 100 calories per kilo, which is certainly a danger point, however well the patient may look and feel for the time being. In acute cases with high temperatures and rapidly destructive lesions, a heavy proteid diet is quite as much out of place as it would be in typhoid fever. Yet nourishment must be supplied if we expect to change the type of the process. It is in such cases that an almost exclusive milk diet best serves the purpose—raw, cooked, or variously modified, milk is the food with the widest range of useful-

ness in these cases. Three liters of whole milk, divided into unequal portions, the largest to be given at ordinary meal times, can be taken by most patients without inconvenience every twenty-four hours, and represent 99 grams of proteids, 120 grams of fat, and 150 grams of carbohydrates, or 2,137 calories. This is, of course, insufficient for the body needs in such cases, and will not prevent weight loss but it will check it, and will give the organs concerned in digestion, assimilation and elimination, the least strain at a time when it is most urgent to save the patient all unnecessary expenditure of energy.

As the type of the disease changes, which fortunately it does more often than might be expected, this milk diet must, of course, be supplemented and gradually superseded, for it cannot with safety be indefinitely continued.

In advanced cavity cases much underweight and without appetite but without acute symptoms, the ordinary three or four meals a day will not serve. Such patients cannot or will not undertake the effort of eating a sufficient amount, however attractively it may be served from the regular trays. It has been our custom, in the infirmary of the Loomis Sanatorium, in such cases to substitute a two-hour diet for the regular meals. The following is a fair representation of such a dietary and answers the purpose very well. It is subject, of course, to more or less daily modification to meet the whims and tastes of different patients or of the same patient on different days.

	Grams.	*A.*	*F.*	*K.*	*C.*
6 A.M.—Milk	190	6.27	7.60	9.50	136.23
8 A.M.—Cocoa	120	25.92	36.91	45.24	614.52
Toast	28	3.22	0.44	17.12	87.74
Cereal	80	2.24	0.40	9.20	50.32
10 A.M.—Eggnog	215	11.76	11.44	8.00	188.38
12 M.—Soup	120	3.48	0.00	0.60	55.56
Scraped beef	37	8.36	103.00	0.00	43.91
Bread	42	4.07	0.38	20.58	106.13
Butter	27	0.28	23.80	0.00	222.82
2 P.M.—Cocoa	120	25.92	36.91	45.24	416.52
Crackers	6	0.21	0.17	1.43	8.41
4 P.M.—Beef juice	96	4.70	0.57	0.00	24.62
Milk	190	6.27	7.60	9.50	136.23
6 P.M.—Rice	30	0.84	0.03	7.32	34.74
Custard	40	1.93	2.90	12 00	84.08
Egg	45	6.48	7.04	0.00	73.66
Toast	28	3.22	0.44	17.12	87.74
8 P.M.—Milk	190	6.27	7.60	9.50	136.23
10 P.M.—Milk	190	6.27	7.60	9.50	136.23
Total	1,794	127.71	254.83	221.85	2,644.07

It will be seen that such a dietary for a patient weighing about 45 kilos (100 pounds) is equal to slightly over 60 calories per kilo of body weight. In such cases as would require a two-hour diet of this kind, I do not believe it wise to increase the proteid constituent, nor do I think anything is to be gained by increasing the fats; but when weight gain is not forthcoming after reasonable trial on such a diet, the carbohydrate constituent may be gradually increased to 350 or 400 grams, and if well borne by the patient will very likely result in weight gain and generally improved condition.

The nitrogen content of the urine alone is not a safe indication of the metabolism of the proteids of the ingested food, especially in the presence of a pathological process, such as a more or less active tuberculosis; for, as a rule, in direct proportion to the activity of the disease process the nitrogen output is increased, and thus it is not infrequent to find in the urine of such patients much more than sufficient nitrogen to represent the complete metabolism of all of the proteids ingested in the food. Of course, the excess at least must represent tissue catabolism.

I am not aware that much has yet been published on this subject with especial reference to tuberculosis. Investigation to be of value here involves a more tedious and painstaking study of the feces in connection with the urine and food than is often convenient to make. Yet it seems to me the matter is of sufficient importance to justify thorough research.

Recently four infirmary patients, whose condition indicated a two-hour diet like that described, not only failed to gain, but actually lost weight in a two weeks' trial, notwithstanding that in each case the diet represented over sixty calories per kilo of body weight, and that the nitrogen content of the urine represented on an average the metabolism of over 86 per cent. of the total proteids of the food ingested. I give in the following table the individual record of these four patients.

Case.	Av. daily proteid consumed—grams.	Av. daily urea output—grams.	Estimated av. daily metabolized proteids in urine—grams.
1	127.71	33.80	136.50
2	127.71	23.40	94.00
3	127.71	23.00	92.50
4	127.71	30.00	120.00

It will be seen that in Case I of this group the nitrogen content of the urine indicated the metabolism of actually more proteid than was contained in the food, and Case IV almost an equal amount, yet this latter patient was without fever or other symptoms indicative of activity, although much underweight and with a very extensive lesion.

In all of these cases, if a careful examination of the feces had been practicable, it would no doubt have shown that not sufficient proteids had been metabolized from the food to give a plus nitrogen balance, notwithstanding the generous allowance ingested. In view of such experience, one is tempted to accept the conclusions to be drawn from the remarkable experiments of Professor Chittenden, and to apply them to the tuberculous invalid. But much as I incline to the view that we have rather overestimated the value of proteids in tuberculosis, the question has not yet been sufficiently studied to justify any very radical departure from accepted methods.

It is quite impossible within the prescribed limits of this paper to consider in detail the many and various phases of the diet question as applied to the tuberculous invalid. It is certainly more than a question of calories, and it cannot be solved merely by arriving at theoretical standard amounts and relations of proteids, fats, and carbohydrates.

The tastes, habits, and peculiarities of individuals, even their heredity, are important factors. Variety, preparation, and the manner of serving of foods are matters which have a bearing upon the success or failure of the treatment, and the psychotherapy, which must and does enter into all successful treatment of the consumptive, is more important in diet prescriptions, perhaps, than anywhere else. Every patient, and for that matter every physician, has his prejudices, one might almost say his "fixed ideas," regarding diet, many of which are founded upon insufficient bases of fact, and in proportion as they are stubborn and difficult to eradicate, they increase the complexity of the problem.

One patient declares that he cannot drink milk. Another that he cannot swallow an egg. A third with an absurd uric acid phobia, insists that he cannot eat red meat. Fried foods are almost universally condemned, and our good friend, the pig, is fairly ostracized from good society in dietetic circles. I cannot but feel that in many cases these prejudices

are ill-founded. Do not let us forget that the staunchest and sturdiest set of men and women which this country has ever produced have been raised to healthy maturity and have withstood the vicissitudes of disease and an ungentle climate, on a diet of fried salt pork, potatoes, beans, and breadstuffs, with fresh meat perhaps once a week. Fried sausage and buckwheat cakes with maple syrup for breakfast carried no suggestion of dyspepsia to these good people, and they grew stout on apple-pie and doughnuts, regardless of the question of proteids, fats, and carbohydrates. But those good old days are no more, and even the New England farmer now inclines to a more critical attitude toward his food. He demands more meat, and there is no doubt that he has increased by nearly double the proteid content of his dietary. The question is, "Is he a healthier animal for the change?"

Of all dietic or medicinal agents employed in the treatment of tuberculosis, I believe there is none upon which more contradictory opinions and prejudices exist than is the case with alcohol. Even medical views upon this subject vary all the way from stern and uncompromising prohibition to extreme license.

It seems to me that in this, as in all else therapeutic, arbitrary extremes may be fraught with danger from that of failure to employ a most valuable aid to cure on the one hand, to that of fatal abuse of it on the other.

I am aware of the danger of being misunderstood in expressing an opinion indicating a middle course with regard to the use of alcohol in tuberculosis. Nevertheless, my experience leads me to hold such opinion. If the patient is doing well, has a good appetite and digestion, and is gaining weight satisfactorily without alcohol, certainly there is no excuse for prescribing it. But, on the other hand, where there is a tendency to anorexia, where digestion is sluggish, especially where milk is ill borne, where weight gain is not satisfactory, and, of course, where there is no specific contraindication, I know of nothing else that will quite take the place of some of the light wines or malt liquors in promoting the building-up process for which we are striving. In such cases it is both a food which is immediately available to the tissues, and a mild and harmless stimulant to digestion. It must be taken in moderation, that goes without saying, but the dosage which may with propriety be employed will vary within wide limits in different individuals, depending upon temperament, education, and idiosyncrasy.

As a general rule, to which of course there are many exceptions, light clarets, Rhine wines, or even Burgundy, may be advantageously permitted with midday and evening meals. To this list may be added the malt liquors, which are often preferred by patients, and such prescription need not in the least interfere with between-meal diets of milk and eggs. On the other hand, frequently the latter are much better borne when wine or beer constitutes the only beverage at mealtime. Distilled liquors have a much narrower field of usefulness in the dietetics of tuberculosis, but are permissible in certain cases when alcohol is indicated and the more bulky forms are ill borne. In such cases there is little or no choice as to what kind shall be used other than is indicated by individual taste, but whatever is used should be well diluted.

Roughly estimating, I should think I have prescribed alcohol in some form as a dietetic measure in from 5 to 10 per cent. of the tuberculous invalids under my care for the past fifteen years, and I confess I have never seen harm come from it in a single instance, while, on the other hand, I am sure that in many cases it has rendered invaluable service.

It would be little less than childish in this company to enumerate the many moral and physical contraindications to the use of alcohol in the manner I have suggested. The physician who prescribes it without a thorough knowledge of his patient from every point of view is bound to meet with disastrous results occasionally. But employed judiciously and with watchful individualization, alcohol has a definite and well-merited place in the dietetics of tuberculosis.

(It is not within the scope of this paper to consider the subject of alcohol as a medicine, and what has been said applies wholly to its employment in the *dietary* of the consumptive.)

In conclusion, one is forced to admit that in this matter of food for the tuberculous invalid, our teaching, up to the present time, has been largely empirical. Weight gains have followed heavy feedings, consequently the diet should be pushed to the limit of toleration. From time to time, to be sure, warnings have been sounded against the danger of overfeeding, but they have been less heeded than would have been the case if they had originated from convincing scientific experimentation, rather than from individual judgment, however good, based upon mere observation of gross phenomena.

To determine with any certainty the standard food requirements for tuberculous invalids, we shall have to make a more thorough study of metabolism than has yet, so far as I am aware, been done. It is not sufficient, as I have indicated, to compare the total nitrogen output of the urine with the total proteids of the food, but the feces must be analyzed at the same time in order to differentiate between endogenous and exogenous metabolism, and thus determine the amount of nitrogen required in the food to balance the pathological tissue catabolism. This means the clinical application on a large scale of the methods which have characterized some of the recent brilliant researches in physiological chemistry, and involves work practicable only in tuberculosis hospitals and sanatoria. A more careful inquiry into the whole subject, however, is assured when its importance is realized, for it must be conceded that it is not consistent practice to unnecessarily overburden the organs of digestion and elimination, and at the same time to insist upon body rest. By all means let us determine the food requirements, and meet them, if possible, but by acquiring more accurate data on the subject avoid the dangerous error of overfeeding.

MANIFESTATIONS OF SYPHILIS ASSOCIATED WITH PULMONARY TUBERCULOSIS.*

By JOHN H. PRYOR, M.D.,

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While some textbooks devote attention to the methods employed in distinguishing between the lesions of syphilis and tuberculosis, the recognition of the coexistence of the two affections has not received the consideration which it seems to deserve.

During the last two years I have observed fifteen cases of syphilitic disease associated with pulmonary tuberculosis. The diagnosis of tuberculosis was verified by the finding of bacilli in all the cases cited. In every instance a complete history of syphilis was obtained. All the patients had the initial lesion, marked secondary manifestations, and had undergone treatment. At the time of observation the in-

*Read before the National Association for the Study and Prevention of Tuberculosis, at its Second Annual Meeting, held in Washington, D. C., May 16-18, 1906.

terval which had elapsed since the appearance of secondary symptoms varied from one to fifteen years.

The cases are divided into two groups for clinical purposes. Eight exhibited syphilitic lesions and seven showed symptomatic manifestations, which promptly responded to the therapeutic test. The distinct, specific lesions found in seven patients were infiltration and ulceration of the larynx, pharynx, soft palate, nasal cavity, and tongue. Without exception these lesions had been regarded as tuberculous and the treatment was based upon that belief. In one instance a gumma of the neck had been followed by deep ulceration, which had existed for three weeks. It had been pronounced a carbuncle, and later ascribed to tuberculosis. In this series of cases proper local and constitutional treatment was followed by prompt relief and recovery. The mistake in diagnosis was apparently due to the fact that tuberculosis was held accountable because that disease was known to be present. Of the patients suffering from symptomatic manifestations, one complained of persistent frontal headache and myalgia, involving the muscles of the shoulders; one insisted that he had attacks of aphasia, vertigo, and numbness of a portion of the left arm: one suffered from neuralgia of the legs, particularly at night; sometimes the pain was confined to the heels alone, and four under the most favorable conditions showed no gain, or only slight increase in weight; anemia, languor, fitful appetite, and a daily rise of temperature to 100° or 101° for weeks. Suspicion of the latter group was aroused, because they were all incipient and favorable cases of tuberculosis. Complete rest, open-air treatment, and increased alimentation for a period varying from three to six weeks was not accompanied by improvement, or the symptoms grew more pronounced. When closely questioned, the history of syphilis was elicited and antisyphilitic treatment was followed by remarkable improvement.

Allow me at this time to anticipate the natural comment that any of these symptoms, and especially the diurnal rise in temperature, could have been caused by tuberculosis or mixed infection. Of the fifteen cases presented as suffering from the double infection of syphilis and tuberculosis twelve were regarded as incipient and favorable and three were moderately advanced.

We do not expect patients with a slight tuberculous lesion and little evidence of constitutional derangement to maintain a daily rise of temperature to 100° or 102° for weeks under modern methods of control. It is admitted that this may occur, but the fact that such behavior is unusual should incite a search for another cause, and syphilis should be suspected, particularly if gastrointestinal disturbance is absent.

Twelve of the fifteen cases were characterized by an evening elevation of temperature above 100°, and in three cases the temperature showed a persistent rise over that of the preceding day. I regard this manifestation in the class of patients under consideration as one of important diagnostic value. The effect of treatment upon the fever was most marked. In two instances the temperature dropped to normal in four days, and in the remainder it fell to normal, or 99°, in eight days.

At the present time we are still compelled to accept the therapeutic test as evidence in the detection of syphilis and its multiform phases. It is doubtful if the dual infection or association of the two diseases renders a prognosis as unfavorable as the literature might lead one to presume. Eight of the patients apparently recovered from tuberculosis, and in seven the disease was arrested. Of course sufficient time has not elapsed to pass judgment upon the ultimate result.

The difficulties in the administration of the iodides to the syphilitic and tuberculous patient have been exaggerated. This is particularly true of persons afflicted with incipient tuberculosis. Iodide of potassium was given in solution, or with the essence of pepsin, in doses ranging from five grains to fifty grains three times daily, and was not followed by any more disturbance than that usually encountered when syphilis exists alone. Careful attention was paid to the behavior of the tuberculous focus in the lung with reference to the influence of iodide of potassium upon the diseased process. In one instance the moist râles and the amount of expectoration were increased, but in all others no change of this character was detected.

Mention should be made of one case characterized by the interesting clinical phenomena which have sometimes proved puzzling.

B. F., aged forty-five, had secondary manifestations twelve years ago; no symptoms since. Four months before coming under observation was treated for pleurisy at base of left lung. Three months ago he began to lose weight, developed some evening temperature, and a cough with expectoration. One month ago bacilli were found, and a diagnosis made of pulmonary tuberculosis. Upon examination I found evidence of a lesion at the left apex, and also one at the base of the left lung. Both were active, and the one at the base seemed to be undergoing softening. Bronchial breathing and an abundance of fine, moist râles were present. After three weeks had elapsed I noted that his general condition was improved, but the temperature gradually rose in spite of absolute rest. Suddenly he developed nervous symptoms, which seemed distinctly syphilitic in origin. A full history of syphilitic infection was admitted. During my absence for a period of two weeks his symptoms became more pronounced and he was given thirty-five grains of iodide of potassium three times a day with daily inunctions of mercury. After three weeks of this treatment I found that all pathological physical signs had disappeared from the base of the lung, with the exception of slight relative dullness, and the improvement in the signs at the apex was quite remarkable. The great change in the physical condition and signs and the decline of the temperature to normal led an able clinician, who had observed the patient during my absence, to the conclusion that the thoracic disease was entirely due to syphilis, and the diagnosis of associated tuberculosis was regarded as erroneous. Three weeks later I examined the patient again and found no evidence of disease at the base, but the signs of a quiescent or arrested lesion at the apex. The temperature continued normal. It seems fair to assume that he was suffering from a dual infection of the lung, and it seems probable that the disease at the base of the left lung was syphilitic and that at the apex tuberculous.

Some years ago I observed two advanced cases in hospital practice of the type earlier described as syphilitic phthisis. They were cases of tuberculosis with syphilitic taint, and possibly a closer study will sometimes explain the rôle played by obscure manifestations of syphilitic poison in changing the clinical picture exhibited as due to hopeless tuberculosis.

The purpose of this brief and general presentation

of a few cases is to attract attention to the following conclusions:

Pulmonary tuberculosis is often held responsible for too many manifestations of disease which are due to other causes.

The fact that a patient has tuberculosis should not be an excuse for disregarding these conditions, which often have a decided influence upon the prognosis and cause much avoidable discomfort.

Syphilis is a common disease, and physical debility combined with worry and mental distress, which may accompany tuberculosis, may arouse a latent syphilitic taint.

The association of the two morbid conditions may be disguised and the symptoms confused.

Furthermore, many of the manifestations of syphilis are quite similar to those produced by tuberculosis.

The diagnosis of syphilis, in connection with tuberculosis, will require close scrutiny, and often the therapeutic test.

Persistent fever above 99.5° in incipient cases of tuberculosis, when the lesion is slight and the general condition not much impaired, and when rest with proper treatment for a period of three or more weeks fails to secure an amelioration, should be viewed with suspicion and the possibility of associated syphilis thoughtfully considered. This is also true when atypical pneumonia or intractable subacute bronchitis supervenes.

It is questionable at least if the prognosis in tuberculosis of the lung of an incipient type is rendered any more unfavorable when syphilis, particularly of the tertiary form, is also actively present.

The improvement in the tuberculous case following antisyphilitic treatment is most marked, and at times surprising. This is particularly noticeable in reference to the prompt and decided drop in temperature.

Unless my experience has been very unusual, syphilis is more often associated with pulmonary tuberculosis than the paucity of the literature upon the subject would indicate.

The concurrence of the two diseases must be more common in hospital, dispensary, and sanatorium practice than is assumed by most authorities.

In this paper no allusion is made to the differentiation between the two affections. The simple intent is to emphasize the importance of recognizing their coexistence and the efficacy of proper treatment.

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REFLEX SYMPTOMS AND REFERRED PAINS CAUSED BY STONE IN THE KIDNEY.*

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The claims to attention of the case which forms the theme of the present paper are based upon its having been for two years under the observation of physicians of eminence and experience before a diagnosis was agreed upon. That such uncertainty was inherent in the character of the case is apparent from the suggested diagnoses—neurasthenia, hysteria, neuritis, neuronitis, spinal cord involvement, tuberculous spondylitis, exophthalmic goiter, Addison's disease, appendicitis, oophoritis, retroversion, nephroptosis, chronic arsenic poisoning, and flat-foot. The patient, a woman far above the average in education and intelligence, realized her own limitations as diagnostician and therapeutist, and faithfully carried out the instructions of the general practitioner or specialist under whose care she had placed herself, dreading nothing but invalidism, and willing to do anything which would give her health and the ability to work. The rest cure was advised, and she remained in bed five months. Walking and the use of will power were enjoined; she walked till, in the old phrase, she could no more. She resorted to plates in her shoes, electricity, travel, and time—all under direction, and all to no avail.

She came to me in June, 1905, with an introduction from Dr. Charles L. Dana, asking me to take charge of her and see if I could find any evidences of organic trouble, and stating that she had had glycosuria, and when he saw her a tachycardia, possibly inconstant. He also said that she might have had a neuritis or neuronitis, according to the report of an eminent Chicago neurologist, whom she had consulted previously.

To quote this report: "I saw Miss ———, April 1, 1904. The history was very confusing, embracing a number of symptoms which apparently were purely functional, and also showing evidence of some sort of gastrointestinal disturbance which must have been rather severe. On the strength of the pain and weakness in the legs, noninvolvement of the sphincters, and weakness of the knee jerks, with abundant sugar in the urine, I concluded that the case was probably one of neuritis with a considerable hysterical element added. When I saw her the Achilles jerks were pretty good, but the knee jerks could be elicited only by reinforcement. The gait was rather characteristic of hysteria than of organic disease, and with some encouragement and some suggestive treatment she was able to trot up and down my office, holding to my hand—a thing that seemed absolutely impossible when she first came into the room."

It was according to this neurologist's suggestion that she exerted her will power to the utmost, walking as far as she could, then resting, and walking again. It was always with pain and conscious effort, and the length of walk possible was always limited by increasing stiffness and weakness.

Change, travel, rest, and escape from doctors were advised, so she came East and spent the winter living as normal a life as possible. Since no improvement resulted, she appealed to Dr. Dana, and his opinion was as already given. Acting under his advice, the following exhaustive history was taken and examination made, in the search for a possible organic cause:

The patient was born in the United States; age, thirty-two years; occupation, that of librarian. The chief complaint was of pain and weakness of the lower extremities. The family history was negative; mother is nervous and easily worried; father, brothers, and sisters are living and well.

Past History.—She was well as a child, except for "malaria," which was common in the city where she lived. She taught from the age of nineteen to that of twenty-one, when she was obliged to stop because of pain in her back, lumbar region, which was increased by standing. She suffered at that time also from insomnia. Eight years ago she had an attack of "appendicitis" or "oophoritis," duration, six weeks, with severe localized pain and high fever. She has been conscious of a tender spot in her right side ever since. Menses began at sixteen; regular; duration, two to five

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days; flow moderate, never profuse; accompanied by pain, which was never severe; is worse now than formerly, extending from the back around through the iliac and hypogastric regions, and is usually worse on the right side. Her nervous symptoms are worse during period. Leucorrheal discharge is infrequent and hardly appreciable.

Present History.—For three years she worked very hard as librarian, studying for examination at the same time, and paying no attention to sleep or exercise. Feeling "run down," she took arsenic and strychnine for a long time. She felt weak and noticed that her legs trembled, but did not stop work till forced to do so by an attack of diarrhea, which was painless, but lasted several weeks and completely exhausted her strength. This was followed by pain, or a "clutching sensation," beginning in the back and radiating at first down the anterior aspect of the thighs. The pain later involved the whole of the lower extremities, especially the knees, which were held flexed. It was bilateral, but the patient always regarded the left leg as the worse. The weakness in both lower extremities was extreme, but the power of motion was never wholly lost. The patient remained in bed five months because of this pain and weakness, receiving some electrical treatment. For about two years, *i. e.* from the time she stopped work till I first saw her in June, 1905, there had been very little improvement. The pain was still almost constant, involving back, lumbar region, thighs, legs, and ankles. It was superficial and burning, or deep, dull, and aching in character, and was sometimes accompanied by sharp, stabbing sensations. It was often associated with a feeling of cold. It was worse after walking, when it was accompanied by stiffness and weakness; it often interfered with sleep, but was relieved by the recumbent position.

Other symptoms were frequent urination, especially at night, not accompanied by pain or burning; pain in the back of the neck, and extreme exhaustion after any effort, as in reading or sewing, or after talking with several people. She spoke often of "waves of weakness" which passed over her. Her appetite was fair. She had no indigestion, and her bowels were regular, the stools, however, sometimes ribbonlike.

Her mental condition was excellent, and her memory good, but she was inclined to be apprehensive, especially at night and in crowds, and to be discouraged about her condition. Her sleep was fair, but broken by pain.

Physical Examination.—Complexion, dark, and said to be growing darker. Pale, with dark circles under eyes. Expression anxious, worn, hunted. Well nourished, flesh firm. Slightly enlarged thyroid, no exophthalmos. Tongue normal. Heart: slightly accentuated second aortic sound, otherwise normal. Pulse, medium in force and tension, slightly irregular in rhythm, varying in rate from 96 to 108. There was no thickening of the arteries. Lungs: Negative, except for roughened breathing and increased voice sounds at apices. Spine: Marked prominence of first two lumbar vertebræ; no tenderness on pressure of any kind, no rigidity, no disturbances of sensation on back. Lower extremities: White, especially the feet, with tendency to cyanotic mottling; always cold, though the examinations were made in June and July. No pulsation was obtained in dorsalis pedis, nor posterior tibial artery of either side, though examinations were many times repeated, except once, and that once was after a two days' rest in bed. Then the pulsation, though obtainable, was weak. No atrophy. Abdomen: No rigidity. Liver normal in size. Both kidneys palpable, the right movable; neither tender. Tenderness, not constant, in region of appendix, on deep pressure. Pelvic examination: Prepuce free from clitoris; transverse contractions in labia minora. No discharge. Cervix in normal horizontal plane, hard, directed somewhat anteriorly. Uterus small, not infantile, retroverted, and sharply retroflexed. Ovaries large, tender, especially the right, and prolapsed. Uterus movable, but not completely replaceable.

Roentgenograph showing renal calculus

Neurological Examination.—Cranial nerves negative. Patellar reflexes obtained, variable, the left usually the stronger; reinforcement usually but not always necessary. Achilles and plantar reflexes normal and equal. No loss of motor power. No disturbances of sensation. No ataxia. No disturbance of deep sensibility. No romberg. Gait unsteady, weak. Urine: Twenty-four-hour amount, 50 to 70 ounces; pale amber, cloudy, abundant flocculent sediment, faintly acid, specific gravity 1010 to 1016, trace of albumin, no sugar. Microscopical examination: Very numerous pus

cells, few epithelial cells, chiefly caudate. Repeated examinations gave the same results, and a catheterized specimen confirmed them. No tubercle bacilli found. I have not succeeded in getting the report of former urine examinations from the physician, but the patient's own statement, accurate in other respects, was to the effect that there had been sugar, and also pus which was attributed to vaginal discharge. Blood: Hemoglobin, 80 per cent.; red blood cells, 4,368,000; white blood cells, 9,000; polynuclears, 65 per cent.; small mononuclears, 29 per cent.; large mononuclears, 5 per cent.; eosinophiles, 5 per cent.

The salient points, then, in the symptoms were nervous exhaustion, and pain and weakness of the lower extremities; and in the examination, moveable right kidney, pyuria, retroversion of uterus, and defective circulation of the lower extremities.

The syndrome of pain and weakness in the legs, comparatively absent during rest, especially in the recumbent position, much increased by walking, and going on almost to rigidity and loss of power, with absence of pulsation in the dorsalis pedis and posterior tibial arteries, was very suggestive of the intermittent claudication so ably described by Dr. J. R. Hunt in the MEDICAL RECORD for May 27, 1905. According to this author, "It is generally admitted that the symptoms are ischemic in origin, the manifestation of a temporary anemia of the muscles, nerve endings, and other structures." And again, "Three factors must be recognized in the production of the claudication ischemia: one, constant and organic in nature, diminishing the caliber of the vessel, and two factors, inconstant and functional, the tendency to vasomotor spasm and the increased demand upon the circulation of the part during activity." He also says, however, that "some observers * * * suggest a purely functional form of the disease, or one in which the structural alterations of the vessels play an entirely subordinate rôle."

In the case in question there was no evidence of arteriosclerosis or endarteritis, "diminishing the caliber of the vessel"; hence, if the syndrome above mentioned constitute intermittent claudication, this case must be considered one in which the symptoms were caused either by pressure plus vascular irritability, or the cause must be wholly reflex.

According to the abdominal and pelvic examination given above, as confirmed by Dr. William M. Polk, who was called in consultation, there seemed to be no possibility of pressure which could interfere directly with the blood or nerve supply of the lower extremities. It was Dr. Polk's opinion, also, that the retroversion of the uterus was a possible, but not a probably adequate cause of the symptoms. There remained the pyuria, which he considered might be due to a pyelitis caused by torsion of the pedicle of the movable right kidney. Nephropexy was tentatively advised, provided that ureteral catheterization, which he recommended, shed no new light.

Cystoscopy and ureteral catheterization were performed by Dr. F. Tilden Brown. The result was dramatic in the extreme, for, though the movable kidney, the appendical or oophoritic pain, and the tender ovary were all on the right side, from the right ureter clear amber urine flowed freely, while from the left flowed slowly, a thick, whitish fluid. Dr. Brown's report was as follows:

SPECIMEN FROM	RIGHT URETER.	BLADDER.	LEFT URETER.
Amount	18 c.c.	5ii.	7 c.c.
Appearance	Clear.	Cloudy when drawn; clear, supernatant fluid after standing.	Turbid.
Color	Amber.	Amber.	Pale, watery.
Sediment	Just visible.	Heavy, white, small amount.	Marked, heavy, white.
Odor	Normal.	Aromatic.	None perceptible.
Sp. Gr.	1005.	1015.	1004.
Reaction	Acid.	Acid.	Faintly acid.
Albumen	Negative.	Per Esbach, 1-5 gm. per L.	Marked reaction (pus).
Sugar		Negative.	
Urea	0.6 per cent.	1.3 per cent.	0.4 per cent.
Indican		Negative.	
Blood		None found.	
Pus		Bulk of sediment.	Bulk of sediment.
Mucus		Small amount.	
Epithelium	Sediment made up of few squamous, round and oval cells, as from the ureteral mucous membrane.	Few squamous and round, as from bladder mucous membrane.	Few round, oval and caudate, as from ureter or pelvis mucous membrane.
Casts		None found.	
Bacteria	None found.	Few bacilli.	Few bacilli.
Crystals and amorphous material	Negative.	No tubercle bacilli found. Small amount of amorphous matter.	No tubercle bacilli found. Negative.

To quote his conclusions: "I am impressed with the likelihood of a left-sided renal tuberculosis, involving perhaps the corresponding adrenal. The state of the bodies of the vertebræ, the left kidney, and the adrenal constitute a focus from which all the symptoms could reasonably be deduced."

Three possibilities, then, carcinoma, tuberculosis, and stone, were under consideration. Absence of red blood-cells in the urine argued against all three; absence of cachexia against carcinoma; absence of emaciation and afternoon temperature—it was repeatedly tested—against tuberculosis; absence of renal colic against stone. Carcinoma was considered by far the least probable.

Culture tests were made by the recognized expert, Dr. Emanuel Libman, of Mount Sinai Hospital. The result showed that the urine from the right side was sterile, and from the left side, contained only *Bacillus proteus vulgaris*. Though this greatly reduced the chances of tuberculosis, the guinea-pig test was under consideration, when, at Dr. Brown's suggestion, an *x*-ray picture was taken by Dr. Alfred T. Osgood. The result very clearly confirmed the diagnosis of stone, as is shown by the accompanying picture (page 96).

Operation was of course in order, but, for family reasons, the patient went to Cleveland to have

it performed. I quote the report of the operator, Dr. James C. Wood:

"On Thursday, September 7, I operated. I felt convinced that the sharp retroflexion of the uterus and the appendix were responsible for no little trouble. I therefore first opened the abdomen and fastened a small, almost infantile uterus in front by ventral fixation, the round ligaments being so small and atrophied that I felt it would not do to rely upon them to hold the organ in place. The appendix was hard, indurated, and intimately adherent to the cecum. I therefore removed the appendix in the usual way. The kidney was explored and the stone readily felt within its pelvis. The kidney was, however, a mere sac, the pancreas being closely adherent to it, so that it was with difficulty that the pancreas was separated from it. After the abdomen was closed the kidney was exposed through the usual posterior incision. The spleen was enlarged and crowding hard down against the kidney. The kidney was closely adherent to the surrounding structures, there having been evidently some time a severe perinephric inflammation.

"To make a long story short, I had to injure the pancreas somewhat in getting the kidney out, and the shock was too much. She died on the third day, with a temperature which during the first twenty-four hours was subnormal and which was but slightly above the normal at the time of her death. A post-mortem showed beginning fat necrosis of the omentum as a result of the injury to the pancreas. The question naturally arises as to whether or not pancreatic implication was not responsible for the presence of sugar in the urine before she came to me and to you."

In answer to further question, he says: "I do not think there were any adhesions posteriorly that would interfere directly with the blood or nerve supply of the extremities."

The stone, which he forwarded me, was brownish-gray, irregular in shape, but with no sharp points, about ¾ x ⅜ of an inch in its greatest diameters, and resembling volcanic tufa in surface and consistency.

The last word is, however, not yet said, for many questions remain unanswered, in spite of the termination in autopsy. For instance, there was at one time glycosuria, which was said to be functional. Was it functional? Is it ever functional? Does it ever exist as a result of pressure on the pancreas by neighboring organs, or as a result of surrounding inflammation, or as a direct reflex from the pathological condition of another organ, as the kidney?

Moreover, there is a confusion hard to clarify resulting from a certain looseness in the use of some medical terms, as "reflex symptoms." Attempting to define: Reflex symptoms are those manifestations of the functions of the body, mind, or spirit, evidenced as pain, discomfort, stupidity, or irritability, which might be the result of bad heredity, absence of hygiene, or financial disability, but which, when they exist simultaneously with a physical arrangement considered by anatomists or physiologists pathological, are attributed to it. For example, in this case the uterus was retroverted. Therefore "waves of weakness," apprehension in crowds, and pain and weakness of the legs had been indiscriminately attributed to it, with regard neither to the nerves supplying the parts concerned, nor to the fact that many a retroverted uterus gives no symptoms. Since in the present case the general reflex symptoms, which have been above defined, have so many entirely adequate causes, including two years of pain, physical examinations, and enforced idleness, we will consider here merely the actual pain and weakness.

Following Henry Head, the great English authority, in his work on the definite cutaneous areas of pain and tenderness due to visceral disease, we may fairly regard the pain experienced in the case under consideration as "referred." A brief anatomical review is essential to its understanding.

Keeping in mind that the nerve supply of the kidney is from the renal plexus, *i. e.* indirectly from the solar and aortic plexuses and lesser and least splanchnic nerves, and that the nerve supply of the pancreas is derived from the solar plexus, and that these plexuses are in communication with the lumbar spinal nerves, and, by way of the splanchnics, with the tenth, eleventh, and twelfth dorsal spinal nerves, it is natural to expect that the segments of the spinal cord involved would be the tenth, eleventh, and twelfth dorsal, and the lumbar.

Henry Head has mapped out the respective areas of cutaneous hyperalgesia due to different visceral diseases according to the findings in acute cases of known diagnosis. Referring to his work, I find that the segmental areas ascribed to the kidney are the tenth, eleventh, and twelfth dorsal and the first lumbar. He, however, has found no case of visceral disease giving cutaneous hyperalgesia in the second, third, and fourth lumbar segmented areas.

During my examination of the case in question there was no cutaneous hyperalgesia, a fact easily explained by there being no acute disease. On the other hand, the superficial pain was referred with fair accuracy to the area assigned by Dr. Head, namely, beginning in the back, lumbar region, it radiated downward and forward across the anterior and inner aspect of the thigh.

Considering the fact that the pain was deep as well as superficial, grinding as well as burning, involving at times the muscles of thighs and calves, and the knee and ankle joints, I would suggest the following double explanation:

1. The irritation in the kidney or pancreas or both caused the so-called referred pain of Head—many years ago described by Dana under the term "transferred pain"—the pain being superficial, burning, and limited to the back, abdomen, and upper thighs.

2. The irritation in the kidney or pancreas or both brought about reflexly a spasm of the vasomotor nerves, derived from the lumbar and upper sacral segments, causing contraction of the blood-vessels of the lower extremities. The resulting ischemia in the nerve endings was the cause of the deep-seated pain; and in the muscles the cause of the weakness.

The possibility that an ischemia, due to direct pressure on the large blood-vessels, had caused indirect nerve changes was ruled out because there was no such pressure. Whether there was at any time an actual neuritis, it is impossible to determine.

In conclusion, I would express my hearty thanks to the eminent men consulted, for the unusual interest taken, and for their scholarly patience in following the small clue which led at last to a correct diagnosis, although, unfortunately, not to a cure.

THE OPHTHALMOSCOPE AS AN AID TO THE GENERAL PRACTITIONER.*

By CLARENCE P. FRANKLIN, M.D.,

PHILADELPHIA, PA.

When Dr. Darnall asked me to write a paper for you, I felt like saying, in the words of Cicero: "You have often urged me to write something on this topic, and it appears to me also to be one that is worthy of the consideration of all, and especially of such friends as ourselves."

This is not a technical discourse on refraction or eye diseases, a mass of dry figures and stated cases, of "wise saws and modern instances," but a simple plea for a strengthening of your own resources, a plea arising from a deep-seated wish to see the general practitioner assert more fully his rights to enter, if only on its borders, the field of the eye specialist, to the end that there may be a closer union between what I may call the Generalist and the Specialist.

For I speak from experience when I say that ten years of general practice, before I devoted myself wholly to a specialty, taught me the value of a knowledge, however superficial of the specialties.

Not that a man should be "Jack of all trades," for that produces its natural concomitant, that he is "master of none," but that his character as a physician may be rounded out and filled to its perfect form. The specialist who has never engaged in general practice is a one-sided man; he is like a painting, he may have height and breadth, but no depth—he lacks, in other words, the third dimension, which is supplied to the physician only when he studies disease in all of its possible manifestations.

Or, to use another figure, if we accept William Cullen Bryant's dictum, when, in his magnificent "Thanatopsis," he says: "To him who, in his love of Nature holds communion with her visible forms, she speaks a various language," then is it true that while the general practitioner who is versed in the specialties is able to translate all these various tongues of our Old Mother, the specialist, "each in his narrow cell forever laid," can read but one dialect.

I can realize the peculiar position held by you in this great city for seekers after health, and can understand how it is that you must practise the specialties here yourselves, else would your patients seek "fresh fields and pastures new;" and so, I plead for an advance upon your part in the direction of my chosen field of work.

I am suggesting that you perfect yourselves in the diagnosis, at least, if not the treatment, of eye conditions, which are considered by the general practitioner in my city, as being beyond his ken, but which to you, famed as you are as successful healers of the sick, forced by your environment to become more catholic than those of us of the larger cities, can easily become matters of mere routine. Therefore, the most practical suggestion, if I may be permitted, is that you familiarize yourselves with the use of the ophthalmoscope in your general practice.

Ill would it become me to speak ex-cathedra to such a learned body of men as have honored me with their attention to-night, even if the time permitted, but a mere bald statement of some of your daily cases will show you how this little instrument can be of the greatest service to you. No weighty apparatus is needed, no dark room is used where the modern electrical instrument is at hand, and rarely, for your purposes, is a mydriatic required.

*Read before the Atlantic City Academy of Medicine, March 9, 1906.

Instead, your stethoscope is paired with your ophthalmoscope, and your kidney and heart cases, your brain lesions, your eyestrain headaches, and general refractive errors are diagnosed and brought forth from obscurity by this instrument. So that the systematic use of the ophthalmoscope in the investigation of general disease is, I feel, of sufficient importance to warrant my bringing it to your attention in this way this evening.

The eye-man is not always called in for his opinion in rare and unique cases, alone, but in every-day, common cases of complicated disease in ordinary general practice, and this, while it may be good business for the specialist, makes in the long run, for a stunting of the mental growth of the general practitioner, as the latter might just as well make his own diagnosis unaided in a large class of cases which he now calls upon the ophthalmologist to clear up for him.

Most recently I was asked to discuss a case reported at a meeting of an obstetrical society; a case of blindness occurring during eclampsia (in which case I had been previously called in consultation) in a pregnant patient, where the use of the ophthalmoscope by the family physician would have shown, by the total lack of any retinal pathological conditions, that the blindness was not due to any eye disease, but merely an eye-symptom of a general condition, and one which would, and did, clear up of itself, as the general state was bettered.

This is only one case out of many in which the eye-man sees that the general practitioner can just as easily form his own judgment without other aid than that afforded by the ophthalmoscope. Of course this implies that a man has ability sufficient to distinguish between eye-symptoms arising from ocular conditions, and eye-symptoms arising from general states, such as some of the pathological conditions of the kidneys, stomach, nervous system, etc. On the other hand, the general practitioner can, by a wise use of the ophthalmoscope, detect not only many general conditions, but also many ocular abnormalities in their incipiency, and by turning them over to the eye-man temporarily for treatment, save much loss of peace, time, and money to such patients.

The ophthalmoscope has its use, or it would not have been produced by the brain of man; this is just as much a result of natural laws as is the presence of light, air, water, or any other natural phenomenon. There is a cause for each, and our part is, as thinking beings, to investigate each, in order to make the best use of it. This is far better expressed by the wise old slave Epictetus, who said: "If God had made colors, and not made the faculty of seeing them, what would have been the use? None! On the other hand, if he had made the faculty of vision, without objects to be seen, what would have been the use of that? None, again! If he had formed both the faculty and the objects, but had not made light? Neither in that case would they have been of any use. What, then, is to be done? To make the best use of what is in our power, and take the rest as it happens."

The cause for the invention and production of such instruments of precision as the ophthalmoscope is no doubt due to a naturally existing skepticism in the human mind, of which Huxley speaks when he says: "The improver of knowledge absolutely refuses to acknowledge authority, as such. For him, skepticism is the highest of duties, blind faith the unpardonable sin." So, it is because we want to see what is inside the eyeball, and not guess at it, that we turn to the ophthalmoscope in many conditions.

Should you, in familiarizing yourselves with this

instrument, wish to know more about refractive conditions, so that you may recognize them, at least, read such a book as Morton's little work on refraction; and if you would know more about eye-symptoms in general, read Nettleship's "Diseases of the Eye," although both of these Englishmen, like all European ophthalmologists, ignore conditions which, minor to the uninstructed eye, have most important bearings on the general welfare of the patient. It seems to be a fact that, among the general run of European patients, even of the better classes, lesser degrees of eye troubles are ignored, as for instance any refractive error of less than half a diopter of hyperopia, myopia, or astigmatism is neglected, as witness the general use of the monocle in the United Kingdom—a practice which is a relic of barbarism, and which should be relegated to the back attic of oblivion, along with the warming pan and the candle snuffers.

I often find English students arriving in this country complaining of typical eyestrain symptoms, wearing corrections not entirely covering their cases, and seeming to prove the statement just made. Is this due to the more phlegmatic life abroad failing to make the correction of these minor ills of paramount importance? It would seem to be more this—the mode of life—the lack of strenuosity, than due to racial characteristics, for the same students who will tell me that they never had any further eye difficulty while living abroad after putting on the correction ordered by some well-known foreign ophthalmologist, will go on to say how they have, since entering upon the pursuit of a profession in this country, become conscious of defects of eyesight of which they were hitherto ignorant. Verily, the strenuous life becomes not only the simple one, but the foolish one, when it produces such effects as these.

Many times have I seen the most marked effects produced by the addition of a one-eighth diopter to a lens, either spherical or cylindrical, and this being so, who is at fault? Anyone? Is it the patient who is wrong, or the prescriber? Are our practitioners better taught in the minutiæ of eye practice, or do we teach our patients too much introspection, and give too much suggestion by our close questioning after fine details, so that the patient notices things which he might hitherto have been ignoring, to his own comfort and welfare? Be that as it may, often have I seen all the difference between comfort and distress produced by the addition to a correction of so little as a one-eighth diopter, or the alteration by so little as five degrees, in the axis of a cylinder.

But to speak more specifically of a few of the conditions which, in the practice of the family physician, call for the use of the ophthalmoscope as a diagnostic instrument.

Any interference with the circulation causes eye changes which can be readily observed, for diminished blood supply leads to insufficient nutrition, and consequent danger to the optic nerves, while, on the other hand, increased blood supply shows itself to the ophthalmoscope as overfilled retinal vessels. The changes in the intima of the capillaries throughout the system are more readily recognized, perhaps, in the eye, by means of the ophthalmoscope than elsewhere, so that the conditions which have an intimate relation with the circulation, in which the ophthalmoscope is of use, are arteriosclerosis, atheroma, syphilitic changes, leukemia, and chronic poisons. The pulsations of the retinal arteries in aortic insufficiency are readily seen, of course, especially when synchronous with the pulse and alternating with filling of the veins. This condition, due to a compensating hypertrophy of the left ventricle, may affect even the most distant capillaries.

An infective embolus, as from purulent affections of the lungs or uterus, etc., or an ulcerative endocarditis, may cause panopthalmitis, or destructive choroiditis, but of course the noninfectious emboli are much more common, and it depends upon whether the choroidal or retinal vessels are plugged to say how much damage can be done, as in the former case less mischief occurs, owing to the intimate choroidal anastomosis, and hence less blindness is found than in the case of the plugging of a retinal vessel, where the vessels are a part of a terminal circulation, so that such a thrombosis causes functional blindness in the whole area supplied by the occluded vessel. These changes and the embolus itself are often brought to view by the ophthalmoscope, thus much helping the general practitioner in his grasp of the cases of partial blindness which occur among his patients with vascular changes.

While "choked disk," so-called, is found in many other conditions, such as in cerebral hemorrhage, anemia, brain abscess, diabetes, and albuminuria, it proves itself to be caused in about 70 per cent. of all cases where it occurs by some form of brain tumor. Usually bilateral, when the ophthalmoscope shows it to be one-sided the neoplasm is to be located in the corresponding anterior lobe of the brain.

Meningitis and multiple sclerosis are among the nervous affections that give occasion for the use of the ophthalmoscope, while the peculiar gray disk of the optic atrophy of locomotor ataxia is well worthy of study as one of the characteristic symptoms of this terrible disease.

While only about 10 per cent. of all the various diseases of the kidneys are associated with ocular changes, still the retinal and optic nerve lesions, when present, are characteristic, and often the kidney lesion is detected in advance of the general symptoms.

When we realize that a conservative estimate places 40 per cent. of all headaches to the credit of eyestrain, and 80 per cent. of all frontal headaches, we can realize how important it is to make accurate diagnoses of existing ocular anomalies.

In such cases as I have just hastily sketched, to say that the ophthalmoscope is the mainstay of the diagnosing physician is merely to give expression to a trite phrase, for the value of this instrument has long been proved.

That abnormalities of the eye are in far greater proportion than normal conditions is well shown by Metchnikoff, when he says: "The eye, one of the means by which we are conscious of the outside world, presents a natural disharmony"; and he then goes on to quote Helmoltz as saying: "'Nature seems to have packed this organ with mistakes, as if with the avowed purpose of destroying any possible foundation for the theory that organs are adapted to their environment.'"

Far be it from me to say that all eyes are abnormal, or that every patient who appears complaining of apparent eyestrain needs glasses, for while an absolutely perfect or emmetropic eye is as hard to find as would be a perfectly arched roof to a mouth in which to fit an ideal dental plate, nevertheless the true rôle of the ophthalmologist is not only to relieve or cure abnormalities, but also to detect readily the first point at which to stop and say: "Thus far and no further; this case is for the general practitioner to treat, these eye-symptoms are only originated by pathological conditions in some other part of the body, such as the teeth, the stomach, the nervous system, etc."

And then does the Simon Pure ophthalmologist do what his enemies claim he never does—return the patient without glasses, to have his distress re-

lieved by removal of the distant cause of trouble.

To accomplish this end, which, after all, is the true end and aim of our profession in general—the relief of human suffering—the general practitioner can do much by familiarizing himself with the ophthalmoscope and its uses as a diagnostic instrument.

The practice of medicine has now so far advanced that a knowledge of the use of this little bit of apparatus and a proper understanding of the things it reveals to the observer's eye are absolutely necessary in the equipment of the modern general practitioner in his never-ending war against pain, disease, and death.

How much suffering from uncertainty, and how much complication of worldly affairs, could be obviated if the general practitioner were able, for instance, to tell his patient how long he had to live, within a few months, or a year or two at the most, after observing the typical changes in the retina in Bright's disease in many cases? How easily relieve the anxiety of the relatives, already wrought up to the breaking point by the ordinary worry and strain of labor on the part of the mother, suffering from eclampsia, if he can readily and absolutely assure them that the terrible blindness in the mother, shutting down like a pall of death at a time when the full possession of all the faculties is such a priceless boon, will promptly disappear within a stated time? How soon relieve the heartache of the loving mother, who sees her newborn child with crooked eyes, and a future, to her imagination, of handicap from defective ability, by telling her that, since the ophthalmoscope shows no organic lesion in the sight apparatus, there is a reasonable certainty that her offspring's eyes may be, and will be, straightened again, as nature intended?

Can the aged, with incipient cataract, advancing with all its deadly chill of nightlike blindness, find comfort in the words of cheer of their family doctor? Yes, when he has, through the thin veil of oncoming opacity, seen, before it is too late, that retina and vitreous and nerve are normal, then can he predict sight again, and tell his trusting patient that after passing through the oncoming valley of the shadow (for such it may be truly called, this gradual withdrawal from the aged of their one choice possession left them by advancing years—their sight, and all the occupation and comfort it affords their declining days), after this descent into the depths, I say, new sight is to come to them, like a resurrection, and that again they may have that great privilege, a privilege seldom appreciated until its threatened withdrawal centers attention upon its blessedness—the grace to look again upon God's good green earth, and sky, and sunshine. How much more greatly may the bounds of usefulness be extended of him who, far more than priest or parson, is truly the "guide, mentor, and friend" of suffering humanity, the general practitioner?

If, as Pope says, "the proper study of mankind is man," how much more can we do for his spiritual side by first making ourselves as nearly as possible perfect in our knowledge of his physical being, granting, and willingly, that the spiritual is capable of full development only with a perfect physical condition as a foundation?

This digression into the metaphysical side of our duty to our fellow-man is called forth by the query often put by a certain type of general practitioner, when a proposition such as that presented to-night is placed before him: 'Why take the trouble to perfect myself in the use of this or that instrument, when my time is already more than filled with the use of the vast number of diagnostic aids which I must use to keep me abreast of the times; why burden me more? I do well enough."

But such a man looks not to the evercoming tomorrow, to him the wheels of Progress belong but to the Car of Juggernaut, to crush the prostrate forms of those who lie sluggish among the rattling bones of antiquity's precepts. Such a man cries, with Omar, the Tent Maker of Khorassan:

> "'Tis all a Checkerboard of Nights and Days
> Where Destiny with Men for Pieces plays
> Hither and thither moves, and mates and slays,
> And one by one back in the Closet lays."

But the old Persian Khayyam in his verses pictures the life of ease and flowers, of the winecup and song, the dallying of those of "Mrs. Warren's Profession," and the Rubaiyat can be epitomized in the modern cynical phrase of slang, "What's the use?"—which again is best answered by another writer of old, the noble old Roman Emperor, Marcus Aurelius, who, in his "Meditations," said: "The joy of man is in doing man's proper work," and this consists in zeal in the furtherance of Nature's chief aim, the production and maintenance of a healthy human race.

121 South Sixteenth Street.

Nerve Blocking to Prevent Amputation Shock; Illustrative Reports of Two Thigh Amputations.—Herman B. Gessner reports two cases of amputation in which he used nerve blocking with good results. The first patient was a colored man twenty-three years old. He suffered from tuberculosis of the right knee-joint and femur, with partial ankylosis. A long anterior and short posterior flap amputation was done at the middle of the thigh. When the posterior flap was being made, care was taken to identify the great sciatic nerve. This was edematized with 25 minims of a 2 per cent. solution of cocaine hydrochlorate, and then divided at the edematized level. After the amputation was finished, the great sciatic and the internal saphenous nerves were edematized with the same solution on being drawn out for shortening. Twenty-five and ten minims were used on them respectively. The character of the pulse was excellent throughout the operation. The writer then cites the history of another case in which cocaine was used to block the great sciatic before division, and the same nerve and the internal saphenous before shortening. In all, 75 minims of a 1 per cent. solution were used. No difference in the quality of the pulse was noticed as the result of the amputation. The writer recommends this method as one well worthy of further trial. Only a minute or two is required for the blocking.—*American Journal of Surgery.*

Strangulated Inguinal Hernia in an Infant of Two Months.—Edward Guion describes this case. All efforts at reducing the hernia were unsuccessful. The patient was so weak that general anesthesia was considered extremely dangerous and inadvisable. An incision over the inguinal protrusion was made. Great care was taken in separating the tissues until the sac was reached. This was opened and the strangulated part of the bowel was replaced. Although this part of the bowel was greatly discolored, its condition promised continued vitality. The opening was closed by through-and-through sutures, no attempt being made to dissect out the delicate structures. The incision was painted with collodion and covered with a gauze compress. The wound healed thoroughly without bulging. It is now thirty-five days after the operation and the child is in excellent condition.—*Archives of Pediatrics.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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PREOPERATIVE THROMBI AS A CAUSE OF POSTOPERATIVE COMPLICATIONS.

THE pathology of thrombosis and the dangers of resulting embolism have been very carefully studied and are now quite thoroughly appreciated by the profession. Thrombophlebitis is known to be a common occurrence in inflamed areas and also after extensive contusions and lacerations of the soft parts, and as these areas are frequently the site of operative procedures, the danger from embolism is necessarily increased. Attention is called to this fact in a recent communication by A. W. Abbott in *Surgery, Gynecology, and Obstetrics* for March, 1906. Although the risk of embolism, especially pulmonary, is well recognized, how far, he asks, does this knowledge affect our methods, and is there any practical manner in which these dangers may be minimized? He believes that many cases of sepsis, pulmonary embolism, and particularly many so-called cases of ether pneumonia, may be ascribed to the infection of a clotted vein or its disturbance by rough handling. In addition to these he also alludes to pyemia, abscess of the liver, and osteomyelitis, as other evidences of metastatic infection from the same source.

The only branch of surgery in which any special attention has apparently been given to this subject is that dealing with the diseases of the ear, and aural surgeons have formulated a definite operation for thrombi of the lateral and sigmoid sinuses. This consists of ligation of the jugular vein and clearance and drainage of the sinuses, and although difficult and usually done in desperate cases, it has proved eminently successful. Abbott claims that a similar course should be pursued in all operations complicated by thrombosis, but points out at the same time the difficulties connected with the application of such a procedure. Thus in the gastric and hepatic regions the thrombosed veins are likely to be hidden by adhesions or by the organs themselves. The renal, the mesenteric, the iliac, and the epigastric veins are likewise difficult of access, and thromboses complicating lacerations and contusions are also generally deep down in the tissues out of sight, if not out of reach. In operations for new growths, obstructive conditions, perforations, and wounds of the abdominal cavity, thrombosis may be more readily detected, and the same is true of operations in the peritoneum.

The rule may be laid down that in cases in which the collateral circulation is adequate, the thrombosed veins should be excised or ligated centrally; if the circulation is inadequate it is better to excise the veins with the adjacent necrosed tissue. If neither of these methods can be adopted, the entire region affected should be manipulated as little as possible, for fear of disturbing the clot or infecting the same.

As the author himself admits, the results have not always been satisfactory even when these rules are followed, although in most cases the outcome has been favorable. Renewed attention is directed, however, to the gravity of the condition by this and similar communications which have lately appeared and from which it is evident that extreme precautions must always be taken to avoid if possible the production of these dangerous and often fatal surgical complications. Abbott also refers to the fact that in certain cases it may be of value to recognize during an operation a puriform thrombophlebitis which cannot be controlled, for as this will usually prove fatal, it may be well to be prepared and to prepare those immediately interested in the patient for the inevitable outcome, so that the onus may be taken from the operation itself.

MATERNAL MORTALITY IN TENEMENT HOUSE OBSTETRICS.

"THE days may come and the days may go, but babies come forever," is the manner in which a famous couplet may be paraphrased in accordance with what takes place in some of our thickly populated tenement districts. No fear of race suicide will hold after a walk through some of the streets in these sections, and the frequency with which parturition occurs would naturally lead one to inquire how often a process which is always fraught with some degree of anxiety and fear terminates without fatalities. For many will contend that pregnancy and labor are physiological processes which, if left to themselves, will terminate without fault or error. That may be true to some extent under primitive conditions, but at the present day no one can deny that there are many disturbing factors which enter into the process aside from the pathological complications which we may or may not have been able to control. With the advance of obstetric knowledge the mortality among parturient women has markedly declined, so that even among the most adverse circumstances the death rate from childbirth will be found to be very low. In this connection some interesting figures are presented by J. A. Harrar (*Bulletin of the Lying-In Hospital,* March, 1906), who has studied the question in a very large number of cases of tenement house confinements conducted by the staff of one of our largest maternity hospitals. The work was done amidst all degrees of filth, misery, and poverty, but a death rate of but 0.357 per cent. in over 32,000 deliveries can only be regarded with satisfaction. It is to the underlying principle of intelligent supervision that these good results must be attributed, and efficient prophylaxis is nowhere of greater value than in obstetrics.

It is interesting to study Harrar's figures somewhat in detail. There was one death to every 280 deliveries, and the most frequent causes were sepsis, rupture of the uterus, eclampsia, and placenta prævia. Twenty-seven women, or about one in 1,200 cases succumbed to septic infection, and this is apparently the most serious factor now as formerly. The difficulty of securing even ordinary cleanliness

in the lying-in chamber, the ignorance of the patients, and the squalor of their surroundings no doubt enter into the situation, and it seems marvelous that they do not do so to a larger extent, for opportunities for septic infection are undoubtedly numerous. Another element of danger is the omnipresent midwife, who is stated to be always on hand in the capacity of nurse and general adviser, and may have conducted the labor in some cases until the appearance of a complication beyond her simple resources impels her to send for the hospital doctor. In Europe the constant endeavor has been to elevate the standard of these midwives, but in this country no restriction seems to be in force which limits or defines their field of activity.

Next to sepsis, rupture of the uterus was the most frequent cause of death; fifteen women succumbed to this accident, among the series noted, and thirteen deaths were due to eclampsia; placenta prævia ended fatally in twelve cases, and the remaining deaths were caused by a variety of other conditions. The entire mortality rate is relatively low, and the fact that almost one-quarter of the deaths were due to sepsis indicates in which direction a possible future reduction in the death rate may be hoped for.

BANKOK—A SANITARY PARADOX.

The healthful qualities of a city have been customarily gauged by the character of its natural environment and by the efforts which the municipality may make to supplement this by suitable sanitary arrangements. Where these have been neglected, it is expected that the general health of the inhabitants will be impaired, and this ordinarily in proportion to the extent to which the laws of sanitary living have been violated. It would be expected, therefore, that in a community where the environment is conducive to the spread of every form of disease, and where absolutely no effort is made to combat this tendency, the health of its inhabitants would correspondingly suffer. Any other view would be paradoxical, and yet the condition just noted is practically a picture of what exists at Bankok, in far eastern Siam, the home of the famed white elephant. Bankok is situated at the mouth of a large river, has a population of about three-quarters of a million, and is surrounded by low, marshy country. According to R. H. Bremridge, writing in the *Journal of Tropical Medicine* of April 16, 1906, it has a mean temperature of 83.5° F. and a rainfall of 46.5 inches. The large areas of smooth, stagnant water provide ample breeding grounds for hordes of mosquitos, among which are many anopheles. Everything would seem by nature to provide for malaria, and yet there is apparently very little in the city itself. There are no laws or regulations for the care of the public health. Open drains receive all the sewage, and the canals into which they empty furnish most of the water supply for the houses. In spite of all this, typhoid fever is not a common disease, and cholera, although always present, does not assume the proportions of even a moderate epidemic. Plague also has recently appeared, but has not spread as it was feared it would.

To any one with certain well fixed notions about sanitation this eastern city would appear like some dreadful nightmare, but, according to Bremridge, there is not much disease there, and the general appearance of the Europeans is more healthy than in many better cared for and better located places. It would seem that to combat properly the condition here represented nothing else would do than the complete destruction of the city. Any partial European system would fail to accomplish good and might be productive of harm. The writer wisely concludes that there must be some sort of a natural balance set up between the contending microorganisms and that in the fight for existence among themselves they are protecting the human species. To disturb this natural arrangement may mean disaster just as it has in numerous other instances.

But although this sanguine view may give satisfaction to those immediately concerned, there is no telling what the future may bring forth. In its present condition, Bankok cannot remain otherwise than a volcano of disease, ready to produce an eruption at any time when the proper incentive is at hand. As the means of communication grow more complete and extensive, the world necessarily becomes smaller year by year, and although Bankok is apparently too far away to do us any direct harm, its very presence contributes to a certain feeling of nervousness and apprehension.

MEDICAL EXPERT TESTIMONY.

The so-called insanity experts are coming in for a good deal of ridicule just now anent a case of alleged malingering by a wife murderer, in which the defense made out an excellent case of insanity by the aid of some of the most prominent of these experts. The man was sent to the asylum for insane criminals at Matteawan, and there recovered after a time. His cell-mate in the prison where he was confined until his trial was completed, is said to have testified that the man was shamming, using some sort of an application to the skin to make it dry and rough, going without food and sleep in order to make himself weak and nervous, schooling himself to endure sudden pinpricks without wincing, and acting the part of a fool whenever in the presence of others. The testimony of the man's fellow prisoner is not of much value, the only point in confirmation being that the alleged dement did not attempt to overthrow it, but promptly pleaded guilty to manslaughter in the first degree, and was sentenced to nineteen years and ten months in the penitentiary. The *Times* has published interviews regarding the case with three alienists, two of whom maintain that the man was insane at the time of his first trial, though admitting that he may have recovered, the third asserting that he was shamming throughout; thus sustaining the unfortunate reputation of experts, medical and nonmedical, on and off the stand, of often disagreeing.

Whether this criminal was or was not insane at the time the experts pronounced him to be so, we have no means of knowing, and the question is one of no particular importance, not even to the reputation of the alienists concerned. They are known to be honest men and competent specialists, and they doubtless would be the last to pretend to infallibility.

and to assert that they could never be mistaken in their diagnosis. It is the lawyers who set up this claim in murder trials and seek to convince the jury that diagnosis is an exact science. The physician knows that the contrary is the case, that mistakes are made daily by the most competent of diagnosticians, and in cases not only of supposed mental alienation, but even of the ordinary diseases of the body. It must be confessed that some experts foster this erroneous belief by the positiveness with which they give their testimony, though the contention is disproved by the equal positiveness with which they dispute the findings of the experts on the other side, who may be men of like attainments and reputation with themselves.

It has been contended that expert testimony would be more trustworthy and more serviceable in furthering the ends of justice were the witnesses paid by the State, and not retained by the lawyers of one or the other side. We doubt whether this would prove to be an effectual remedy, for the suggestion is based upon the uncomplimentary assumption that all experts are dishonest, or at least that their judgment can be warped by the fact that they are paid by the side in whose favor their testimony is to be given—an assumption which is, of course, untenable. It would, however, be better for the experts themselves, for, while their fees would probably be smaller, their testimony would be free from the suspicion of bias. But it would not make them more skillful diagnosticians; the findings of the different witnesses would be no less discordant and no less liable to be wrong. The one remedy lies in the instruction of the public and of the jury that the so-called experts are practitioners of an inexact science, more experienced and more instructed in their particular line than the average man, but nevertheless human and subject to err in observation and in judgment, and that undue weight should not be given to their testimony in doubtful cases.

The Functions of the Omentum.

Those who have frequent opportunities for inspecting the human abdominal viscera *in situ*, that is, pathologists and surgeons, are well accustomed to seeing great diversities in the size, form, and position of the omentum. It is not astonishing, therefore, that many different views are held in regard to a structure presenting so many variations. One of the most plausible theories regarding the use of the omentum is that, owing to its very abundant supply of large blood-vessels which are capable of great dilatation, it is able to serve as a regulator of the abdominal blood distribution, and Witzel, for example, estimates that one-quarter of the visceral blood supply of the abdomen can be contained in the omental vessels. This great vascularity also suggests another possibility, viz., that the omentum may to a large extent be the source of the abundant abdominal accumulations of serous fluid encountered under so many conditions. Such authors attach importance to the mechanical advantages attending the presence in the abdomen of a freely movable mass of tissues which can serve as packing material, as it were, to fill up chinks between the other viscera, and it has also been suggested that the omentum is of use in limiting the spread of infectious processes from one region of the abdomen to another. It has been found that the serosa of the omentum as well as of the diaphragmatic region has greater absorptive qualities than that of other portions of the abdominal interior, and when a little lamp black is thrown into the abdomen of an experiment animal the heaviest deposits are later on always found in these situations Numerous experiments have also been carried out to demonstrate the power of the omentum to assist in the repair of injuries and to dispose of dead material. Wounds of the uterus or bladder in dogs can undergo spontaneous repair through omental adhesions, and the spleen of rabbits cut from all its attachments but left free in the abdominal cavity can be caused to disappear completely through the same agency. The absorption of the splenic tissue is apparently effected through the agency of the phagocytes given off by the omentum, whose endothelial cells assume the rôle of macrophages, and a "phagocytopoietic" function has also been ascribed to this hardworking membrane which thereby becomes endowed with bactericidal powers. Schiefferdecker (*Deutsche medizinische Wochenschrift,* June 21, 1906), who is one of the most recent writers on the subject, explains this propensity of the omentum to attach itself to wounded areas or to fold itself about such a structure as the detached spleen, whereas it does not contract adhesions to healthy organs, by assuming that the omentum is secured to the raw surface of the exudation of fibrin that always follows the injury, Whether or not one accepts all of these various offices of the omentum, it seems probable that it has very decided functions and that it is distinctly a protective organ. This is also suggested by the fact that the horse, which has a very poorly developed omentum, is more prone to peritonitis after perforating wounds or operative procedures than are any of the other domestic animals.

English as She is Wrote at International Medical Congresses.

The wisdom of holding international congresses of medicine is often questioned, and among the numerous objections to their scientific value the linguistic problem occupies the foreground. Although most medical men of the present day are familiar to a greater or lesser extent with one or two languages besides their own, this knowledge serves them only slightly in a congress where several tongues may be requisite to represent the nationalities of all the participants. All efforts to introduce a universal language, even for commercial purposes, have unfortunately resulted in failure, and it would appear from certain efforts made at the last medical congress that all that can be hoped for is a definite agreement as regards technical terms. A German medical man had taken it upon himself to construct for the benefit of his colleagues at the Lisbon meeting a table of equivalent obstetrical terms which included those in ordinary use in Latin, Greek, French, German, English, and Italian. We cannot undertake to vouch for the accuracy of the other languages, but the author's success in dealing with the English expressions was not brilliant. A few examples picked at random from this table make one wonder whence the industrious author obtained his ideas regarding the English equivalents of well-known obstetrical expressions. Thus, triplets are referred to as "three-twins," the umbilical cord is called a "caul," mobility is "movableness," an umbilical murmur is a "hiss of the navel string," and the fetal heart sounds are "throbs of the heart"; a

bimanual examination is called "combined inquiry," the undilated cervix is referred to as an "impervious mouth." No user of English, we are quite certain, would recognize an hydatid cyst as a "moon calf" or "gastrotomy with removal of the pregnant uterus" as the well-known Porro's operation. Then, again, interlocked twins are spoken of as "twisted" and hydrocephalus as "watery head." A craniotomy is, according to this linguistic obstetrician, a "cephalic carve," and a perforator is a "dagger." In addition to these there are numerous other examples of how our language may be foully dealt with, and it must have been amusing to converse with any of the delegates unlearned in English who were compelled to rely on this "Obstetrical Baedecker" for their guidance.

Pernicious Advice from a Cabinet Officer.

The Secretary of the Treasury has recently published a circular, addressed to the bankers of the country, which may be sound financially, but betrays in the author a lamentable and almost incredible ignorance of sanitary first principles; it must be ignorance, for we cannot conceive that, knowing the evil of what he recommends, he would dare to suggest it. He advises the issue of a larger proportion of national bank notes of low denominations, alleging that the circulation of these notes is of longer duration than that of the hundred-dollar or thousand-dollar bills. So far, what he counsels is good, though the reason he gives for such counsel is bad; but he goes further, and requests the bankers to keep the bills in circulation as long as possible, and not to send them in for redemption "until unfit for use." To a banker with normal hygienic sense, the results of this advice would not be bad, for he would regard every soiled note deposited in his bank as "unfit for use," but this is not the interpretation the Secretary would have the readers put upon his work; he evidently means that the notes should be reissued and kept passing from one dirty hand to another, until the filth conceals the figures and the substance of the note threatens to dissolve away. What would be thought of an economist who, because laundry work costs money, might advise against a change of flannels, urging that they be worn continuously "until unfit for use?" Secretary Shaw needs instruction.

News of the Week.

Quarantine Regulations.—An amendment to the quarantine regulations applying specifically to all parts of the United States below the southern boundary of Maryland, has been issued by Secretary Shaw, with the object of enabling the fruit steamers to land their cargoes without detention. Under the new rules vessels are allowed the alternative of remaining out of the United States ports until five days from the time of leaving the infected port have elapsed or of making a change of crew. In the latter case the ship is permitted to enter as soon as the crew, except the master and chief engineer, have been removed from the vessel, placed in the quarantine station, the living quarters of the vessel thoroughly fumigated and a new crew placed on the vessel. Immediately after unloading all parts of the ship are required to be simultaneously fumigated for the destruction of mosquitoes. After this, loading is allowed, and the relief crew remains on the vessel until the quarantine station is reached, where the old crew goes aboard. The members of the relief crew are compelled to remain at the quarantine station until the arrival of another vessel or until relieved by the quarantine officer. Two sets of living quarters are to be kept at the quarantine station for the incoming and relief crews, and both quarters must be thoroughly fumigated immediately after being vacated.

Impure Foods.—The report of the New Hampshire State Board of Health, published July 14, declares that of 408 samples of prepared food products examined 186 were found to be adulterated, misbranded, or below the standard. These samples include canned meats, milk products, jellies and preserves, catsups and table sauces, and other articles. Nearly all of these articles, the report states, are manufactured outside of New Hampshire, but there is no legal way in which their entry into the State can be prohibited. Judgments have been entered in the Circuit Court of Lexington, Ky., against several sausage manufacturers and jobbers for selling adulterated products in violation of the Kentucky pure food law.

The Tuberculosis Campaign in Chicago.—A campaign to secure funds for the treatment of tuberculosis in Chicago was planned recently at the bimonthly meeting of the Executive Committee of the Chicago Tuberculosis Institute. Although efforts are being made to secure donations for summer camps and other means of treatment, the physicians and societies interested in the work pin most of their hopes for adequate funds on the charter legislation. A committee, consisting of Dr. Henry B. Favill, Dr. Frank Billings and Mrs. Lenora Hamlin, of the Institute, was appointed to confer with the charter convention with regard to additional revenue for the Department of Health. The Institute has raised, through the auxiliary committee, $1,000 for a summer camp, but has been obliged to abandon its plan of having tents in one of the parks, the South Park Board having very properly declined to listen to a proposition to that effect.

Health Pamphlet Issued by the Illinois State Board.—The Illinois State Board of Health has issued a new pamphlet, written on the same general lines as one published last summer, containing information on how to take care of the babies. Suggestions are given for the nursing mother, artificial feeding is fully discussed, and the advantages and disadvantages of the various infant foods are carefully considered. This pamphlet is issued for gratuitous distribution, and those who wish copies should apply to Dr. James A. Egan, Secretary of the Board, at Springfield, Ill.

Vital Statistics of Philadelphia.—For the week ended July 14 there were reported to the Philadelphia Bureau of Health a total of 539 deaths, as compared with 651 for the preceding week and 548 for the corresponding week of the previous year. Of this number 178 occurred in children under the age of one year, while there were 9 among persons between 80 and 90, and 1 in a person between 90 and 100. Diarrhea and enteritis were responsible for 115 deaths among children under the age of 2 years. Sixty-four deaths were due to tuberculosis of the lungs, 35 to Bright's disease, and 32 to heart disease. Four hundred and fifteen of the deaths occurred in natives of the United States and 115 in foreigners.

Crude Petroleum for the Plague.—Press dispatches announce that Dr. Turner, Health Officer of Bombay, has reported great success in the use of crude petroleum as a disinfectant against bubonic plague.

Telephone Consultations.—As the result of suit brought by a Viennese physician against a patient who refused to pay for professional advice given over the telephone the court decided that such consultations must be paid for as though held in the ordinary way.

Resuscitation of the Drowned.—The superintendent of the Third District of the Life Saving Service has reported a remarkable case of resuscitation after a prolonged immersion under water. The case is that of a man who was thrown into the water off the coast of Rhode Island on July 4 by the capsizing of a boat, and, according to the official report, remained under water for twenty-three minutes. Artificial respiration was kept up for an hour and forty-eight minutes before the first signs of returning consciousness were noted, and the patient did not recover complete consciousness until the following day.

Bellevue Hospital Training School.—The Aldermen's Finance Committee has reported favorably on the appropriation of $628,000 needed for the erection of a training school for nurses at Bellevue Hospital, and also on the appropriation of $2,000,000 for new police station houses.

Bequests to Charity.—Among the charitable bequests in the will of George J. Laighton are allotments of $5,000 to the Brooklyn Orphan Asylum Society, and $3,000 to the Brooklyn Home for Consumptives. By the will of the late Monroe B. Smith the sum of $50,000 is bequeathed to the Red Bank Sanitarium, a charity founded by the testator's father for the purpose of affording poor children opportunity during the summer of securing an outing and a ride on the river.

Smallpox on the Isthmus.—About twenty cases of smallpox have been reported from the Canal zone, but the disease has been mild in type and no deaths have occurred. The patients have all been negroes living in Colon.

Dr. James L. Greene of the Nebraska State Hospital, at Lincoln, has been appointed Superintendent of the Illinois Eastern Hospital for the Insane, and will assume charge at Kankakee within a few weeks. Dr. Greene's experience comprises fifteen years in dealing with inmates of institutions for the insane.

Dr. J. R. Rathmell of Chattanooga has been appointed to the chair of Theory and Practice of Medicine in the Chattanooga Medical College, in succession to the late Dr. Cobleigh, whose death occurred last year.

Officers of the Chicago Physicians' Club.—At the annual meeting of the Physicians' Club of Chicago, held June 26, the election of officers resulted as follows: *Chairman,* Dr. William T. Belfield; *Secretary,* Dr. Charles L. Mix; *Treasurer,* Dr. A. M. Corwin.

Lake Keuka (N. Y.) Medical and Surgical Association.—At the seventh annual meeting of this society, held at Grove Springs, Lake Keuka, the first week in July, the following officers were elected: *President,* Dr. J. E. Walker of Hornellsville; *Vice-President,* Dr. F. Driesbach of Dansville; *Secretary and Treasurer,* Dr. H. B. Nichols of Pulteney.

Death of Dr. Schaudinn.—Dr. Fritz Schaudinn, Director of the Department for the Study of Protozoal Diseases of the Institute for Tropical Hygiene in Hamburg, died of heart failure on June 22 at the age of thirty-six years. He was a pioneer in the study of protozoal diseases and was the discoverer of *Spirochæta pallida.*

Too Much Sanitation.—For months after Col. Gorgas took charge of sanitary matters in the Canal zone the chronic fault-finders were vociferous in their complaints that his efforts were fruitless. The task was too much for him, they said, and yellow fever and malaria would kill off every American who ventured into that plague-stricken region. The yellow fever disappeared and the malaria was subdued, and now the cry goes up that the Jamaica negroes are being decimated by pneumonia in consequence of the insistance upon ventilation of their cabins.

Obituary Notes.—Dr. Ezra D. Bemiss of Newark, N. J., died suddenly of heart disease on July 11 at the age of forty-three years. He was born in Canada, and had practised in Newark about twenty years.

Dr. Charles A. Tinker of this city died suddenly of heart disease at Westhampton Beach, L. I., on July 11, at the age of fifty-one years. Dr. Tinker was a native of Mystic Bridge, Conn., and was graduated from the New York University Medical School in 1878, since which time he had practised continuously in Harlem.

Dr. Albert H. Taft of Winchester, N. H., died on June 25 at the age of sixty-nine years. After serving through the Civil War, he received his medical degree from Bowdoin College. He practised first in Hancock, N. H., but removed to Winchester in 1873, and had remained there ever since.

Dr. Wm. G. Houtz of Lincoln, Neb., died on June 30 at the age of sixty-six years. He received his medical education at Girard Medical College and practised for many years in Troy Grove, Ill. He removed to Lincoln in 1881, and had practised there ever since.

Dr. George Cassel of Hartford City, Ind., died on July 2 at the age of sixty years. He was a graduate of the Ohio Medical College, but retired from active work some years ago.

Dr. J. A. J. Patterson of Liberty, N. C., died on July 6 at the age of sixty-five years, after an illness of several months.

Dr. Julia Wallace Russell of Concord, N. H., died on July 3 at the age of sixty-three years. She was active in the founding of the New Hampshire Memorial Hospital for women and children.

Dr. Paul Shekawana of Iowa City, Ia., died on July 7 as the result of injuries received in a trolley car accident. He was bacteriologist of the University of Iowa and the State Board of Health.

Correspondence.

"FITTING GLASSES," THE DIAGNOSIS OF ERRORS OF REFRACTION, THE INFLUENCE OF EYESTRAIN, ETC.

To the Editor of the Medical Record:

Sir:—Fearing that the many erroneous statements made in the article of Dr. A. Edward Davis, in your issue of June 30, 1906, may mislead the incautious, I beg for space to point out what seem to me the more important. With one exception almost every position taken is in part or wholly wrong, so that the hackneyed story of the dictionary definition again applies: The crawfish is not red, it is not a fish, and it does not walk backward. Many considerations compel too great brevity on my part:

1. The very title of the article is inaccurate. By all oculists and opticians it is common to speak of "the fitting of glasses" as a part of the optician's art, having nothing to do with the diagnosis of errors of refraction, with eyestrain, or with its systemic effects.

2. The epitome of the history of the discovery of glasses, of astigmatism, and of other refractive errors, of the *theory* of physical and physiologic optics, is made up of many sins of omission and commission; it has been frequently done, and better done, than here, and was not at all necessary to introduce the real subject.

3. The ophthalmoscope is made much of as a method of diagnosing refraction errors, but is of no use to those who

value scientific precision in such work. It has had almost no influence in "placing the subject of refraction on a sound basis."

4. The ophthalmometer is credited with even a greater rôle in "the science and art of fitting glasses." All skilled oculists are agreed that at best it is only an aid, never solely to be relied on. I myself find it of no use whatever. The article confesses this, unwittingly, of course, in the statement that it will, "as a rule," give the astigmatism to within an error of 0.50 D. Within that error, however, lies the work and success of the careful refractionist. Relief of eyestrain and its systematic effects depend precisely upon eliminating this astigmatism of 0.50 D. It is perfectly plain why those who do not eliminate this small degree of astigmatic error jest at the "extremists" and "exaggerators," and the "eyestrain faddists." The "hobby-rider" who does correct the neglected 0.50 D. and less of astigmatism cures the reflexes of his patients, and, naturally enough, emphasizes the truth.

5. Retinoscopy is the most accurate and trustworthy objective method of diagnosing errors of refraction. The article I criticise discourages the method, because it requires carefulness, time, and conscientiousness on the part of the oculist. But what is the oculist "here for"?

6. The epitome of the history of the discovery of reflex ocular neuroses is all wrong, even as to the dates and references. It is a sorry jumble of inaccuracies and misstatements. It seems designed only to deny and ridicule the theory of the very existence of systemic diseases due to eyestrain. It ends with a quotation from the Prophet of the god, *Ophthalmometer*, that "the belief in any morbid constitutional condition" due to eyestrain is nonsense. Although this is surpassingly frank and brave, it is itself most amusing nonsense. Hundreds of capable oculists and general practitioners smilingly demur to the ignominious implication. The quotations from Fisher, Sachs, Dana, and others are in these times delightfully funny. One hopes they will be repeated many times in the future, because getting such "scientists" on record is a great desideratum. When the "flop" comes it will thus perforce be all the more evident and mirth-provoking.

7. Excessive space is given to the summary of Dr. Howe's charming article. Unfortunately, neither the quoter nor the "collective investigator" gives the names of those who reply to the *questionnaire*. The names of those who scorned to reply to such an absurd "investigation" are also wisely and equally omitted. Were it not that so many are put on record, the whole pother has not the value of the paper on which it was tabulated. If your contributor knew several things about it, even he would realize how much less valuable it is than that blank foolscap page.

8. Your contributor's article has another indirect merit: it exposes the "science" and "art" of many who are doing refraction work. Its chief motive appears to be to deny the advisability of the use of cycloplegia in the diagnosis of refraction errors. But all who know, know most certainly that there can be no accuracy in such work without what the author calls a score of times, *cyclopegia*. This is the crowning proof of the author's supreme abandonment of all reserve: he makes the unblushing plea that refraction as practised nowadays "comes nearer to being an exact science than any other branch of medicine." In fact and in truth, we all know it to be the most inexact. The author himself forgetfully admits and reemphasizes the truth that few or no oculists do agree in their diagnoses and prescriptions.

9. Patients go to opticians, it is said, chiefly because the bad oculists persist in using "cyclopegics." I should say it is because they don't use them, and because the optician can do as good work (*gratis*, too) as oculists do who do not use "drops," and who scorn 0.50 D. (and often much more) of astigmatism. Your contributor is in naïve innocence that modern ophthalmology does not disable a patient "ten days," nor "three days," not even one day. In eighty minutes after a patient enters the office he may be completely cycloplegicized, accurately refracted, and the accommodation and pupils wholly normalized.

10. One of the most inexcusable blunders made by your contributor is the exasperating mixings-up and indiscriminations in crediting men with service in bringing about progress in the science and art of refraction. Men are credited and honored for work they did not raise a hand in doing; others who labored mightily are wholly ignored. Men may be made the heroes of discoveries and reform in refraction who have always scorned and still despise refraction; who "cure by taking all glasses off"; who detest "cycloplegia"; who, until very recently at least, sent their patients to the optician to be refracted; who to-day would "not bother about a little astigmatism."

GEORGE M. GOULD, M.D.

PHILADELPHIA.

OUR LONDON LETTER.

(From Our Special Correspondent.)

ABDOMINAL SECTION—TYPHOID AND HOSPITALS OF ASYLUMS BOARD—DIPHTHERIA—CITY COUNCIL AND COUNTY COUNCIL ON FOOD INSPECTIONS.

LONDON, June 29, 1906.

DR. Ranken Lyle has communicated to the Gynecological Society a series of fifty consecutive abdominal sections performed at Newcastle, between October, 1903, and January, 1906. There are only six beds in his hospital, and the operations are performed in an ordinary attic, not specially fitted up. He had only one death to report in the series. His technique he reported as the simplest, as he was of the opinion that complicated methods and elaborate preparations were unnecessary and might prove sources of danger by leading sometimes to some essential being overlooked. Antisepsis was carefully carried out, hands and forearms being thoroughly washed in hot lysol solution with a nail-brush, turpentine and methylated spirits then being used and washings with corrosive sublimate 1 in 1,000. Instruments were boiled and put in 1 in 40 carbolic solution. Sponges were of gauze, boiled for 20 minutes and wrung out of hot normal saline liquid. All buried ligatures were of catgut, prepared with ether, methylated spirit, and sublimate. Silkworm gut was used for all superficial sutures. The abdomen was prepared the previous night by washing with soap and water, then sponging with turpentine and methylated spirit, followed by a sublimate pad. Just before the operation it was washed with sublimate solution 1 in 1,000. No vaginal antisepsis was employed, even for panhysterectomy. Incisions were as short as consistent for the operations, which accounted for absence of shock and diminished risk of hernia. All cut peritoneal surfaces were accurately adjusted. The abdominal wound was closed in three and sometimes four layers in order to adjust corresponding structures. A strip of gauze, wrung out of hot saline and covered with plain absorbent wool, was the dressing, and this was kept in position by strapping and flannel bandage. In three cases of pyosalpinx a little purulent fluid escaped but was carefully mopped up and caused no trouble. Where a large raw surface of peritoneum occurred, as in ventral fixation, as much normal saline as possible was left in the abdomen, so as to float the intestines from the wound, with the view of preventing adhesions.

Dr. Lyle's after-treatment was equally simple. About three hours after operation a drink of hot water, with a little sodium bicarbonate was given, as it is often effectual in bilious vomiting. This was continued and barley water allowed until next morning, when a cup of tea was given, followed during the day by milk diluted with barley water or soda water. Early on the second morning, calomel, in two doses of 5 and 3 grains, at an hour's interval, and one-half hour later hot seidlitz mixture were given. As soon as the bowels were moved the patient was put on a liberal diet. Sutures were removed on the tenth day. Interesting details of cases were given, and Dr. Lyle offered the following points as desirable for securing good results: 1. Correct preliminary diagnosis. 2. Simple technique. 3. Simple antiseptic preparation with asepsis. 4. Use of few instruments and appliances. 5. Limited incisions. 6. Correct adjustment of all cut peritoneal surfaces. 7. Complete closure of abdominal cavity without any drainage. 8. Free use of normal saline when purulent material gets into pelvis or abdomen.

In the discussion Dr. Lyle was congratulated on his results, only one case having died, and that from a disease which could not be anticipated or prevented—pulmonary embolism on the tenth day.

Dr. Herman believed that septic poison was conveyed only by contact, and its particles being subject to gravity did not fly up to the operator's beard or hair. The only point was to make everything that touched the patient or the wound aseptic. If there were an abscess he would make some provision for the exit of pus; in several cases of extrauterine abscess he had used gauze for this purpose, putting it in the opening and so hindering union by first intention with satisfactory results.

Dr. Eden said diagnosis was too much neglected, and he was glad Dr. Lyle had emphasized its importance. He thought rubber gloves necessary in infective cases. He managed, as far as possible, his own instruments, to reduce the risk of others handling them. He found no harm in a gauze drain passed through a rubber tube; but the more experience he had of abdominal section the less he saw reason for drainage. He thought there was some risk of conveying organisms by filling the peritoneal cavity with saline fluid.

Dr. Elder thought sepsis after an operation must be due to infective material from outside. Few would go as far as Dr. Lyle in regard to drainage. Gloves interfered with the delicacy of touch, but were necessary in suppurative cases.

Dr. R. L. Dickinson of New York said he had been impressed with the simplicity and common sense of Dr. Lyle's methods. He thought in America there was a danger of having too many assistants in these operations: the training schools insisted on as many nurses as possible being admitted. He preferred doing his own work and giving assistants as little chance as possible of omissions in the antiseptic arrangements. Catgut was commonly used in America and the use of gloves was practically universal. The percentage of septic cases had fallen since gloves were generally used. He made the smallest incisions. The custom in America was never to drain, except for pus in the connective tissue.

Dr. Macnaughten Jones said the good of early operation was asepsis and nothing should be omitted to secure it. He indorsed free flushing in cases requiring it. The three most important points were temperature, pulse, and bowel. The last gave him most anxiety. Sepsis sometimes occurred in spite of every precaution—as Fritsch said, "The patient did not die because of sepsis, but became septic because he was dying."

Dr. Ryall could not understand how pouring fluid into the abdomen could prevent adhesions; they were best prevented by getting the bowels open early. He much preferred tube drains to gauze. He believed in masks to prevent talking, whispering, or spitting into a wound. The shorter the operation the better for the patient.

Mr. Bowreman Jessett, President, said an incision should be large enough to permit removal of a tumor without stretching and give a view of the pelvis. He always disinfected the vagina, as it might have to be opened in the course of the operation. The secret of success he thought was covering the stump by peritoneum. Sutures should be of catgut.

Dr. Lyle, in reply, said he had only two assistants, and only three or four students could stand in the room. He drained only in cases of pelvic abscess; in others he flushed the cavity and closed the wound. He thought the normal saline stimulated the circulation in the peritoneum and assisted the phagocytes. He did not think gloves necessary. Perhaps nobody talked more than he did when operating, but he had seen no ill effects. He did not think much of disinfecting the vagina; it was not usually septic. He was careful to flush out the pelvis and wash away the pus.

At yesterday's meeting of the Common Council of the City a report from the Health Committee recommended representations to be made to the local Government Board, urging the necessity of forthwith promoting legislation for the compulsory inspection by experts of all animals intended for human food just before slaughter, and all meat free from disease after inspection to be officially stamped. Further, imported food to be subjected to the same tests, and that meat packed in a way to prevent inspection should be excluded from the United Kingdom. Private slaughter-houses were recommended to be abolished. An objection was raised to hurried legislation on account of the vast importance of some of the issues raised in the report, and the discussion was adjourned, the committee being asked to report on the existing inspection in the central markets.

In the House of Commons the President of the Local Government Board, in reply to a question, said he did not see any use in making surprise visits to English manufactories of food products. He was considering the question of a conference of local authorities as to cooperating.

On Tuesday the County Council met after the Whitsun recess and received a report from its Public Health Committee recommending application to Parliament for authority to establish public slaughter-houses and food inspection stations, and even to provide for the inspection of all food entering the metropolis. It is suggested that inspectors with veterinary and other qualifications would be required. It is said to be easy for a vender to avoid seizure by removing bad goods across the boundary of his district into the next, and therefore the disposal of unsound food goes on to an extent that would not be possible under a single efficient authority for the whole area.

The Asylums Committee of the Council has not abandoned the idea of superseding the workhouse lunacy wards by receiving-houses to be established by the council. Many guardians are opposed to this proposal, but the committee still advocates it, arguing that under such a system incipient cases would more likely be received and their disorder arrested, thus preventing long seclusion in the asylums.

A serious outbreak of typhoid fever in one of the newest institutions of the Asylum Board was reported to that body on Saturday and elicited some severe remarks on the steps taken to cope with the situation. Up to the 18th inst. fifty-four patients had been attacked and two attendants were in bed. Professor Smith and other members of the Board declared that the sub-committee had displayed strange inactivity and negligence. The gravity of the situation had apparently not been realized until the attention of the Local Government Board was called to it by the Urban District Council, when Dr. Copeman was at once sent to inquire into the circumstances and report. The chairman of the sub-committee defended it and said the outbreak was investigated, the drainage up to date, and the diet could not be the cause. The matter was referred to the General Purposes Committee to examine.

The mortality from diphtheria in the hospitals of the Board during the year was reported at the meeting as 8.3 per cent., the lowest on record, and this was regarded as due to antitoxin treatment. Professor Smith remarked that in 1823, the year before the serum was used, the death-rate among the patients was 30.4. At the Brook Hospital it was proved that if the remedy were used early there was not much fear of a fatal result, and the longer the delay before using it the higher became the mortality. It was to be held beyond doubt that they had a most potent remedy for diphtheria. One of the most satisfactory things done by the board during the eighteen years he had been a member was to make provision for producing antitoxin serum in its own laboratories.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

A NEW SOCIETY—MILITARY SURGERY—GASTRIC ULCER—BIER'S HYPEREMIA—THE GERMAN ROENTGEN SOCIETY.

BERLIN, June 26, 1906.

A NEW medical society has been formed here, entitled the "Zwanglose Demonstrationsgesellschaft." It is planned to have fortnightly demonstrations of unusual cases and is intended especially to keep specialists in touch with other branches of medicine. The meetings are of great interest, but as they consist only of short demonstrations they are not suitable for reports in these letters.

As in former years, the last Congress of German Surgeons held at Berlin was the occasion of the presentation of many interesting communications. Three questions in particular were extensively discussed and were the subjects of many papers: military surgery, gastric ulcer, and the Bier treatment. The surgical experiences of the Russo-Japanese War were dealt with by many speakers. Zoege von Manteuffel of Dorpat said that the small surgical stations must be replaced by larger ones because the greater range of the modern small arms caused battles to be fought at greater distances. At the front flying columns are most effective, consisting of carts and pack mules. A large number of conveyances are necessary to keep up communication between the flying columns and the main surgical stations. The first aid should consist in the application of sterile bandages and the fixation of injured limbs. Only wounds of the cranium require immediate major operation to avoid meningitis, and liver wounds require tamponade; all other wounds, including those of the heart and thorax are to be treated expectantly. Schaefer of Berlin read a paper on the effects of modern firearms, in which he said that the battles of to-day were not more bloody than those of the Franco-Prussian War, but that the individual soldier underwent greater danger. The danger of gunshot injuries was greatest among the infantry and less so in the artillery and cavalry. The statistics of 36,000 wounded showed that the death rate was very small, and that more than half of the number were later on able to return to the front. Goldammer of Hamburg described his experiences in South African warfare, in which the battlefield is often very far removed from the possibility of surgical assistance. Even under these conditions the dry treatment of the injuries gave the best results, as well as the principle of touching the wounds as little as possible. Vettingen of Berlin emphasized the improvement in the prognosis of gunshot wounds of the abdomen since the use of projectiles of smaller caliber had become general. The intestines were more likely to escape injury and the track of the bullet was usually very small. For these cases the first rule was to avoid overtreatment, and laparotomy was justified only when injury of the gut was to be assumed, or on account of hemorrhage or prolapse of the intestine.

Krönlein of Zürich read the introductory paper on the surgery of gastric ulcer. He stated that the death rate immediately after operation had become greatly reduced,

and that the results of gastroenterostomy were very excellent because cicatrization of the ulcer was secured and the normal function of the stomach was restored. Excision of the ulcer should be performed only in rare cases, as the condition was usually multiple. Pyloroplasty and gastrolysis were operations which should never be performed. Resection of the pylorus for ulceration or stenosis in this region was justified only if carcinoma were feared. In the very animated discussion that followed such eminent surgeons as Kümmell, Lorenz, Kocher, and Braun took part and fully agreed with Krönlein in his preference for gastroenterostomy. Only Rydygier of Lemberg and Kausch of Schöneberg spoke in favor of resection of the ulcer as being easier to perform. Fiebig of Vienna had studied the question experimentally and observed on dogs the effect of the different operative procedures. He had found that in his experience the best results followed gastroenterostomy combined with enteroanastomosis.

Hals of Magdeburg opened the discussion of Bier's method of hyperemia, saying that it was useful not only in treating inflammation but also for infected wounds. The method was inapplicable in cases of erysipelas, thrombophlebitis and diabetic gangrene. Rotter of Berlin considered that the method was useless in osteomyelitis. Stick of Breslau advised drainage in connection with the method for mastitis. Danielsen of Marburg had found the method useful for the treatment of otitis, and Heidenhain of Worms for obtaining soft scars after operation. On the other hand the method had also some opponents. Lick of Hamburg reported cases in which pain and suppuration had been increased by it, and he considered that in streptococcus cellulitis the old treatment with a free incision was preferable. Owing to the fact that the method required the constant supervision of the physician it was applicable only in hospitals. Lexer of Königsberg believed that the hyperemia treatment should be used only for mild cases in acute affections, and that in more severe conditions it should be preceded by free incision. The unusually animated discussion in general bore witness to the effectiveness of the procedure in a number of cases of acute and chronic disease, and Bier himself in closing said that he had obtained the best results in most acute cases and especially in acute inflammatory processes.

At the second congress of the German Roentgen Society a number of papers were read on methods for measuring the rays, but no practicable means for this purpose were suggested. Levy-Dohrn of Berlin pointed out that the difficulty in this direction lay in the irregularities in effectiveness of the apparatus, the quality of the tube, the variety of the rays, and the size of the field to be influenced. Grashey of Munich considered it important not only to differentiate soft and hard tubes, but also to ascertain the composition of the gas within the tube. Stegman of Vienna said that he had often seen very great effects produced by the smallest doses, and he considered that the individuality of the patient was the greatest factor, so that accurate estimation was not always possible.

Several interesting papers were read on the subject of *x*-ray diagnosis. Grummath of Berlin described the use of small tubes made for introduction into the mouth for the purpose of determining the nature of various affections of the teeth and maxillæ. Albers-Schönberg of Hamburg discussed the sources of error in the diagnosis of renal and ureteral calculi and referred to such misleading structures as calcareous myomata and phleboliths. Graesner of Cologne showed radiographs of a case of osteomalacia, scoliosis, and fracture of the vertebræ which demonstrated the close connection between osteomalacia and rachitis. Pictures were also shown proving that fractures of the lumbar vertebræ could be caused by very slight degrees of force.

In a paper dealing with the therapeutic application of the rays, Schmidt of Berlin said that he had obtained good results by their aid in cases of prostatic enlargement. Other investigators stated in the discussion that fibrous and cystic goiters were not affected by the Roentgen rays, whereas in cases of parenchymatous enlargement the gland apparently became smaller. Rosenberger of Würtzburg warmly advocated the use of the rays as an adjunct to surgical treatment in cancer, and spoke of a recurrent carcinoma the size of the fist which was cured in thirty sessions. Eberlein of Berlin said that he had cured with the Roentgen rays a case of polyarthritis in a chimpanzee.

A veritable sensation was caused by the demonstration of radiographs by Alexander Kesmarck of Buda Pesth which were remarkable for their plastic effect, but the author did not disclose the secret of the means of their production.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

EXTERMINATION OF PLAGUE-INFECTED RATS—PLAGUE IN HONG KONG—A TIDE IN AN ARTESIAN WELL—NEW SANITARY CODE FOR MANILA—PERSONAL NOTES.

MANILA, May 12, 1906.

THE bacteriological examination of rats caught in the city of Manila, for the purpose of ascertaining if they are infected with plague, has been carried out systematically since the first rats so infected were discovered, during the early part of March. It will be remembered that it was reported at that time that not only the premises in which the infected rats were found, but the entire block in which the premises were located was treated just the same as though cases of plague had occurred in human beings. Active rat-catching has been continued in the districts which were infected. During the past three weeks no more plague-infected rats have been found, from which it would appear that the war waged upon these pests by the Bureau of Health had been entirely successful.

No cases of human plague have occurred in the city of Manila since April 20. From the foregoing it will be seen that the claims made by Kitasato and other Japanese physicians, that whenever plague-infected rats are found that human plague will follow within two months, was not confirmed by the local experience.

Hong Kong is apparently worse afflicted with plague this year than has been the case for some years past. From the first of January to the 19th of May, there were 491 cases with 461 deaths. Of these, 483 cases occurred among Chinese, with 456 deaths, 4 cases occurred among Europeans, with two deaths, and four cases with three deaths among other Asiatics. The actual number of cases of plague in Hong Hong is probably much greater than is shown by these figures, because it is customary for a Chinaman who is stricken with plague to leave Hong Kong at once for Canton or some other place, in order that he may avoid the disinfection of his house and other sanitary measures carried out by the health authorities. For the week ending May 19, 1906, 90 cases with 83 deaths were reported.

One case of plague arrived in Manila May 6, on a steamer from Hong Kong. The same was promptly isolated and treated at the San Lazaro Plague Hospital. The patient was a Japanese female servant who was en route from Japan to Manila, and was detained in Hong Kong awaiting the departure of a vessel for the Philippines. The disease was no doubt contracted at Hong Kong.

The artesian well which was bored on the island of Cauit, for the Cebu Quarantine Station, was completed a few weeks ago. Water was struck at a depth of 250 feet and is almost fresh, but a remarkable circumstance in connection with it is the fact that the water in the well rises and falls with the tide, yet the overflow of the well is always in the neighborhood of six feet above the level of the surrounding ocean. A biological examination of the water shows a very small number of bacteria, and no ameba or pathological protozoa.

The epidemic of malarial fever among the troops at Camp Stotsenberg, mention of which was made several weeks ago, is now entirely under control. Thorough screening of the infected cases, and prophylactic doses of quinine, were used in stamping out the scourge.

The Sanitary Code for the City of Manila has been under consideration by the Municipal Board for some months past and has now been printed in the shape of a proposed ordinance, and a public discussion will take place June 4, in order to give the people of the city an opportunity to express theselves with regard to it. The code is most complete in its character, and if passed in its present form it will be one of the most complete sanitary codes possessed by any American city.

The warm season this year has been one of the hottest that has been experienced in a number of years. For weeks at a time the temperature during the day has been between 96° and 100° Fahrenheit. In spite of the great heat, however, no sunstrokes have been reported, in fact, sunstroke in the Philippine Islands is exceedingly rare.

Dr. J. H. Biggar, Medical Inspector, Bureau of Health, left Manila May 5, for the United States, by way of Europe, on a six months' vacation.

Dr. W. A. Christensen, Medical Inspector, Bureau of Health, will sail for the United States on the transport due to leave here May 20.

Assistant Surgeon W. E. Ebersole, United States Marine Hospital Service, formerly stationed at San Francisco, arrived in Manila, May 11, and will take up the duties of boarding officer in the Quarantine Service at this port.

Passed Assistant Surgeon G. W. McCoy, United States Marine Hospital Service, has been relieved from further

duty in the Philippine Islands, and directed to proceed to San Francisco, and report his arrival to the Bureau in Washington, by wire.

Progress of Medical Science.

New York Medical Journal, July 7, 1906.

Treatment of Tabes in the Preataxic Stage.—The various drugs which have been proposed at various times are enumerated by A. D. Young. If silver nitrate is given, it should be taken for one month and then be suspended for ten days, or should be accompanied by arsenic to the physiological limit. Antisyphilitic treatment should be confined to those cases showing tabetic symptoms within two years of infection, and accompanied by luetic manifestations outside the nervous system. Mercury and the iodide may do much harm in non-specific cases. Mental and physical quietude should be most strongly insisted upon. The tepid bath is often of service, and the general discipline of hydrotherapeutic establishments is often of great service. Electricity is advised by Erb, whose directions for galvanism are to place a moderate-sized anode in the vicinity of the cervical sympathetic and a large cathode on the side of the vertebral column for four or five minutes, moving it from above downward. The faradic brush may be used over the skin of the back. Plain food, plenty of sleep, moderate amusements, avoidance of confining and monotonous occupation, all find their proper place. For the lancinating pains we may give the coal-tar products, methylene blue, salicylates, and bromides. Often only morphine will relieve, but care must be observed not to form a habit. Cocaine will relieve laryngeal crises, and suppositories of opium, iodoform, and belladonna may relieve bladder and rectal pains.

Automatic or Unintentional Suicide in an Epileptic.—A unique case is recorded by W. P. Spratling. The patient was a man of twenty-one years, his attacks alternating between grand and petit mal. After the latter he was invariably automatic for some minutes. On the morning of his death he was seen fifteen minutes previously thereto in good condition. When found, he was dead. His mouth and hands were stained with black ink, and an ink bottle of about two ounces capacity lay on a bed near him, with the cork out and less than half an ounce of ink in the bottle. The ink was of the kind used by architects on mechanical drawings. Its odor indicated the presence of phenol and aniline oil. It also contained nitrobenzol. The patient used it in his work in the Sloyd school at the Craig Colony. It was the impression at first that the patient had committed suicide by purposely drinking the ink; but further investigation led the author to believe firmly that he drank the ink while in an automatc amnesic state following a petit mal seizure. His father came to the colony a week later and said that on a number of occasions the boy had attempted to drink various improper things while in such a state following seizures. The author adds that many of the patients at the colony remain in automatic amnesic states anywhere from a few seconds up to two or three days, and even weeks after seizures of various types. During that time they are capable of performing acts of various degrees of complexity, with which they are familiar, but they are absolutely unconscious of what they are about, and it is his belief that while in this state they can do nothing new. When some are in this state and are spoken to quite loudly, they will answer briefly, but they will have absolutely no knowledge of the conversation afterward.

The Early Symptoms of Tuberculosis and How They May Be Developed when the Applicant Attempts to Conceal Them.—Ward Brinton considers this subject from the special point of view of the life-insurance examiner. He takes up in succession the symptoms of cough, hemoptysis, dyspnea, pain, fever, general appearance, and the matter of alimentation, in their significance to the matter of an early diagnosis, making suggestions to be followed in case the patient's answers are evasive and unsatisfactory. Too many details are given for reproduction here. Inquiry as to possible nasal catarrh may sometimes elicit the fact that the patient has the real dry hack suggesting incipient pulmonary trouble. Intermittent hoarseness is suspicious; so also a disposition to curtail the amount of bodily exercise, on account of the dyspnea thereby occasioned. Sometimes, as we question in this particular, the patient expands his chest vigorously and says he never gets out of breath, yet the very expansion may set up a tendency to cough. Pains about the chest are most suggestive. Most pleurisies are really of a tuberculous nature. It is difficult for the insurance examiner to get a line on the patient's temperature range, but the noticing by the latter of any undue warmth in the afternoon, flushing of the face, warmth of the palms, dryness of the lips, with a trifling respiratory increase and pulse rapidity, may be of significance. The insurance examiner is placed at a disadvantage with those who have been "coached" with regard to answering questions. The detection of slight degrees of the malady is often difficult, and not until a patient has been under observation for a long time and repeatedly examined can a positive diagnosis be made.

Journal of the American Medical Association, July 14, 1906

Treatment of Insanity in General Hospitals.—D. R. Brower for thirty years has been treating selected cases of insanity in the wards of general hospitals, with success sufficient to justify him in urging this plan on the profession generally. The method used is substantially the Weir Mitchell rest cure, and the cases specially amenable to this treatment are the autotoxic and exhaustional ones. For the progressively degenerative types the only proper place is the special hospital for the insane. The rest cure should be followed by judicious exercise, congenial occupation, etc. Details of the treatment are given.

The Bedbug as a Transmitter of Disease.—A. A. Girault reviews the facts so far as known regarding the agency of the bedbug in the conveyance of disease to man, and comes to the conclusion, with Nuttall, that nothing has yet been definitely proven. This insect is under strong suspicion as regards relapsing fever, leprosy, bubonic plague, anthrax, and tuberculosis, and the possibility of its agency in the spread of other diseases, such as diphtheria and syphilis, has been prominently suggested. Coplin has found that pure cultures of the typhoid bacillus could be inoculated from infected bedbugs, and Girault finds that they are apparently fully as greedy for the blood of mice, which are suspected of being the carriers of some diseases, as they are of that of man. He holds, therefore, that considerations of health and self-defense, as well as of decency and personal cleanliness, bid us exercise caution against this very objectionable parasite.

Negri Bodies in Hydrophobia.—D. J. Davis describes these bodies, discovered by Negri in 1903, and since found to be almost universally present in the protoplasm of the nerve cells and occasionally in the nerve processes of rabid animals, man included. The percentage of cases in which they are not found is very small, and he thinks that with more experience and improved staining methods it may be made still smaller. The sizes vary from quite large to almost ultramicroscopic, and the fact that the virus passes through the Berkefeld filter No. 5 does not exclude these bodies from being etiologically associated with the disease, as an ultramicroscopic stage of the organism may exist, as Volpino has held. They are usually oval or round, and have a distinct ringlike or rosette internal structure, although the smaller ones are generally homogeneous. They are strongly eosinophilic, but by proper staining basic staining granules are seen which are different from the ringlike structures. For fixing the tissues Zenker's fluid is best, but sublimate has also been recommended. Alcohol and formalin are unsuitable. Any of the ordinary stains, such as hematoxylin or eosin, bring the bodies out distinctly. Details of various methods that have been recommended are given. Davis points out their value in the diagnosis of rabies; they should always be sought for, the Nelis-van Gehuchten reaction of the proliferation of endothelial cells in ganglion cell capsules being also incidentally looked for. The test has several advantages over that by inoculation; it is quicker, is fully as reliable, and is longer available after putrefaction has set in. The ability to make the diagnosis accurately within a very short time is by itself sufficiently important. Little is known as yet of the true nature of these bodies, whether they are protozoa, as Negri held, or not. If they are degeneration products they are different from any that are so far known. They are specific for rabies and hence of importance as diagnostic structures.

Calcification of the Vas Deferens and Seminal Vesicles.—S. George reports a case in which a bony mass was found in the wall of the right seminal vesicle. He reports also a second case of calcification of the left vas deferens which, unlike the other, was not a regressive metamorphosis, but a calcification in connection with chronic inflammation, and very probably the result of gonorrheal deferentitis. Such conditions have little clinical significance, except that possibly in rectal examinations they may be mistaken for calculi or neo-

plasms in the bladder. From a theoretical point of view, however, they are of interest.

Locating Fistulæ.—H. A. Royster reports a case of fistula following celiotomy, the opening of which into the bowel could not be satisfactorily located on account of dense matted adhesions. All attempts to find the hole in the bowel were fruitless until, at last, at the second operation for the purpose of closing it, he had the nurse pass a long rubber catheter up the rectum, and with the abdomen still open, he injected an ounce of hydrogen dioxide. As soon as this substance reached the sigmoid there was an effervescence, indicating the location of the fistula, which was grasped with forceps and closed with successful and permanent result.

The Lancet, June 30, 1906.

Idiosyncrasy of the Skin in Regard to Mercuric Chloride.—In an Italian girl with submaxillary abscess, R. Bellantoni incised the latter, washing with a 1-1,000 solution of bichloride. A wet gauze dressing, the same solution being used, was bound on. The next day the skin of the axilla, adjoining thorax, and submaxillary region was scarlet red and covered with small pustules. The appearance was much like that of a burn of the first degree. Under cleansing with sterile water, bismuth applications, and dry sterile gauze the lesions healed in a few days.

The Nature of Surgical Shock.—W. Sheen reviews the various theories which have been put forth as to the nature of surgical shock, and finds that there are three distinct stages leading up to a fatal result: (1) Pressor impulses reach the vasomotor centers and are followed by contraction of arterioles throughout the body. At the same time the portal venous system relaxes. Both the arterial and the portal pressures are raised. (2) Depressor impulses reach the vasomotor centers, the arterioles throughout the body relax, but do not dilate, because there is no blood to fill them, remaining in a retracted condition. The arterial blood pressure falls. (3) The veins of the portal system and possibly other internal veins lose their tone. All the blood in the body collects in them and death follows.

Salicylate Poisoning in Children.—F. Longmead reports eight cases, two of which proved fatal. In the administration of large doses of sodium salicylate, symptoms of acid poisoning occasionally occur, suggesting those of diabetic coma, viz., drowsiness deepening into coma, with air hunger and finally death. The child is flushed, eyes are bright, and there is usually great thirst. Vomiting may precede the above symptoms, and the drowsiness may be replaced by or associated with delirium. In every instance in which it was looked for, acetone was found in the urine. In the more serious cases the characteristic sweet odor developed in the breath. No reaction was observed in the urine of patients taking salicylates who did not present poisonous symptoms. The author introduces the eight clinical histories with a table showing the variability of the dose of the drug sufficient to produce toxic symptoms, and presents the following conclusions: (1) Salicylate of sodium sometimes causes in children symptoms resembling the acid poisoning of diabetes. (2) The toxic dose is variable, depending on the idiosyncrasy of the patient and the presence or absence of constipation. (3) Acetone may be detected in the urine and in the breath, its presence constituting one of the first symptoms of the poisoning, and affording a valuable danger signal. (4) Treatment should be directed to keeping the acidity of the urine low and the bowels opened in cases of patients taking this drug. (5) If acetone is found or the urine gets more and more strongly acid, the salicylate should be omitted and alkali given alone.

The Nervous Phenomena Following Attempted Suicide by Hanging.—R. N. Hart reports the case of a man who attempted to hang himself and who was cut down after ten minutes' suspension by a large jack-towel. As he fell his head was knocked against the wall. In a few minutes he was seen by the author, who found him cyanosed, but breathing deeply and regularly at a normal rate. Pulse was 100, normal; pupils equal and pinpoint; he was unconscious, but there had been no escape of bladder or bowel contents. There was no evidence of skull fracture. For forty hours he remained unconscious, but four hours after the hanging his pupils dilated slightly, the right more than the left, both reacting to light. He gradually became quite stiff equally and simultaneously over his whole body, the reflexes being excessive and a marked ankle clonus being present on both sides; his plantar reflexes were both of the flexor type. He was then admitted to hospital, where his heart, lungs, and urine were found to be normal to physical examination; his pulse was 104 and his temperature was 99.4° F. He was still rigid, and his pupils were in the same condition; he had conjugate deviation of his eyes to the right, and exhibited for half an hour at a time on several occasions a rhythmical flexion and extension of his right forearm. During the night he had incontinence of feces and urine. On the next morning the patient was still unconscious but was not so rigid; his tendon reflexes were not exaggerated, but he still exhibited conjugate deviation of his eyes to the right. He did not begin to answer questions until forty hours after his being cut down, and then he did so stupidly, inaccurately, and slowly. His eyes were now normal and he had regained control of his excreta. He gradually got more lucid and was discharged from the hospital nine days after the accident. He stated that he remembered nothing of his attempt on his life, and thought that he had walked to the hospital with his wife, whereas he had in reality been brought by the police on a stretcher. Though depressed and at times somewhat troublesome, he suffered from no delusions nor hallucinations. Since his discharge he has been sent to an asylum as insane.

British Medical Journal, June 30, 1906.

Pulmonary Embolism.—G. Walker records a case which recovered. His patient was a woman who on the ninth day after her fourth confinement developed phlegmasia dolens. Some two months later, friction sounds developed at the base of the right lung, and she was removed in an ambulance to a neighboring hospital. She stood the journey well, but four days later she suddenly fell back on her pillow and became cyanotic, while the radial pulse disappeared and the pupils were widely dilated. Under strychnine injections (later ether and digitalis) and amyl nitrite inhalations and oxygen gas, she gradually rallied, but later developed phlegmasia in the other leg and pleurisy on the other side. She eventually recovered full health. Diet during acute period consisted of milk and puddings.

Achondroplasia.—A case of this rare affection is described by G. Rankin and E. C. Mackay, who give several photographs and skiagrams of their patient, a lad of nine years when coming under observation. They note that several writers have described the disease under the designation of congenital rachitis. The prominent differential characteristics of the malady are its congenital origin, an abnormally large vault to the cranium, depression of the root of the nose, prognathism, arrested development of the long bones of the extremities, with exaggeration of their normal curves, beaded ribs and enlargement at the ends of the long bones from diaphyseal and epiphyseal changes, decentralization of the mid-point of the body, which is invariably and persistently above and not below the navel, characteristic appearance of the hands (Marie's main-en-trident), excess of adipose tissue, protuberant abdomen, lordosis, smooth, pliable skin, with abundance of glossy hair in all the ordinary situations, a normal mentality, and finally a tendency to other malformations, especially high-arched palate and inguinal hernia. The only conditions with which the disease is liable to be confounded are rachitis and cretinism. Three types of the disease are distinguished: (1) Chondrodystrophia fetalis hypoplastica, in which the epiphysis is normal in size and consistency; there is inhibition of bone formation and also inhibition of proliferation of cartilage cells. (2) Chondrodystrophia fetalis hyperplastica, in which the epiphysis is definitely enlarged and the consistency is variable; there is inhibition of bone formation and increased proliferation of cartilage cells. (3) Chondrodystrophia fetalis malacica, in which the cartilage is softened; there is inhibition of bone formation and the intercellular substance is gelatinous and very vascular. A bibliography is appended.

Berliner klinische Wochenschrift, June 25, 1906.

Two Cases of Spinal Tumor Cured by Operation.—Oppenheim and Borchardt describe these two cases, the diagnosis being made by the former and the operation performed by the latter. One patient was a woman of thirty-three years, with a meningeal tumor at the level of the seventh cervical segment, and the other was a man of forty-nine years, who presented symptoms leading to the diagnosis of a spinal tumor, probably meningeal, at the level of the fifth dorsal vertebra. In each case the diagnosis was confirmed at the operation, which was followed by the relief of almost all the symptoms presented by both patients. Borchardt, in discussing the operations, says that he prefers to perform laminectomy at one sitting rather than in two stages, as has been recommended by some authors, and he states that in his cases, which are now three in number, he has not

been troubled either by undue hemorrhage or escape of cerebrospinal fluid. He also considers that the osteoplastic method of operating is inferior to simple laminectomy, owing to the more complicated nature of the wound it produces. Patients who have been subjected to this operation undergo several risks which are peculiar to this class of cases. One is that of secondary infection, which is very great, owing to the fact that the patients nearly always suffer from incontinence of urine and feces. The danger of the formation of bed sores is also grave, and finally, cystitis may be a very troublesome complication. The technique of the operation and the growths removed are described and illustrated in detail.

Leukemia without Leukemic Blood.—Ewald describes this anomalous case of anemia, which does not appear to fit into the ordinary category of blood diseases. The patient was a man of thirty-seven years, who died after an illness of about six weeks, of which the most prominent symptoms were emaciation, general prostration, and fever. The examination showed 740,500 erythrocytes, and 800 leucocytes to the cubic millimeter; the differential count was as follows: Polynuclears, 71 per cent.; large lymphocytes, 2 per cent.; small lymphocytes, 21 per cent.; myelocytes, 3 per cent.; transitionals, 3 per cent. At the autopsy there were found enlargement of the spleen, jellylike consistency of the bone marrow, which was pink in color, fatty degeneration and dilatation of the heart, submucous hemorrhages in the kidneys and spleen, consolidation of the left lower lobe, adherent pericarditis with adhesions, and lymphoid infiltration of the liver and kidneys. The pathologist made the diagnosis of leukemia with a question mark, and the author details the arguments for and against this view, leaving the question open.

Münchener medizinische Wochenschrift, July 26, 1906.

The Action of Coffee and Cocoa on Gastric Secretion.—Pincussohn studied this question in dogs that had been subjected to Pawlow's operation, by means of which a small portion of the fundus of the stomach is isolated in such a way that its secretion can be collected through a cannula. Such a dog was given water, milk, coffee, tea, and cocoa in different combinations, in order to determine the effect on the secretion of gastric juice. It was found that coffee produced a very prompt increase in the amount and acidity of the gastric juice secreted, the stimulation being of short duration, however. A malt substitute for coffee exhibited the same property, though to a somewhat less marked degree. Tea had a distinctly inhibiting effect. The action of cocoa appeared to depend largely on the amount of fat contained in it. A sample from which most of the cocoa butter had been removed stimulated gastric secretion to about the same degree as the coffee, but a specimen containing a large proportion of fat caused only a very moderate increase, the effect of the fat being strongly inhibitory.

The Use of Opium in the Laryngeal Stenosis of Children.—Hecht considers that this mode of treatment for laryngeal stenosis in diphtheria, which was advocated by Stern in 1894, has not received the recognition it deserves. In cases in which hoarseness, barking cough, stridor, cyanosis, and retraction of the chest indicate incipient obstruction, the necessity for a subsequent tracheotomy may be averted by the use of opium. The explanation of the action of the drug under these conditions is to be found in the inhibition afforded to the coughing impulse, so that sudden congestion in the affected areas is avoided, and there is lessening of the tendency to edematous swelling of the air passages. This applies, of course, only to cases in which the obstruction is not due to membrane formation; and the treatment is not intended to replace the use of antitoxin, but only to serve as an adjuvant to this.

The Treatment of Tuberculosis with Tuberculin.—Krüger has obtained very satisfactory results in the treatment of tuberculosis by means of the injection of very small doses of the tuberculin preparation called "new tuberculin." His cases were twenty-six in number, and of these all but five were in the early stages. Of these five, three were so much benefited that they have been able to work during the past eighteen months to two years. In two cases no direct improvement followed, one patient died of acute phthisis after having gone through intercurrent attacks of scarlatina and of gonorrheal peritonitis. Another patient has been lost track of, so that of the twenty-one incipient cases, nineteen patients have remained well for from two to three years. The initial dose is 0.002 g. of the remedy, injected every other day, and the amount is rapidly increased until at the end of three or four weeks from 0.1 to 0.5 g. is being given. The injections are then made only once or twice a week, and finally at intervals of one or more weeks several doses of 1.0 g. each are administered. No disagreeable symptoms of any gravity are caused, and the author considers the method well worthy of trial in cases in which sanatorium treatment cannot be carried out.

Deutsche medizinische Wochenschrift, June 28, 1906.

Filtrate Aggressins.—Levy and Fornet say that Bail has stated that the aggressins are formed by bacteria not only in the animal body, but also—though more rarely—outside of the living organism. The authors believe that they have demonstrated the presence of aggressive properties in the sterile filtrate of twenty-four and forty-eight-hour bouillon cultures. They have already shown that the Chamberland filtrate of paratyphoid bacilli by itself is not toxic even in large quantities, but that when introduced together with living bacilli it causes the disease symptoms to be greatly increased in intensity and can make fatal doses that otherwise would not be dangerous. It was found, in dealing with the filtrate of typhoid cultures, that by using the ordinarily harmless dose of filtrate of 2 to 5 c.c. of a twenty-four-hour bouillon culture, the fatal dose of the bacilli was reduced from a tenth of a normal loop to a fiftieth of a loop. The filtrate itself was not toxic even in doses of 20 c.c., and control observations with sterile broth were negative. Experiments with leucocytes also showed that the filtrate contained bodies having properties inhibiting phagocytosis and acting in the same way as the aggressins of exudates.

The Spirochetes in the Organs of Syphilitic Infants.—Schlimpert has been able to discover the *Spirochæta pallida* in a number of organs and tissues of congenitally syphilitic infants where they have not previously been demonstrated. The material was obtained from five infants, two of which had lived. The author reaches the conclusion that the *Spirochæta pallida* is able to penetrate between the cells of intact cylindrical and pavement epithelium, and that all of the secretions and excretions of infants suffering from hereditary syphilis must be regarded as infectious as long as it has not been proven that the *Spirochæta pallida* has no etiological relationship to syphilis. Not only the sputum, the feces, the urine, and contents of the mouth, but also the liquor amnii therefore represent a source of danger to the obstetrician and to all other persons coming in contact with the infants. The tissues in which the author was able for the first time to demonstrate the organism are the stomach, mesentery and mesenteric lymph glands, gall-bladder, biliary duct, the peripheral nerves, the thyroid and thymus glands, the tonsils, the tongue, and the mucous membrane of the cheeks and pharynx.

The Production of Radiographs Giving the Effect of Plasticity.—Lewisohn says that at the last Roentgen Congress radiographs were presented, which excited much interest on account of their plastic effect, but to the surprise of all the exhibitor refused to make known the method of their production. Since then Schellenberg and Albers-Schoenberg have described procedures for obtaining this result, and the author suggests the following simplification of Schellenberg's process. A positive is made from the original negative and the two plates are fastened together with their film sides inward, but displaced laterally to a very slight degree, the exact extent of which must be determined by experiment. On inspecting this combination by transmitted light the effect of plasticity will be produced, but to secure prints it is necessary to make another positive in the enlarging camera, and from this positive to obtain a contact negative in the printing frame, from which negative prints may then be made in the usual way. By using this method the original negative is never in danger. The author considers that while the production of pictures of this sort is an interesting scientific diversion, it does not enhance the diagnostic possibilities of the Roentgen ray, as the effects produced are likely to be very misleading.

Syphilitic Aortitis.—Dieulafoy has had decided success in this affection by the use of daily injections of one centigram of biniodide of mercury in aqueous solution. After six or seven injections a notable improvement was shown in one case, which he describes. The writer says this method is the best with which he is acquainted. The dose may vary according to the case. From ten to twelve injections are made in one series, separated by fifteen days or a month of rest. For some years the writer has not prescribed the iodide of potassium.—*La Presse Médicale,*

Book Reviews.

Nature and Health, a Popular Treatise on the Hygiene of the Person and the Home. By Edward Curtis, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, Columbia University, New York. New York: Henry Holt & Co., 1906.

It is a hopeful sign of the tendency of the times that works on popular hygiene multiply apace. Prevention goes ahead of cure, and sweet as are the joys of convalescence, sweeter far is the serenity that accompanies a perfect functioning of all the bodily forces. Books on popular medicine are of doubtful utility, but popular treatises on hygience are, when as well written as the one before us, of service to mankind. To be of service, however, they must be readable—not mere don'ts and dos, nor dry physiological essays so technically phrased as not to be understandable of the people, but real health talks in simple language and with a literary flavor to tempt the reader to turn again and again to the instructive page. Such a book is the one before us. The author is a physician of ripe learning, a fluent writer, a poet, and the possessor of a charming literary style. The book, he says, was written out-of-doors, "committed to paper by the wayside, on knee or on the flat tops of fences." And so it reads—not sketchy or disjointed, but breezy and charged with the ozone of the fields and hills, breathing health and strength and life in every page. It can be read as a story is read, and the reader, in his reading, while tasting the pleasure of communion with the mind of the writer, acquires therewith a knowledge of his casement of clay and how to care for it, which, if he but acts upon it, will give him length of days and happy days.

There are fifteen chapters in the book, entitled: Breathing, Eating, Drinking, Drugging for Delectation, Seeing, Hearing, Clothing, Bathing, Disposing of Waste, Disinfecting, Exercising the Body, Exercising the Mind, Sleeping and Waking, Working and Playing, Living and Dying. Each and every one of these chapters can be read and read again, but the one most needed perhaps is that quaintly styled, "Drugging for Delectation." This treats chiefly of alcohol, tobacco, and tea and coffee—all drugs, none necessary, yet none harmful to the average man when taken in moderation. The author treats of their use in a temperate way, pointing out how they may injure and how they may not. He knows that they will be taken by mankind to the end of time, and, knowing that, he does not inveigh against them, but shows how they may be indulged in without harm. Moderation is the keynote, not only of this chapter, but of the whole book.

The Physiology and Therapeutics of the Harrogate Waters, Baths and Climate Applied to the Treatment of Chronic Disease. By William Bain, M.D., (Durh.), M.R.C.P. (Lond.), and Wilfrid Edgecombe, M.D. (Lond.), F.R.C.S. (Eng.), London: Longmans, Green & Co., 1905.

Bain and Edgecombe present far more in this volume than the title shows, for they have written actually a treatise on mineral waters, baths, and climate with special reference to these remedial agents as they are offered at Harrogate, the famous English spa. The book is thoroughly modern in so far as the pharmacology of mineral waters is concerned, and the action of mineral solutions is discussed from the viewpoint of the modern theory of ionization, electrolysis, osmosis, etc. The scientific basis of climate and of baths is also adequately presented, while the concluding chapters deal with the various chronic diseases in which Harrogate has proved of benefit.

Unconscious Therapeutics; or the Personality of the Physician. By Alfred T. Schofield, M.D., M.R.C.S., Hon. Physician to the Friedenheim Hospital, Author of "The Unconscious Mind," "The Force of Mind," etc. Second edition. Philadelphia: P. Blakiston's Son & Co., 1906.

Psychotherapeutics is a branch of the healing art that has a scanty literature; and unfortunately some of what is published on this subject is of such a nature that it cannot appeal to educated and thoughtful readers. Unconscious therapeutics has been left too much in the hands of the quack and of his confrères. Hence, when a book such as the volume before us, written by a distinguished member of the profession, is presented to the medical practitioner, he should avail himself of the opportunity of reading it. The present volume is scholarly and readable; it is absolutely free from all taint of quackery, and may be said to be as ethical as the United States Pharmacopœia and infinitely more interesting. The topics discussed are: The mind in therapeutics, value and varieties of mental therapeutics, the vis medicatrix naturæ, the personality of the physician, other therapeutical influences, from a patient's point of view, the practice of unconscious therapeutics, the secret of success in practice, the action of unconscious therapeutics, and the study of unconscious therapeutics. Much that is given in these pages is not new in itself, but is presented in a new light; and there are few who will not find a perusal of this volume both instructive and entertaining.

Psychotherapeutische Briefe. Von Prof. H. Oppenheim, Berlin. Berlin: S. Karger, 1906.

Oppenheim's letters to "nervous" patients are full of suggestive points to physicians, as they are to laymen suffering from functional disorders of the nervous system. The style deserves to be imitated, and shows the author's wide experience with human failings, mental and physical.

Affectivität, Suggestibilität, Paranoia. Von E. Bleuler, o. Prof. der Psychiatrie in Zürich, Burghöltzli. Halle: Carl Marhold, 1906.

In this essay Bleuler seeks to define the psychological basis of paranoia. He analyzes emotionality and suggestibility as factors of this form of insanity, and concludes that paranoia has been wrongly regarded as an outcome of an abnormal emotional state. The feeling of mistrust, which has been classed as an emotional process cannot be regarded as such, for it does not come under the classification of either pleasure or pain. All abnormal emotionality in paranoia is an outcome of the delusions suffered by the patient. Nothing is known as yet as to the physical basis of paranoia, and thus we are not justified in regarding it as a separate disease.

Études sur le Traitement des Fractures des Membres. Notes recueillies et mises en ordre par les Docteurs J. Guilloux, L. Eissendeck, J. Fadherbe, A. David, L. Merveille, et Ad. Platel, et revues par le Professeur Fr. Guermonprez. Paris: J. Rousset, 1906.

This ponderous volume contains a collection of essays upon the treatment of fractures of the extremities as practised by F. Guermonprez of Lille. Some of these essays are written by Guermonprez himself, while others are from the pen of one or more of his pupils and collaborators. The particular forms of treatment to which most of these studies are devoted are massage, passive and active movements, gymnastics, mechanotherapy, hydrotherapy, electrotherapy, thermotherapy, etc. An enormous mass of data is here collected in the rather informal manner suggested by the title, and the volume is especially rich in historical and bibliographical data. The history of massage from the ancient Egyptians to the modern Swedes is given, for example in an exhaustive manner, and the same may be said of the history of gymnastics, which is a form of treatment older than Hippocrates.

Although nothing in the title or in the preface indicates this, the book, taken as a whole, is conceived in a polemic spirit,—as a defense against prejudiced critics of Guermonprez and his method. Guermonprez, it appears, is or was a teacher of surgery in the "free" or Catholic Faculty of Medicine of Lille, and the essays bristle with hostile allusions to the narrow-mindedness of the French government, the French universities, and the French medical societies. Illegal practitioners, bone setters, etc., are warmly defended, and their frequent superiority over the insufficiently trained "regulars" emphasized in many places, the argument being that the "regulars" were the last to recognize the value of mechanotherapy and the irrationality of permanent immobilization in fractures. Personal animosities are also ventilated in a number of places—as for example where the editor's controversy with the president of a medical society is given in full, the correspondence occupying a number of closely-printed pages, each writer accusing the other of ignorance and of prevarication, the bone of contention, literally speaking, being a fractured femur which was pronounced to be imperfectly reduced by Fr. Guermonprez. In the historical essays, which by far are the most valuable portions of the book, there is evidence of intense Chauvinism. We are told with much bravado that Déclat, and not Lister, was the introducer of carbolic acid as a surgical antiseptic, and that the Institute medal should have gone to Déclat, who was a maker of a set of proprietary medicines. Much more justified, however, is the patriotic claim that Amedée Bonnet (1838-1858) was the inventor of mechanotherapy, which we are accustomed to regard as the product of Zander's genius. Zander, we are told, was but thirteen years old when Bonnet described his first apparatus for mechanotherapy, in 1848. One of the most interesting of the polemics considered in detail is that famous struggle between the Ankylophiles and Ankylophobes, which raged in France in 1870-1880.

As a collection of data on the treatment of fractures the present volume will undoubtedly prove of great value to students of this subject, but the spirit in which it is conceived is far too personal to make the book a serviceable one for general reference.

Society Reports.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Second Annual Meeting, Held in Washington, D. C., May 16, 17, and 18, 1906.

(Special Report to the MEDICAL RECORD.)

GENERAL SESSION.

Thursday, May 17.

Duties, Responsibilities, and Opportunities of the National Association for the Study and Prevention of Tuberculosis.—Dr. LAWRENCE F. FLICK, Philadelphia, Vice-President, delivered an address on this subject. He outlined the fearful ravages of tuberculosis in this country, and said in regard to the work of the Association that great movements always had their beginning in a humble way; these humble movements became united and finally the world was engaged in a great crusade, and he believed the extermination of the great white plague was the world work of this generation. The secret had already been discovered by which this greatest enemy of mankind could be overcome; it had been presented to the world without compensation or return, and it but remained to take advantage of it. He said the great calamaties that had befallen the country from time to time, as the Chicago fire, the Johnstown flood, and the San Francisco earthquake had brought the world to its feet with offerings of assistance, and yet all these calamities combined were not so great as was the calamity of tuberculosis in our country every year; the loss of life in a single year from tuberculosis was fifty times greater than it was in all those calamities; the amount of suffering from tuberculosis for a single year was greater than was the total suffering in those calamities. He believed if the disastrous influence of tuberculosis upon any community was presented to the public in a concrete form in the manner in which the San Francisco earthquake was presented; if all the consumptives could be marshalled together and their suffering presented at a glance, the response for the amelioration of that suffering would be as great as we had just seen in California. He advocated the establishment of hospitals, sanatoria, convalescent farms, and public dispensaries where the poor could be treated. He deprecated the fact that the medical schools turned out so many physicians unacquainted with the best methods of combating the disease and hoped for improvement along this line. He recommended that the Association establish permanent headquarters in Washington and that its invitations to the associations of other countries should have the seal of the approval of the President of the United States Government. He also advocated the establishment of a Lecture Bureau, providing speakers to visit every part of the country and disseminate knowledge of how best to combat the disease.

Friday, May 18.

CLINICAL AND CLIMATOLOGICAL SECTION

DR. VINCENT Y. BOWDITCH OF BOSTON IN THE CHAIR.

The Scope and Aim of the State Sanatorium for Tuberculosis.—Dr. VINCENT Y. BOWDITCH of Boston, Chairman, delivered this address. He referred to the origin of the State sanatorium, and said that to Dr. Trudeau belonged the credit for having been the first in this country to demonstrate what could be done in the treatment of tuberculosis in the sanatorium. The chief idea was to secure absolutely fresh air all the time, and within the last decade these ideas had taken a great hold upon the people throughout the country. He believed that sanatoria should be built away from cities and maintained for the use of incipient cases; advanced cases should not be sent to such institutions, but rather to hospitals in the towns. Sanatoria for patients still in vigorous bodily health should not, he said, be so large as to render individual care impossible, for if proper supervision of the individual was diminished the chances of benefit were lessened. He thought we should aim to make the State sanatoria centers of scientific research.

Report of the Committee on Clinical Nomenclature.—Drs. V. Y. Bowditch of Boston, Lawrason Brown of Saranac Lake, W. H. Bergtold of Denver, Herbert Maxon King of Liberty, George W. Norris of Philadelphia, and John H. Pryor of Buffalo, constituting the Committee, made this report of which Turban's plan, which had already been adopted by the International Association in Europe, was the basis, the committee making some modifications and additions. The plan was unanimously adopted.

Therapeutic Use of Tuberculin Combined with Sanatorium Treatment of Tuberculosis.—Dr. EDWARD L. TRUDEAU of Saranac Lake read this paper. He said the wild enthusiasm that had at first greeted Koch's announcement in regard to tuberculin had soon been followed by denunciation of the proposed method of treatment. It came to be considered dangerous, but he had used it in a limited number of cases continuously since 1890 and he gave a summary of his results in these cases. His conclusion was that tuberculin should be used only in exceptional cases. On the other hand, as a method of revealing the presence of the disease, it was of great value. In spite of the outcry against it, it was based upon a proper idea. It produced no immunity that was lasting; that had only been done by the use of the attenuated bacilli. It had been impossible to reach any conclusion as to the relative value of the different tuberculins; the best was made from the most virulent germ and from the uncrushed bacilli. Dr. Trudeau said we were just on the border of a great field of research, and it remained as yet to be studied out. His method of administration was by minute and gradually increasing doses. If there was marked reaction the intervals between injections were lengthened or the doses diminished. He said in conclusion that he considered the work of Wright and Douglas on the "opsonic index" a most valuable contribution to the knowledge on the subject, but the technique required made it impracticable in treating a large number of cases.

Dr. LAWRASON BROWN of Saranac Lake said he believed that we were at the present time on the verge of a great revival of the tuberculin treatment, but all should constantly observe great moderation in expression and great care in dosage. Above all we should not forget the individualization of each patient, with careful attention to his personal susceptibility. His experience had led him to believe that in many patients there came a time of increased susceptibility when the patients reacted more readily even to doses which previously caused no reaction. Great care had to be exercised until this period was passed. In 70 patients treated with tuberculin no reaction occurred during the whole course of the treatment in 12; 1 reaction in 15; 2 in 13; 3 in 10; 4 in 7; and 5 to 11 reactions in 13. In other words, 50 per cent. of these 70 had 3 or less reactions during the course of their treatment until large doses were reached (over 100 mg. of the old tuberculin, or over 1 mg. of the emulsion).

Dr. E. R. BALDWIN of Saranac Lake thought Dr. Brown had well expressed the present status of tuberculin in saying that it was still in the experimental stage. There were certain things about the reaction that we could not yet be satisfied with; we did not yet know the limits of the reactions or how to explain them. Consequently he thought the use of tuberculin clinically was, as Dr. Brown had said, empirical. He explained that he did not mean by that that it should be limited entirely to people with laboratory experience necessarily, but that it evidently required a great deal of care in its administration. He said the essence of the treatment was the local reaction and the interpretation of that reaction was of prime importance. The local reaction, he said, was a congestion, and the explanation of this congestion was difficult. For himself, he thought it best explained on the enzyme theory, the secretion of some kind

of ferment that digested the toxins, or tended to digest them into simpler forms.

Dr. Arnold C. Klebs of Chicago said that in Europe they had begun using tuberculin to a very great extent again, and it was astonishing to realize how little it had been used here. He had been impressed with the point made by Dr. Trudeau as to the great caution necessary in its employment. Only a few years ago doses had been used that one would not think of employing now. We could not be certain of what was going on and it was difficult to control the effect of the injections. In some cases, he said, there had been no indication at all of a local reaction and he had thought that in such cases harm had been done. He had also been impressed with the fact that the various tuberculins were so very different in their reaction, and furthermore that the effect of the same tuberculin differed in one bottle from another, and he desired to give a word of warning as to the caution that was to be exercised in switching from one kind to another; this he thought was especially true of the emulsion preparations.

Dr. L. Rosenberg of Bedford Station, N. Y., said his results with the use of tuberculin during the past year had been about the same as those of Dr. Trudeau. He thought there had been some improvement in the results obtained, especially in the advanced cases; the best results had been obtained in the moderately advanced cases. He was somewhat skeptical as to the use of the test as a diagnosis of tuberculosis of the lungs, and thought the reaction only indicated that somewhere in the body there was tuberculosis, without showing that it was in the lungs. He employed only the old tuberculin, in vials, and made his own dilution from that.

Dr. S. von Ruck of Asheville, N. C., had been working with an extract of the bacilli themselves, and had found that the agglutinins increased during treatment often 300 to 400 per cent. When the patients failed to come up in nutrition and the progress was unsatisfactory it was noticed that the agglutinins failed to increase. While no hard-and-fast conclusions could be drawn concerning the value of this indication, he felt that they were working along a promising line.

Dr. M. P. Ravenel of Philadelphia said that in regard to the agglutinin test Landis and himself had carried out some experiments along this line and had concluded that it was not delicate enough to be of value. He did not think Dr. Baldwin's theory as to the cause of the reaction a plausible one, as the healing of the lesions was rather in the nature of a fibrosis. In regard to the use of tuberculin in general he said the whole question came back to that of the bacillus; we did not know the toxins of that bacillus; with exactly the same media, grown in the same incubator, they would differ. This might have been due, he thought, to the use of a little more acid or alkali in washing the flasks, as the bacillus was very susceptible to these things. He thought all the preparations would differ, bottle from bottle, because there was no method of standardizing them.

Hematological Studies in Tuberculosis.—Dr. Arnold C. Klebs of Chicago read this paper, which was a detailed technical study of the blood in cases examined and treated in the Cooks County Hospital.

Review of the Work Upon the "Opsonic Index" (Wright and Douglas) in Tuberculosis.—Dr. Nathaniel Bowditch Potter of New York read this paper.

The Treatment of Tuberculous Laryngitis with the Watery Extract of Tubercle Bacilli, with Remarks upon the Action of Specific Medication in the Treatment of Tuberculosis.—Dr. F. M. Pottenger of Los Angeles, Cal., read this paper. He said that this disease rarely occurred unless the lungs were affected, and its diagnosis was a matter of experience and skill in laryngology. The prognosis had always been considered grave, especially by the laryngologists. The writer reported in detail the treatment of fifteen cases, and made a plea for the routine examination of the larynx in all cases of pulmonary tuberculosis. Indications in treatment were, first, to increase the resisting power; second, to prevent spread; third, to heal the local lesion. He thought that as a remedy inoculation was the best. His experience with the tuberculin made from the bovine bacilli had been promising. He had used for the most part the watery extract of the tubercle bacilli, and one thing it did was to keep the condition from spreading. He considered the larynx an ideal location for the use of tuberculin, because the reaction could be watched daily.

Dr. S. von Ruck of Asheville, N. C., called attention to the difference between tuberculin and the watery extract of the tubercle bacillus, the latter being a watery extract of a protoplasmic substance obtained from the bacillus without the application of heat. He said that since he had been making routine examinations of the larynx he had found a much greater percentage of lesions than formerly. With the use of the extract he had found that these showed local reactions, which were never severe and which subsided in a short time, ordinarily without having produced any subjective symptoms. He thought if laryngologists would recognize these facts more generally they would be able to make a greater number of early diagnoses. He had resorted to operative procedure in only 1 per cent. of cases, and that for relief of dyspnea caused by obstruction in the glottis by infiltration.

Use and Abuse of Pulmonary Gymnastics.—Dr. Charles L. Minor of Asheville read this paper.

Dr. Edward O. Otis of Boston said that what was needed along this line was a series of observations and comparisons made upon patients representing as nearly as possible the same general and local conditions. At the Massachusetts State Sanatorium for Tuberculosis such a series of observations had been made. Thirty-seven patients in the quiescent stage of the disease, with no fever, who had been gaining in weight, had more or less cough and bacillary sputum in nearly every instance, were taken in periods of two weeks each. In the first period they were told to refrain from deep breathing, and in the second period they were encouraged to breathe deeply, and four times a day to practise forced respiration. The periods were too short to permit anything but a very general inference. In no case was any ill effect observed during the deep breathing period, nor was the favorable course of the disease prejudiced. The exacerbations occurred during the shallow breathing period, probably only a coincidence. All expressed themselves as feeling better while practising deep breathing. Dr. Crane reported the results in forty-three cases, in which class gymnastics were given for a much longer time and then omitted for some months. No material difference in the condition of the patients or the progress of the disease was observed during the two periods, but the patients generally described themselves as feeling better and eating better during the exercise period. In these cases no ill results were noted.

Dr. Norman Bridge of Los Angeles, Cal., emphasized the fact that pulmonary gymnastics should be administered and prescribed with great caution in pulmonary tuberculosis, and with care that certain and numerous conditions were excluded in which harm might be done. Exercises should be had which would not raise the temperature of the patient, and it was especially desirable that those patients who were below par should have exercise so far as was possible. Much harm was done by fads in breathing exercises and the exploitation of the notion that we had been breathing wrong throughout all ages. When a patient was exercising he would invariably breathe correctly.

Dr. Herbert Maxon King of Liberty, N. Y., said that formerly he carried out systematically the three sets of gymnastics as advocated by Dr. Knopf; but after two years' experience in sanatorium work, he confessed that he could not find that results were of value; could not say positively that pulmonary gymnastics did any harm,

nor could he say that they did good. He preferred to be on the safe side and advised rest for his patients.

Dr. F. I. Knight of Boston said that years ago he allowed his tuberculous patients, during the early stages, to take a great deal of respiratory exercise and deep breathing, but he gradually gave up this practice, for he believed the patients did as well without that exercise as with it.

Dr. John H. Pryor of Buffalo said that it made a great deal of difference whether the subjects were in the incipient or advanced stages. At the New York State Hospital for Incipient Tuberculosis, a form of gymnastics and deep breathing had been carried out since its opening; the patients were given these deep breathing exercises twice a day and no evil results had followed in a single instance. When these patients were sent home they were not soft and flabby, but were in good condition and able at once to go to work.

Dr. S. A. Knopf of New York believed that breathing exercises were both a prophylactic and therapeutic means of value. If the patients were much depressed, let them take breathing exercises and more blood would be furnished the brain, the anemia there would be lessened, and the patients become more cheerful. These exercises were taught the patients at the hospital on North Brother's Island, the forcibly detained cases, old chronic cases, and many of them alcoholics; all looked forward to the time for breathing exercises. So far he had never seen any ill effects.

Dr. Veto of Boston said that a source of error in this discussion was that no distinction was made between pulmonary gymnastics complicated and uncomplicated by general exercises. Even standing or sitting was a general exercise. Therefore an exact pulmonary exercise should be confined to expansion of the lungs in the supine position, with the body entirely at rest. The second source of error was the psychic one; autosuggestion in a community would be of value not only in tuberculosis, but in other conditions of impaired health.

Diet in Tuberculosis.—Dr. Herbert Maxon King of Liberty read this paper. (See page 88.)

Statistics of Diet in Sanatoria for Consumptives.—Dr. Irving Fisher of New Haven read this paper. He presented statistics of diet obtained from institutions in this country and abroad, and in which every possible article of diet could be found. There were 65 tabulations, and in 28 of these institutions forced feeding was approved. The various diets ranged from 2,100 to 5,500 calories, making a very wide range. Dr. Fisher thought that about 3,000 calories should be sufficient for the tuberculous patient.

Dr. Fisher also demonstrated a new method of indicating food values, practically a review of what had appeared in the *American Journal of Physiology* for April 2, 1906.

Dr. Henry P. Loomis of New York said that he agreed with Dr. King that "the diet question in tuberculosis was certainly more than a question of calories, and it could not be decided merely by arriving at the theoretical standard of the amount and relation of proteid fats and carbohydrates." The kind of feeding that would accomplish results in one individual would absolutely fail in another with apparently the same pulmonary involvement and constitutional traits. Since he had adopted the plan of treating all acute cases of tuberculosis with high temperature and markedly destructive lesions exactly as he should a case of typhoid fever with feeding milk almost exclusively every two hours, and often small doses of whiskey in the milk, he had been surprised how quickly the character of the case changed. Milk was the one food that could be absorbed without disturbance under these conditions. It was his belief that we would encounter very few cases of phthisis which were not benefited at some period of their course by the discreet administration of alcohol. It was in the third stage that alcohol appeared to do the most good when taken in small quantities and repeated at regular intervals.

The importance of facts was evident. Cod liver oil was most easily assimilated. In many persons cream produced dyspeptic symptoms, which might be obviated by taking it with a little maraschino, or chartreuse, or mixed with aërated water. He thought that milk, meat, and fat were the most valuable articles of diet we had in treating tuberculosis at home. He did not think that consumptives in our large cities could take raw eggs in large quantities for any length of time without causing digestive disturbances. The plan seemed to be successful with patients living an outdoor life. He gave the following general rules in feeding: 1. Food should be taken at least six times in twenty-four hours; light repasts between the meals and on tiring. 2. One should never eat when suffering from bodily or mental fatigue or nervous excitement. 3. A nap should be taken, or the patient should at least lie down for twenty minutes before the midday and evening meals. 4. Only a small amount of fluid should be taken with the meals. 5. The starches and sugars should be avoided, as also indigestible articles of diet. 6. As far as possible each meal should consist of articles requiring about the same time to digest. 7. Only as much should be eaten as could be easily and fully digested in the time allowed. 8. As long as possible systematic exercise should be taken; when this was impossible massage or passive exercise should be given. 9. The food should be made inviting in every way.

Dr. John W. Brannan of New York said that Dr. Knopf had requested him to give the diet used at Sea Breeze. This was as follows: Breakfast: boiled rice with milk and sugar, two helpings; minced beef with potatoes, one or two helpings; bread and butter, two to four, or even five slices; one or two glasses of milk. Dinner: Stew made from fresh beef and lamb, with carrots, onions, and tomatoes; mashed potatoes; bread and butter, two or three slices; milk, one or two glasses; tapioca pudding. Supper: One egg; buttered toast, two to five slices; stewed peaches; milk as at breakfast. In addition the children had a light luncheon at 10 o'clock and at 3 consisting of bread and butter or crackers and milk. The fact that these children were out doors so much gave them good appetites. The children weighed from thirty to forty pounds, and this gave them about 125 calories per kilo, which was far above what was considered essential in the sanatorium. No alcohol was given, though in France and England beer was allowed.

Dr. Sherman G. Bonney of Denver wished to call attention to the dangers of patients selecting their food without the supervision of a physician. He had found that the average period of delay following the recognition of the disease and the time of arrival in Colorado was about twenty and one-half months. He found that 70 per cent. of these cases arrived with trouble in both lungs, and 54 per cent. had evidences of severe constitutional disturbances, presenting all the evidences of severe septic infection. His first proposition was that the patient should take an extraordinary amount of food daily, all that it was possible to administer within the limits of digestion and assimilation—not what the patient desired or was willing to take, but all that the physician and nurse were able to persuade him to ingest. The tastes, desires, and inclinations of the patient should be considered in the manner of cooking and serving food. Digestive disturbances should be recognized and obviated. The degree of success often depended upon the personal influence of the nurse. A systematic endeavor was made to determine the limit of tolerance for each individual to compel him at any cost to consume the full quantity of food. It had been his practice to administer from two to four ounces of beef juice immediately upon awakening in the morning. This was repeated in the middle of the forenoon, afternoon, and evening, and constituted the only nourishment permitted between meals. He had found that large amounts of food in the shape of raw eggs and cream taken between meals

destroyed the subsequent appetite to a certain extent. This might be obviated by taking the eggs and cream immediately after a meal. Such nourishment could not be taken as a substitute for even a portion of the regular food. It was surprising how many raw eggs an invalid could swallow, even after having taken all the food that seemed possible. Following the eggs a half glass of cream was taken. Emulsions of easily digested fats were often taken a half hour after each meal. In desperate cases nutritive enemata, consisting of beef juice, a beaten egg, and peptonized milk were resorted to. Alcohol was permitted sparingly.

Dr. Irving Fisher of New Haven said he should like to see a trial made of leaving patients to their own devices, after ridding them of the many food notions.

A Suggestion on the Treatment of Hemoptysis.—Dr. Lawrason Brown of Saranac Lake read this paper. His experiments were made upon patients with hemoptysis, taking the blood pressure every two hours, amyl nitrate being used, and morphine for the nervous symptoms. Hemoptysis occurred during the early morning hours as a rule. Dilatation of the peripheral blood-vessels occurred during sleep. In order to equalize the blood pressure sodium nitrate was administered. He hoped that others would try this method to establish its value or to prove its worthlessness.

Manifestations of Syphilis in Connection with Tuberculosis.—Dr. John H. Pryor of Buffalo read this paper. (See page 93.)

Dr. F. I. Knight of Boston said that what he had seen of this combination made him believe that the manifestations of syphilis were not aggravated to any marked degree by tuberculosis, nor were those of tuberculosis aggravated to any marked degree by syphilis. In either case the course might be a long one. The differential diagnosis between tuberculosis and syphilis, particularly of the upper air passages and larynx, was quite easy.

Dr. Dunham said that at Rutland, Mass., they had quite a number of cases in which the two diseases were associated. He had seen a case recently of an ulcer of the tongue, both syphilis and tuberculosis being present. The ulceration cleared up under the administration of the iodides. Patients in whom syphilis was associated with tuberculosis were separated and kept apart from the others.

Dr. Pryor said the diagnosis had been made by the lesions having a different appearance from those of tuberculosis. His idea was that his paper should be largely suggestive. Recently there had been an attempt on the part of some to claim that the two diseases did not exist together. One disease might retard the progress of the other; but exactly what influence one disease had upon the other he did not know.

The Relative Value of Home Treatment of Tuberculosis.—Dr. Lawrence F. Flick of Philadelphia read this paper. He said that by home treatment of tuberculosis he meant treatment of the disease in the home country of the patient, in the climate in which the disease was contracted. It might be in a hotel, boarding-house, sanatorium, or home of the patient. Autopsy records in different parts of the world showed that under the most conservative interpretation 50 per cent. of all people born get an implantation of tuberculosis. As the percentage of people dying from tuberculosis varied from 10 to 25 it was evident that the difference in percentage represented those who either recovered or died from some other disease. In order to recover, the tuberculous subject must eat well, digest well, oxidize well, eliminate well, and sleep well. Whatever interfered with any of these functions inhibited recovery. Homesickness interfered with some, if not all, of these functions for a shorter or longer period. Besides homesickness we had to reckon with fatigue of travel, life in a boarding-house or hotel, and the difficulties of acclimatization as interferences with normal physiological action. Expense was also an item which needed to be carefully weighed in the treatment of tuberculosis, as it might be the ultimate determining factor in recovery. Formerly health resorts had a number of physicians who themselves had gone through an experience with tuberculosis and were able to give better advice than those who had had no such experience. There was in those times no scientific treatment of tuberculosis. Now, with definite knowledge based upon scientific principles, knowledge of the treatment could be given to anyone who had the intelligence to receive it and was willing to acquire it, and men might be as well equipped to treat the disease in the home as in the resort. In many ways the home physician, at least in large cities, might be better equipped because he had better opportunities for qualifying himself to make an early diagnosis, and successful treatment depended much upon early diagnosis. He unhesitatingly affirmed that the modern treatment of tuberculosis could be efficiently administered, irrespective of climate. Men from all parts of the world who had had experience in home treatment of tuberculosis were unanimous upon this subject. A most striking illustration of the value of scientific treatment and complete control as compared with climatic influence had been brought out by the successful treatment of some cases at Phipps Institute which had failed at the White Haven Sanatorium, although the two institutions were under the same medical directors and the same medical staff. The only difference in the medical administration was that one was in the city, where the visiting physician had absolute control and where the most arbitrary discipline was in vogue, while at the institution the visiting physician went only once in two weeks and greater latitude was given the patients. He said that he had no desire to prejudice health resorts or to belittle what had been done by men in those places. When expert services could not be had it was undoubtedly better to go to a health resort than to remain at home.

Dr. S. A. Knopf of New York said he would formulate the maxims which had guided him in directing patients what climate to choose in order to hasten cure. (1) To deny the beneficial influence of certain climatic regions in the treatment of tuberculosis was as dangerous and unscientific as the belief in the specific curative quality of any particular climate. (2) A change of climate, not necessarily a marked one, was nearly always good excepting in the very latter stages of the disease. A change from an unfavorable to a favorable climate, or from a good to a better one was preferable, though when a patient had contracted tuberculosis in a favorable climate a change to even a less favorable one might accomplish much good. (3) The native locality of the tuberculous patient should be taken into consideration in making a change. Those from northern climates usually did better in such climates as Colorado, the Adirondacks, Sullivan and Orange counties of New York. Patients from Italy and our Americans from warmer zones did better in such climates as southern California, New Mexico, Arizona, South Carolina, Virginia, etc. (4) There were exceptions to this rule, and one should be guided in a large measure by the patient's personal experience. (5) Idiosyncrasies existed in regard to climatic and aerotherapeutic treatment as they existed in other forms of therapeutics; these idiosyncrasies could only be learned by experience. (6) High (above 3,000 feet), moderately high (1,500-3,000), and low altitudes, hot and cold regions, seacoast, and ocean climates, extreme dryness and moisture had all proven advantageous in numbers of cases. (7) The value of any climate could not be determined unless the patient lived under careful medical guidance in a sanatorium or private home and followed the best hygienic and dietetic treatment. (8) Laryngeal cases in the earlier stages were often benefited by a moderately high altitude; a weak or diseased heart offered a contraindication to a high altitude. Early hemorrhage need not be considered in determining the choice of climate. In these cases long journeys should be made with frequent rests and high altitudes approached gradually. Cases with bronchial symptoms, weak hearts, and evidences of mixed

infection did well at the seacoast for the greater part of the year. Prolonged ocean voyages might be beneficial under favorable circumstances and where there was no seasickness. (9) The ideal climate was one where the extremes of temperature were not great, with the purest atmosphere, relatively little humidity, much sunshine, and all conditions which permitted the patient to live comfortably out of doors. For tuberculosis of the bones and joints the seacoast climates in our temperate zones came nearer deserving the term "specific" than anything else. (10) In the choice of a locality the following points should be taken into account. These were: (*a*) If the patient wished to return home or not; when great climatic changes had been made a return often resulted in relapse. (*b*) If the patient was married or single, young or old, willing or unwilling to leave; mental depression retarded recovery and aggravated pathological conditions. (*c*) If the patient was sanguine and cheerful, he usually did well even at a long distance from home. (*d*) For the morose and hypochondriac patient isolation often produced the same result as nostalgia. (*e*) It was cruel to remove a patient in an advanced and evidently hopeless stage from his home; slight climatic changes with short distances to travel were often beneficial in such cases. (*f*) The patient's financial condition had to be considered. (11) When the home climate had to be chosen we should take into consideration the following: The patient would do better in the outskirts of a city than in the city, better in the higher parts of the locality, better in a clear or relatively clear and dustless atmosphere, better in a pure or smokeless locality than in one having smoke and odors, better where there were few houses and few people than where there were many. (12) The majority of consumptives were recruited from the laboring classes, and we should have to consider where they would have to live after their restoration to health.

Dr. Sherman G. Bonney of Denver, Col., thought it fortunate that the authors of the papers on climate had been residents of climates usually regarded as unfavorable. He congratulated Dr. Flick upon the results that he had obtained, although greatly handicapped by climatic conditions.

Dr. C. F. McGahan of Aiken, S. C., said that he had been in health resorts all of his professional life, and it was rare to meet with more homesickness than was ordinarily encountered. Freedom from the cares of home usually did much good. At the health resorts there were usually a large percentage of bad cases. The cases were usually kept at home until they were bad, and that was the reason why so large a percentage of cases did not recover at the health resorts. Dr. McGahan said that at Aiken they had had thirty clear days last March. That enabled the tuberculous patients to be out of doors for thirty days of that month, a thing impossible to do in Northern climates at that time of the year. Any patient who went to a health resort should be under medical advice. Patients often fared worse at health resorts than at home, because they were free from home restraints, and were not told to do thus and so. The patient should be told not only how much to eat but how far to walk.

Dr. T. D. Coleman of Augusta, Ga., said there were two distinct types of cases to be considered in this discussion. First, the pauper patients, many of whom live a life of dissipation. If one took them and fed them up and made them live regular hygienic lives, it was evident they were going to gain. Secondly, those who had been accustomed to have better things, and their mode of life was not radically changed by a simple change of climate. He had always considered tuberculosis like any other infection; the ravages it produced depended upon the virulence and amount of infection and the resistance of the patient. If one had tuberculosis and the means to go to a more favorable climate one would not go to New York, Philadelphia, or Chicago and expect to be benefited.

Dr. Thomas Darlington, Health Commissioner of New York City, said there was probably more in climate than many people realized. The New York Board of Health had given this consideration in dealing with the poor class of patients. If one could get fresh air and rest without change of climate one could get wonderful results. This did not mean that we should not add climate. The place where one could get more and better sunshiny days, away from the noisy city, away from the east winds, etc., was what we wanted, and it did make a difference. The poorer class of patients would improve and grow quite stout almost anywhere if they had plenty of food.

Dr. F. I. Knight of Boston said that in his own practice either in the sanatorium or at home he never made a suggestion of change of climate unless the patient was able to afford it. He thought that patients who submitted to the proper treatment at home were more likely to be depressed than those away from home. They were fearfully depressed if they had ahead of them a second winter of outdoor treatment in New England. Some of his patients had returned home and had not done well, but he doubted if any such patient had ever recovered when remaining in the home climate. All were agreed on the subject of not sending away advanced cases.

What May be Accomplished in Apparently Hopeless Cases of Pulmonary Tuberculosis.—Dr. Sherman G. Bonney of Denver read this paper.

(*To be continued.*)

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906.

(Special Report to the Medical Record.)

(*Continued from page 38.*)

SECTION ON DISEASES OF CHILDREN.

Second Day—Wednesday, June 6.

The Use of Sodium Citrate as a Modifier of Cow's Milk from a Chemical and Physical Point of View.—Dr. Joseph W. England of Philadelphia read this paper referring to the first recommendation by Wright in 1893 of sodium citrate for the treatment of proteid-indigestion and the vomiting of chronic gastric catarrh. The writer had made a series of experiments with milk and various reagents, and presented a score or more of specimens of different combinations. His conclusions were expressed in the opinion that sodium citrate, which was a neutral salt, had no decomposing action upon calcium casein in the cold, but that it did exert an important physical influence upon the casein of milk; that when the citrated milk was brought in contact with the gastric juice, the sodium citrate was decomposed into sodium chloride and free citric acid, and that sodium chloride had important physical, chemical, and therapeutic properties, in the digestion of the proteids of cow's milk, more important probably than had been hitherto believed.

Diagnosis of Tuberculosis in Infants and Children.—Dr. Edward E. Graham of Philadelphia, in a paper with this title, stated that about 8 per cent. of all children who died showed at autopsy evidences of tuberculosis; that tuberculosis was common in children over four months of age; that congenital tuberculosis was rare, and that of the number of cases reported of children who died of tuberculosis before the fourth month many were probably congenital. In probably 90 per cent. of cases infection took place through the respiratory tract. Dr. Graham described a chronic, a subacute, and an acute form of pulmonary tuberculosis in infancy and childhood. The difficulties in making a positive diagnosis of tuberculosis were also pointed out. The possibility of infection should be considered and the hygienic surroundings. Inoculation experiments of glandular substance were often of aid in a differential diagnosis, and in the more chronic types of the disease might decide the tuberculous nature of the illness. In a doubtful case presenting skin eruptions the tubercle bacillus, he said, had been recovered from the

eruption as in a case recently reported by Dr. Irving Snow of Buffalo. Examination of the fluid removed by lumbar puncture he considered of aid in diagnosis. Tuberculin he had used very little; the presence of an irregular fever frequently seen in young children, in his opinion, rendered its use of doubtful value in many cases. Leucocytosis was usually absent unless there was mixed infection. The occurrence of digestive leucocytosis must be taken into consideration in this connection. Blood cultures were often of value in differentiating tuberculosis from pneumonia or typhoid fever by showing the presence of the pneumococcus or the typhoid bacillus. Chlorosis was mentioned as often presenting a picture resembling closely tuberculosis of the lungs and lymphatics. Dr. Graham did not wish to imply that the diagnosis of tuberculosis was as a rule difficult in the advanced stages; but in those cases in which the symptoms were vague and indefinite the diagnosis was often obscure. In such cases the writer was often asked to decide upon the presence or absence of tuberculosis and it was hoped that the discussion would throw light upon this differential diagnosis.

Dr. Arthur W. Fairbanks of Boston referred to a point in the differential diagnosis of typhoid fever and tuberculosis in the adult which he thought applied also to the child, *i.e.* the difference in the relation between the pulse and temperature in the two diseases. In tuberculosis the pulse was disproportionately rapid as compared with the temperature; with the temperature running from 100° to 101° the pulse would be 125 to 150 in the adult. This was still more the case in the child. In typhoid conditions exactly the opposite was true. Dr. Morse had also told him of his observation of this occurrence in a large number of cases in children.

Dr. C. G. Kerley of New York suggested that in the presence of a long indefinite temperature sometimes seen in children, if the child had had measles, that the ear be regarded as possibly the source of the temperature. Particularly in young children he had seen cases in which there was no symptom whatever of an otitis or mastoiditis other than a low indefinite fever.

Dr. T. J. Elteritch of Pittsburg said that in the Allegheny General Hospital in children suffering from any acute or chronic disease the ears were carefully examined by an expert, and that a surprisingly large number of children were found suffering from middle-ear infection, the diagnosis having been previously made of typhoid fever or other infectious conditions before entering the hospital.

Dr. William J. Butler of Chicago observed that the post-mortem diagnosis of tuberculosis in an infant did not necessarily indicate that the child had died of tuberculosis, such infants being far more likely to be the victims of a bronchopneumonia. He did not think that the relation of the temperature and pulse rate could be relied upon in the differential diagnosis of typhoid fever and tubeculosis or of bronchopneumonia, since it was a matter of general observation that the pulse rate and temperature in children did not conform to rules applying to the adult. Particularly confusing in the diagnosis of tuberculosis in infants was the decided disproportion between the clinical manifestations and the pulmonary signs; too frequently in advanced tuberculosis in infants and very young children the former were of a severe character and the local pulmonary findings consisted of a few dry râles.

The Open-Air Treatment of Pneumonia.—Dr. W. P. Northrup of New York read this paper. He said that for more than eleven years he had been treating pneumonia patients in cool, fresh air, gradually placing their beds nearer and nearer the open window. Last winter he put them out on the roof. His remarks upon the beneficial effects of open-air treatment were founded mainly upon last year's experience at the Presbyterian Hospital, where it was the systematic practice in all of the winter months to put all pneumonia cases for six hours of the day on the roof in the open air, in all weather except high, harsh winds, rain or snow. Some protection was provided against little rains and snowfalls. The plan of treatment had not been adopted without much observation and some self-education. Dr. Northrup did not underestimate drugs, but magnified the therapeutic value of hygienic measures, especially water and fresh air, believing that the two most important aids were plenty of water, inside and outside, and fresh air everywhere. The theory was illustrated with the case of a girl of three years admitted with lobar pneumonia. Measles was suspected and the child was temporarily isolated in a small room with a screen about the bed. The fever immediately rose, the child became delirious and dusky in the face, but upon being taken to the roof it fell into a quiet sleep. The cases most favorably affected by the open-air treatment were those with severe poisoning, delirium, partial cyanosis, or deep stupor. No cases of pneumonia had been injured and a few had been much aided. He had employed the treatment for many other infectious diseases including typhoid fever with severe bronchitis, whooping-cough with bronchitis and convulsions, and the results had been excellent. The only regulation was to make the patients comfortable, especially keeping their feet warm. The Presbyterian Hospital was so convinced of the value of the treatment for all infectious fevers that it had built a roof garden for the children's ward and was about to build a colossal roof garden on the main roof of the medical side of the hospital. In this open-air ward the fever patients would be kept so long as their fever was high. In good weather they occupied the open part of the ward; in bad weather they were moved into the more sheltered part.

Dr. Edwin E. Graham of Philadelphia narrated his experience in the open-air treatment in hospital service of 40 or 50 children under one year of age. He began by putting them out on the fire escape, bundled in blankets and the cribs covered with towels. Later he had dispensed with the towels over the cribs, having the children well blanketed and their heads covered with very warm caps. The results had been surprisingly gratifying.

An Analysis of Forty Cases of Meningitis in Infancy.—Dr. John Lovett Morse of Boston in this paper referred to his study of 20 cases of tuberculous and 20 cases of cerebrospinal meningitis at the Infants' Hospital. The diagnosis was made in every case either by autopsy or lumbar puncture. The onset was not infrequently sudden in the tuberculous cases and was often slow in the cerebrospinal. There was nothing characteristic about the temperature in either class. A slow pulse was unusual in both classes. The pulse was often irregular in both and there was always a terminal rise. A low respiratory rate was also very unusual. Stupor was common throughout the greater part of the disease in both types. Vomiting was very common in the cerebrospinal form. Constipation was present in about one-third of each class. Convulsions occurred in less than half of each class. Neck symptoms were rather more common in the cerebrospinal cases. Spasm and paralysis were not at all constant symptoms. Kernig's sign was often absent throughout the whole of the disease and was usually inconstant. Eye symptoms were not at all constant. The fontanelle bulged in most cases; it was level throughout the whole course of the disease in four of the tuberculous and in two of the cerebrospinal cases. The abdomen was usually sunken and muscular spasm was almost always absent. An eruption occurred in only one of the cerebrospinal cases. The duration was less than two weeks in twelve cases of the tuberculous form. Dr. Morse's conclusions were that the picture of meningitis in infancy was materially different from that of meningitis in childhood and from that given in most textbooks. The tuberculous form had a more sudden onset and a shorter course than in later life. The symptomatology of the tuberculous and cerebrospinal forms was essentially the same at this age, although the symptoms of spinal, and, to a less extent, of cerebral irritation, were, on the whole, more marked in the cerebrospinal. These differences, however, are insufficient to justify a differential diagnosis. The history or presence of a reasonable cause

for the tuberculous form pointed strongly to this disease, but such evidence was frequently entirely wanting. A positive diagnosis between the two forms was impossible on the symptomatology and could be made only by an examination of the cerebrospinal fluid obtained by lumbar puncture. Lumbar puncture, he stated, had no curative value in cerebrospinal meningitis, but was very useful for the relief of symptoms in both forms.

Dr. Arthur Fairbanks of Boston referred to two cases of tuberculous meningitis; to one, on account of the peculiar character of the onset; the other, because of the peculiar post-mortem condition. The onset in the first case, that of a girl of six years, was characterized by attacks of uncontrollable disobedience in a previously docile disposition. Temperature was about 101°. She resisted all attempts at examination until within eight days of her death when all resistance ceased. The second case had been admitted to the hospital because of otitis. Ataxia subsequently developed; dullness came over the child; the pulse dropped suddenly and the temperature steadily rose. Post-mortem examination showed the entire surface of the cerebellum covered with tubercles and section of the vermiform process revealed complete caseation.

Cerebral Syphilis in Children.—Dr. Arthur W. Fairbanks of Boston read this paper, which was based in part upon the study of somewhat over 100 cases of undoubted syphilitic cerebral disease in children from the literature. That the subject is deserving of a special chapter in pediatrics is evinced by the large number of instances of the affection to be found in the literature and by its unquestionable relation to other and very common affections in childhood not usually regarded as of septic nature. The onset of the phenomena produced by syphilitic lesions of the central nervous structure was multiform. The onset was, as a rule, subacute with the occasional occurrence of individual symptoms of very acute character and severe degree, the latter phenomena being characterized by their tendency to disappear after brief duration and to recur in some other portion of the body. Reference was made to the rapidity with which some cases yielded to treatment, while the reverse was true in others. The symptoms varied in character and degree, but at some one time some one class of symptoms rendered themselves conspicuous by special predominance. By a consideration of the nature of onset, progress and duration of the predominant phenomena some inference might be drawn as to the probable pathological type present in any given case. Changes in disposition and intellect were noted as frequent early symptoms in children; not always apparent in the history obtained from parents, however. While some symptoms might seem to occur without premonition, careful scrutiny of the child's life would reveal early evidence in insidious changes in the psychical nature of the child. Other symptoms mentioned were circulatory disorders—vertigo, disturbance of speech and vision and syncopal attacks. The diagnosis was considered in detail, as was also the prognosis.

Multiple Neuromata of the Skin.—Dr. William Edgar Darnall of Atlantic City read this paper, presenting three cases of this uncommon affection. The tumor was described as presenting itself in the form of multiple hard, spindle-shaped masses, varying from the size of a small pea to that of a walnut, distributed along the course of a single nerve, of all the nerves of an extremity, or even of the whole body. Originating from the connective tissue of the nerve sheaths the tumor usually contained within its substance a certain number of nerve fibres included by the tumor in the course of its development. Quotations were given from the various reports of cases. A case occurring in the author's own practice was described, as were two others, notes of which had been sent him by Dr. William G. Spiller of Philadelphia and by Dr. Harry A. Duncan, Pathologist to the Samaritan Hospital of Philadelphia.

(To be Continued.)

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending July 14, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	392	163
Diphtheria	224	36
Measles	293	15
Scarlet Fever	86	10
Smallpox	2	—
Varicella	31	—
Typhoid Fever	51	11
Whooping Cough	45	10
Cerebrospinal Meningitis	7	12
Malarial Fever	.....	.....
Totals	1,131	257

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending July 14, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Stockton	June 1–30	1	..
Florida, Jacksonville	June 23–July 7	2	..
Georgia, Augusta	June 25–July 9	6	..
Illinois, Galesburg	June 23–July 7	27	1
Louisiana, New Orleans	June 23–July 7	12	2
Maine, Houlton	July 6	1	..
Massachusetts, New Bedford	June 30–July 7	5	..
Missouri, St. Louis	June 30–July 7	3	..
Nebraska, Omaha	June 8–30	7	..
New York, New York City	June 23–30	3	.
Ohio, Cincinnati	June 29–July 6	1	..
Oklahoma, Oklahoma City	June 8–July 7	19	1
Tennessee, Knoxville	June 23–30	1	Imported
Memphis	June 23–July 7	5	..
Wisconsin, Appleton	June 23–30	1	..
La Crosse	June 23–30	2	..
Milwaukee	June 29–July 7	1	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	May 12–26	5	..

SMALLPOX—FOREIGN.

Africa, Cape Town	May 19–June 2	8	..
Brazil, Rio de Janeiro	May 27–June 10	1	..
Canada, Toronto	June 16–30	3	..
France, Paris	June 16–23	13	..
Gibraltar	June 10–24	5	1
Great Britain, Hull	June 16–23	1	..
London	June 16–23	7	..
India, Bombay	June 5–12	.	8
Calcutta	May 26–June 2	.	40
Karachi	June 3–10	10	3
Madras	June 2–8	..	2
Rangoon	May 26–June 2	..	12
Italy, General	June 14–21	14	..
Russia, Odessa	June 9–23	15	1
St. Petersburg	June 2–16	8	4
Spain, Barcelona	June 10–20	.	5
Seville	May 1–31	..	53

YELLOW FEVER.

Costa Rica, Limon	June 23	1	..

CHOLERA—INSULAR.

Philippine Islands, Manila	May 12–26	4	4
Provinces	May 12–26	39	28

CHOLERA—FOREIGN.

India, Bombay	June 5–12	..	21
Calcutta	May 26–June 2	..	41
Madras	June 2–8	.	2
Rangoon	May 26–June 2	.	2

PLAGUE.

Brazil, Rio de Janeiro	May 27–June 3	1	1
Egypt, Alexandria	June 15–21	2	2
Beni Souef Province	June 18	1	
Garbeih	June 16	1	1
India, General	May 12–19	13061	11,783
	May 26–June 2	7,888	7027
Bombay	June 5–12	.	106
Calcutta	May 26–June 2		57
Karachi	June 3–10	69	63
Rangoon	May 26–June 2	..	53
Peru, General	June 9	4	..
Lima	June 2–9	1	.

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Original Articles.

HEALTH OF SCHOOL CHILDREN.*

A STATEMENT OF THE ENDEAVORS OF THE BOARD OF EDUCATION TO CONSERVE THE HEALTH OF CHILDREN UNDER ITS CARE.

By LUTHER HALSEY GULICK, M.D.,

NEW YORK.

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When one speaks of the schools of New York City, visions of great buildings containing thousands of children, situated in the congested parts of the city, come to mind. Public School 188, Manhattan, down on the lower East Side, has on its register 4,363 pupils. Public School 84, Brooklyn, has on its register 4,805 pupils. These enormous schools, embracing numbers equivalent to the population of a fair-sized village community, form, however, only one phase of the picture Public School 121, Brooklyn, last winter had on its register 36 pupils. The total number of principals, instructors, assistants, and the like was—one. Public School 7, Richmond, had 26 pupils on its roll; and in place of the 66 class-rooms in Public School 84, Brooklyn, it contained but one room, thus corresponding exactly to those village school buildings that have become so well known in the history of this country.

In discussing the health of school children we are then discussing an enormously varied group of problems—those of the single-room building in a sparsely settled territory, where the children live a considerable distance from the school; and at the same time those of the great compact building situated in the most congested districts of the world, with narrow streets, high adjoining buildings, amid a population having the most varied national characteristics.

Ventilation.—There has been appointed upon the Building Committee, which has charge of the erecting and the equipment of all new buildings, a duly qualified medical man, Dr. Louis Haupt, thus insuring to this committee that expert counsel which is needed in all such work.

All school buildings now being erected are being ventilated by the so-called "plenum" system. The air is forced into the room and finds its way out through special vents leading to the roof. Special hoods are installed to assist the flow and to prevent back draughts. The air is taken into the building at the level of the first or second stories, is carried through ducts to the cellar, there passes through a blower, and is carried into the class-room. It enters the class-room near the ceiling and is dispersed through all parts of the room by deflectors, finds its way finally to a vent near the floor, and is forced out by the incoming air. The system is planned on the basis of furnishing 30 cubic feet of air to each pupil per minute, the basis of calculation being 50 pupils to a room. Each room contains an average of 9,000 cubic feet, or 180 cubic feet per pupil.

In view of the fact that there has been considerable criticism, not with reference to the theory of this plenum system, but with reference to the efficiency with which it was administered in the New York public schools, Dr. C. Ward Crampton, Assistant Director of Physical Training, in cooperation with the Building Department, recently made a series of tests of 23 rooms in different buildings. I quote below part of Dr. Crampton's report. These rooms were selected, part of them in a direction toward the wind, part away from the wind; and in other respects as well the conditions sought were as varied as possible. I shall not burden you with a detailed report, but it was with great satisfaction that we discovered that the average income of air for these 23 rooms was 1,584 cubic feet per minute. This was not estimate, but careful measurement. "The air in the rooms, with but few exceptions, was rapidly changed in six or seven minutes. In those rooms where the air change was not complete, it was due to corners in which the air seemed to stagnate. This was the only evidence of failure in this system of ventilation. No pupils were seated in these corners."

Heating.—"In the plenum system the air strikes first a series of steam pipes, known as 'tempering coils,' which are only in use when the temperature of the outside air is below 40°. These coils bring the air to this temperature. The air is then passed through two series of steam coils. The upper one is set at 70°, the lower one at 68°. When the temperature of the air in the duct entering the class-room falls below 70°, the steam is automatically turned into the upper coil. Should it continue to fall below 68°, the steam is also turned into the lower coil. This is accomplished automatically by thermostats."

Purity of Air.—"The Department of Buildings is now installing an entirely new feature which will insure not only purity of air, but the proper amount of humidity as well. There is to be placed in one of the new buildings an air washer or purifier. The air passes a tempering coil and is drawn through a chamber in which it is thoroughly saturated with water from spray jets. It is next passed through a series of baffle plates which reduces the water and leaves the air at the 50 per cent. humidity mark. The surfaces of these plates catch all the excess moisture, and with it are deposited all particles of dust and impurities. The air then passes through the heating system and is distributed through the building. This is a great advance, as it insures the cleanliness of the air supplied to the class-room. It appears to me that this system of ventilation now in use is most

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highly efficient in that it unquestionably furnishes each child with the requisite amount of pure air."

Accommodations.—That there should be over 70,000 children who can be only partially accommodated in the schools in their vicinity seems in itself to be a condemnation of the Board of Education, particularly in view of the fact that this condition has now obtained with greater or lesser severity for a number of years. The reasons back of these conditions are not primarily financial, as they are supposed to be, but they are administrative. For example, last year there moved out of the lower East Side of Manhattan 50,000 persons who went over to Brooklyn and settled in what is known as Brownsville. The school population of Brownsville at that time was 14,221. It was immediately increased by 3,123—22 per cent. in one year. This was one of the most seriously congested districts in the city before the flood of immigration came. It had at that time 6,323 pupils on "part time." The increase raised the number on "part time" to 11,031 and increased the school population to 17,344. If this immigration had come to a district less seriously burdened, it would not have been so difficult to meet. The school accommodation, which was already inadequate, was overwhelmed. Extensive plans were already under way to remedy the congestion. These have been extended and hastened. Five buildings, which will accommodate 10,150 children, are now under way. Six thousand sittings would give each child a seat; but the Board are so sure of the continued growth of this district that they have not only allowed a leeway of 4,000, but have already had recommended by the Sites Committee three additional buildings.

It usually takes three years after the need for increased school facilities has been demonstrated to discover the proper site, to have this site approved, the property condemned, plans drawn and approved, and the building erected. The difficulty is not that the city is growing faster than it is possible to plan ahead for it, but that it is growing in unexpected ways, in unexpected places, and at unexpected times. There are now approximately enough sittings in Greater New York to accommodate all the children, but the location of the sittings does not correspond with the location of the children. A building with 1,000 seats cannot accommodate 1,000 children without ignoring their individual needs by dividing them into ten groups of exactly fifty each.

Lighting.—The standard size of rooms being placed in new buildings is 30 x 22 x 14 feet. The principle of unilateral lighting is regularly adopted, except in corner rooms. The so-called "H" building permits of the location of the school in the middle of a block and affords to every room adequate light and area. This is a type of building which I understand was developed by Mr. Snyder, the Superintendent of Buildings. The amount of window space is never less than 20 per cent. of the floor area, nor more than 25 per cent. The top of the window is 13 feet 6 inches from the floor. The distance across the room is never over 22 feet, which is less than twice the height.

Vision.—However perfectly the school building may be ventilated, with what degree of perfection light may be regulated and admitted, temperature controlled, humidity adjusted, the desk perfectly fitted to the individual, periods of sitting still shortened, and periods of varied bodily and manual activity lengthened—the central difficulty of school life remains. It is a difficulty which is dependent upon the fact that the treasures of civilization are stored in print—in minute black marks upon a white surface, which must be held relatively close to the eyes. This involves a conscious attention and strain of the ocular apparatus to which it was not adapted during the long ages when it was being developed. Even under the most favorable conditions, the strain of civilization rests most heavily upon the child with reference not merely to the eye, but also to the nerve centers back of the eyes, and to that very great symptom-complex which is associated, as we have only recently discovered, with eyestrain.

Examinations made in many cities and those made in New York under the direction of the Board of Health, have satisfied us that not less than 30 per cent. of all children in our elementary schools are suffering from ocular defects demanding correction, and not less than 17 per cent. have ocular defects so severe as to be a serious menace to their progress. These defects acquire their significance, not because they are defects merely, but because they are defects of that portion of the human organism upon which learning and education largely rest. The relation of this condition to school work is shown by the fact that ocular defects are in direct ratio to the length of time the pupil has attended school. This is the point of strain, this is the point that demands more aggressive and constant safeguarding than any other of the systems of apparatus that we each possess.

For diagnosis and treatment the Board of Education must depend upon the Board of Health. All that the Board of Education can do is to secure adequate lighting and suitable print, to prevent long consecutive use of short focus work, and to get the children to hold the book at a fair distance and at a right angle.

Seating.—The largest sedentary class in the civilized world is probably that of public school children. The significance of this fact is fully realized when we remember that the ordinary effects of sedentary occupation are accentuated, because the individuals are growing rapidly. Hence the interference is not merely with function, but with growth as well. The effects of badly-fitting school desks accentuate the manifest evils of sitting still. A desk which is too high, too low, or too far from the pupil may easily be the indirect agent for causing scoliosis, producing or aggravating myopia or astigmatism, interfering with the development of the legs through pressure upon the popliteal arteries, and the development of automatisms in the unconscious effort of the child to relieve the strained positions.

There are two ways in which the Board of Education aims to combat the evils that are incident to sitting at school desks. The first of these is by minimizing the length of time that the child shall sit still, and the second by having a school desk as nearly related to the child who is to sit in it as is feasible. Every child in the elementary schools is required, at least twice in the morning and once in the afternoon, to take the so-called "setting-up exercise." This exercise secures a large excursion of the diaphragm, thus accelerating abdominal circulation, increasing respiration and circulation in the arterial and venous system generally by the contraction of the large muscular masses of the back and legs. It also most forcibly extends the spine, calling attention to those parts of it which are bent forward chiefly in the sitting position, namely, the dorsal and cervical portions.

The modern school differs from the school of a

generation ago in no respect more markedly than with reference to its relation to the activity of the child. It seemed to be the earlier practice to regard the children as so many vessels that were to be filled with knowledge. The present situation is more accurately represented by the statement that the children are regarded as individuals, who have powers that are to be developed by specific activities of various kinds; and that these specific activities involve not merely action of the intellectual powers, but that they involve the activities of the hands, of the body, and of the vocal organs as well. The result is that instead of sitting still five hours per day, there is relatively little sitting still. A rather careful inquiry among the schools would indicate that in the lower grades less than 50 per cent. of the time is spent in sitting still, and that only in the last grades is more than three-fifths of the time spent in relatively motionless position. I think, then, it is clear that if children do not sit still for any long, consecutive period and for not more than two hours out of the five, and that during the day they take exercises specifically designed to counteract the effect of a predominately sedentary occupation—the problem is not as grave as it would be under the conditions of five hours of sitting still which obtained in the schools of a generation ago.

With reference to the adaptation of the desk to the child there are very important things to be said. The Board of Education, after careful investigation, has selected forms of adjustable school seats and desks, in order to give to children that which shall be best related to their needs. As a matter of fact, however, after the preliminary adjustment, these seats are rarely altered, for the following reasons:

Pupils in high schools have no permanent seats, but go from room to room as they change subjects. Thus each pupil during the day will occupy four or five different seats. It is obvious that under such conditions it is neither necessary nor possible to have the seats adjusted to the individual pupil. All that can be done is to have the general grading of seats correspond to the general grading of the schools, and then to seat the tall children in the back of the room and the short children in the front. There is, however, in this administration, one obvious and thus far, unsolved difficulty. Children who are myopic or who are deaf in one or both ears, should be seated so that the disability will interfere with the progress as little as possible. If the case chances to be one of the tall pupils and the indications point to his being seated where the seats are low, the difficulty is real.

With reference to the elementary schools it must be explained that in the upper two years a large number of schools is organized on the so-called "departmental" basis, which means that the pupils go from room to room in pursuing the different subjects, exactly as pupils do in the high schools. The conditions that have just been described for the high schools apply, therefore, equally to these elementary schools organized on the departmental basis. This organization is proceeding rapidly and bids fair to become general.

Beginning now with the lowest grades in the kindergarten, we find small, solid chairs, which are designed to be moved into any part of the room where they are needed. These chairs are used by different pupils and at tables rather than at desks, as the floor must be cleared for the games that occupy such a large fraction of time in the kindergarten.

In the classes above the kindergarten and below the departmental grades, we find the following fact: In 70,000 cases the pupil is able to come to school but part of the day. This is because of congestion. These are the so-called "part time" classes. Two pupils each day occupy the same desk. The only adjustment possible in such cases is the general one and of having in each room such an assortment of such sizes of furniture as will suit the average class. The classes are promoted twice each year, but the changes of individual children from room to room and from school to school are so great as to constitute a serious difficulty in the way of adjustment of school furniture to the individual, even in those schools where there are no "part time" classes.

The adjustment of the seat and desk to the individual pupil involves the following measurements of the child: Height of knee, in order that the seat may be adjusted; and height of elbow when the child is properly seated, for the adjustment of the desk. If the desk is adjustable front and back, as it should be, an additional measurement is needed in order to adjust the desk to the proper distance. I have indicated merely the most fundamental measurements.

To secure these measurements for the 600,000 children of New York City schools is at the present time impossible. In our large schools are from 1,000 to 5,000 pupils. The adjustment of each desk to fit in several respects the measurements of these numbers of children presents a problem in administration which has not been solved. It would involve the special employment of a considerable force of persons. I believe the time will come when with the cooperation of the Board of Health it will be possible to do far better than is now being done in the adjustment of furniture to the individual; but in view of the conditions of relatively brief sitting periods and many periods of muscular activity, I believe that there are other and more pressing problems with reference to school health than that of the adjustment of school furniture.

Scoliosis.—Recognizing that the constant carrying of a weight on one side of the body is one of the predisposing causes toward scoliosis, particularly in girls of weak musculature, I had the weights of books carried home by children examined in a large number of schools. The facts with reference to the seventh year, dealing with girls approximately thirteen years of age, may be taken as a fair sample. From observations made of this class in forty-five schools it was found that the number of books carried on the average was 4.7, and that the average weight was 5 1-8 pounds. The books were carried on the left arm by 69 per cent. of the pupils. The reasons for carrying books about are: first, some of the books are needed for home study; secondly, as many of the schools are used in the evenings by other pupils, the desks must be left empty; thirdly, and very prominently, the pride of many girls who like to go on the streets with a large number of books so as to appear to be in a high grade. One report noted a child who had carried twenty-one blank pads to swell the total. It is our endeavor, which endeavor is being furthered by a large number of principals and teachers, to induce the children to carry these books alternately on the right and on the left arm.

It should also be noted in this connection that the chief aim of physical training in the schools is

to secure a good posture and particularly vigor of the muscles that support the spine and hold it erect. We have thus eliminated pretty largely muscular weakness and habitually bad posture as factors in the direction of scoliosis in the children of the New York City public schools.

Over-Study.—In view of the normal activity of children, there is no danger, so far as school work is concerned, that they will do work involving too great activity. The danger is that the work will be too one-sided intellectually. If we analyze the school work for the first year, we discover that out of the total 25 hours per week, which are available between nine in the morning and three in the afternoon on the five school days, 1¼ hours are given to opening exercises, 7½ hours are given to physical training, talks on cleanliness, and the like, games and recesses, 1 2-3 hours to penmanship, 1½ hours to nature study, 2 hours to drawing and constructive work, ½ hour to weaving with cord and raffia, 1 hour to sewing. A total of 15 hours and 25 minutes, or 62 per cent. of all the time, is thus given to work which is nearly all of it such as to involve muscular activity, none of it involving study. It is needless to say that no home work is demanded of these little children. The total amount of time per week given to English is 7½ hours, and to mathematics 2 hours and 5 minutes, making a total of 9 hours and 35 minutes per week, or a little under two hours per day. Two hours per day judiciously interspersed with recesses, games, gymnastics, hand work, drawing, and music, is not an excessive burden.

Turning now to the fourth year, during which the children are about ten years of age, we find 1¼ hours given to opening exercises, 2¼ hours to physical training, recesses and organized games; 1¼ hours to penmanship, 1½ hours to nature study, 2 hours to drawing and constructive work, 1 hour to sewing, 1 hour to music, making a total of 10¼ hours, 0 41 per cent. The Board of Superintendents recommends to parents that the children be not allowed to study over an hour per day outside of school on this work. Thus we have, during the day four hours spent on intellectual tasks, broken up into short periods by physical training, manual training, music, recesses, and with less than one hour of home study. This does not seem to me to be either in theory or in practice excessive.

With reference to the eighth year, where the pressure is said to be the worst, we find 1¼ hours spent in opening exercises, 1¼ hours in physical training or games, 1 hour and 20 minutes given to drawing and constructive work, 1 hour to music, 1 hour and 20 minutes of science work, which is, to a considerable extent, done with apparatus, so that it should be classed with the more organic subjects. This gives a total of 6 hours per week. It leaves 3 hours and 48 minutes per day given to intellectual tasks. No period is longer than 40 minutes. The amount of home study is by request of the Superintendent of Schools to be limited to an hour and a half per day.

In view of these facts, how are we to account for the other facts that children are frequently overworked and that the number of nervous and fatigued children is considerable? There are several other factors in the case. I have not discussed the problem of overwork in the high schools, because they include such a small factor of the total number of pupils. I believe, however, that the conditions in the high schools are not as favorable with reference to overwork as they are in the elementary schools. It is unfair to charge up to the Department of Education all the evils that result from very short nights, after-school work of an economic character, malnutrition, and the effects of tenement housing.

1. It is true that many children are nervous and ambitious to a far greater extent than are other children, and that the amount of pressure which it is necessary to bring to bear upon average children to secure from them normal and reasonable work, tends to produce overexertion on the part of the more sensitive ones. This will account for the strenuous life of many ambitious girls and a few boys.

2. There is a considerable number of cases where overwork is to be accounted for on the ground of excessive expenditure of energy in other directions than that of school life. There are many children who have not yet reached adolescence whose hours of sleep are totally uncontrolled, who are usually out late in the evening. Upon such children the burden of school life does rest too heavily, because they do not have the needed recuperation.

3. A most unfortunate class consists of those who are obliged to work either early or late to help toward their own support or that of the family.

The present course of study is adapted neither to the very bright nor to the exceedingly slow. It is inevitable, therefore, that the bright shall find it at times tending to mind wandering, because it is too easy; and the exceedingly slow shall find it pressing upon them with undue severity. For these reasons it has been made increasingly easy for children to "skip" grades. The complete remedy for both of these cases would be to have so few children in each class that there could be a very high degree of personal acquaintance and individual treatment. The difficulties in the way of this will be discussed in another section.

Malnutrition.—We must all agree that it is fundamental to the welfare of the state that children shall be well-nourished during the growing period. There is little of any value in the world, in any permanent way, unless children grow up healthy and vigorous. Our science, art, literature, and religion will not only sink into relative obscurity, but they have in themselves no possible good except upon the basis of the life of those which they are to serve. With this general truth (which no doubt will be differently stated by different people) we must all agree.

But in a rapidly-developing state, a state in which every decade presents problems which are both fundamental and new, there exist inevitably, confusion and lack of agreement with reference to that particular arm of the State which shall look to and provide for the various needs of the community. The Department of Education has developed gradually, out of the needs of pauper children. It is no longer a charity but is patronized by the great majority of our citizens. The Board of Health arose out of the need of corporate action with reference to the spread of contagious diseases.

Many children in this community are underfed. Many more are badly fed, with equally injurious results. Does this problem belong to the Board of Health or to the Board of Education? It is a matter that relates to health and yet education is fruitless except upon the basis of good nutrition. The British Parliament is apparently about to authorize the supplying of meals to young children—a plan that has already been adopted in Paris and a number of other European cities. This is one of the problems that has not been attacked by either the Board of Health or by the Board of Education

in New York City. It is nevertheless a fundamental one—and I believe, a prominent one—so long as poverty and ignorance shall continue. It demands solution. The solution may be carried out by the Board of Education, but ultimately it is a medical question—not an educational question. The authoritative word and public opinion both are to be made through the medical men of this city. I believe the time will come when all school children will be offered an adequate lunch, furnished by the Board of Education. There must needs be, however, a large amount of public education before this can be accomplished.

Feeble-Minded Children.—During the past few years it has slowly developed in this city, as in other cities, that there is a small percentage of children—from one-half of one to two per cent.—so below grade mentally as to be incapable of the most profitable education in classes with average children. It is further recognized that one of the fundamental difficulties with reference to these unfortunates in many cases is malnutrition. Accordingly, the Board of Education has employed a specialist, Dr. Elias G. Brown, who spends his whole time in examining those whom principals and teachers think may be in such condition as to profit most by the special classes provided for these cases. He advises with reference to the care of such children and counsels with reference to their condition. This is recognized to be but a first step in a much larger plan. The success of treating these children in special classes, by methods in which manual work, physical work, baths, and the like are made prominent, has been such as to warrant extension of the work to include other classes of cases.

Defective Children.—The Board of Education last winter, on the recommendation of the Superintendent of Schools, Dr. William H. Maxwell, has taken up the consideration of care for the blind, the deaf, and those who are crippled. It is not too much to say that provision in special classes and special institutions will be made for these cases as rapidly as is possible. Hasty movement, however, in the face of so complex a set of problems is, of course, impossible. Each special class must be approached tentatively and methods of work best adapted to a public school system under American conditions must be slowly elaborated.

Physical Training.—The amount of time that can be spent for physical training in the different grades is as follows (time schedule on the basis of 1,500 minutes per week):

Years	I	II	III	IV	V	VI	VII	VIII	
	450	165	165	150	90	90	90	90	minutes

During these comparatively few moments it is obviously impossible to attempt even to give each pupil that general physical exercise which all children need. That is, it is not possible during the school day to undertake that general physical training which belongs to the playground, to the athletic field, or to the home. Neither is it possible, in this brief time, to give the pupil all the recreation that is needed. The first and most important aim of our school gymnastics is to counteract the effect of the school desk.

The partially flexed spinal column allowing the sternum to approximate closer to the vertebræ than normal, which allows the muscular layers of the abdominal wall, as well as the supporting members of the abdominal viscera to relax, results in a train of evils which is perfectly familiar to all since the classic work of Glenard, "Le Ptosis General." A decreased portal circulation, lessened intestinal peristalsis, a lower blood pressure, a shallower breathing—a familiar symptom-complex—these symptoms are more marked in a growing child than in adults whose muscles and bones have already acquired full development. It is not wise to give exercises that shall induce perspiration, for change of clothing is not possible and the child must continue in his school work immediately after the exercises. Nor is it possible to give exercises that shall involve a large amount of noise. In the great majority of cases the pupils must take their exercises in the class-room. Eighty-three of the five hundred buildings possess gymnasiums, which renders the problem somewhat easier.

The first and most direct means taken to meet these conditions is what we call our "Two Minute Exercise." In it there is emphasis upon forced deep breathing, with its effect upon portal circulation through the influence of the alternate contraction and relaxation of the diaphragm. Vigorous work is given to the extensors of the spine. This is in order to counteract the constant stretching that occurs when one bends the back forward. These exercises also call into play the large muscles surrounding the shoulder and the hip joints, as well as the extensors of the leg. Thus the large muscle masses of the body are exercised, the circulation thereby quickened, and the consumption of oxygen increased. These exercises are given at the end of each hour in the morning and between the two hours in the afternoon. The windows are opened during the exercises. Thus it is that where the system is fully carried out, a pupil never sits two consecutive hours without there intervening this group of exercises.

The second measure which is taken to combat the effects of the school desk, is the formal physical training. This consists of a series of exercises, the chief emphasis of which is placed upon movements of the large muscular masses rather than upon delicate and complicated movements of small muscular groups. The effects sought are primarily physiological. These exercises are not designed to take the place of play, nor to furnish the general exercises that the pupil needs. They are designed to combat the effects of the school desk, to secure to each pupil good carriage, and erect and vigorous habits of walking.

In the schools having gymnasiums it is possible to use the lighter forms of apparatus, such as dumb bells, wands, Indian clubs, and the like. In other schools free exercises only can be used. In both cases there are prescribed and taught by the teachers series of exercises which demand increasing muscular strength, endurance, and control from grade to grade. In addition to these formal gymnastic exercises, it is possible in the lower grades to have a considerable number of vigorous gymnastic games, having for their purpose general recreation and physical training, which in the upper years must be carried on outside of school hours.

With reference now to the after-school activities, in the line of athletics, for our public school boys and girls: This work must, in the nature of the case, be voluntary. It cannot be carried on officially by the Board of Education, for this Board is not related to the out-of-school activities of children. There has, therefore, come into existence a great organization, known as the "Public Schools Athletic League." This League has on its board of directors the President of the Board of Education, the Superintendent of Schools, district superintendents, high and elementary

school principals, class teachers, business men in the community, and others who are especially competent and interested in the problems of athletics for boys and girls.

The first endeavor of this Athletic League was in the direction of establishing great sets of city games of the ordinary kind: running, jumping, relay racing, etc. We clearly understand that these conventional athletics suffice merely to bring into prominence those boys who need athletic training the least; that is, those who are by inheritance and test endowed in physique and stamina.

Fashion and wont are such great elements among boys as well as adults that this seems to be the most useful way of teaching the athletic spirit, cultivating school loyalty, and the like. These great city games constitute the dramatic elements that appear in the public press and which are talked about by the boys. They do not, however, represent the chief work of the League, nor its main interests. Its main interests and its largest activities are to get boys having average or below average attainment, into vigorous athletic sports. The devices that are used for this purpose are, in the nature of the case, experimental and original. I mention but one: it is called "class athletics." We are giving trophies to the class in the borough of a given grade that can run the fastest for a short distance, or that can jump the farthest. Every member of the class is timed in his running or measured in his jumping, and an average is struck. This is compared with the average for other classes. There is much interest in this. The boys who are most expert help the boys who are less expert, because the average is influenced even more by the inferior runners than by the superior ones.

The problem of athletic sports for girls we are just now seriously attacking. There is now a public wave of interest in athletics for girls and women. This interest has already, in many cases, led girls and women to overdo. They have not had preliminary athletic experience, nor are they physiologically competent to wisely undertake athletics of as strenuous a character as those which are provided for boys and men. Our first object, then, is to exercise a controlling influence with reference to these sports, to see that they are not overdone and that unprepared individuals are kept out of them altogether. We aim also to devise new sports and to modify old ones, so that they shall be as adapted to the development of girls as the present forms of athletics are to boys.

The Board of Education is conducting two forms of after-school activity which are closely related to the health of its children. One is known as the Evening Recreation Centers, and the other as the Afternoon and Evening Playgrounds. During the year 1904–1905, in the most congested parts of the city, 21 schools were opened in the evening as recreation centers. In these schools ample opportunities were afforded for games, dancing, gymnastics, as well as the more quiet forms of recreation. The average attendance at these 21 recreation centers was 7,276 per evening. Some of the recreation centers were equipped with shower baths. The average number of persons taking baths per evening was 148. During the summer, after the close of the regular schools, the Board of Education opens a large number of gymnasiums and playgrounds in the afternoon. Last summer there were in operation 67 of such playgrounds. Regular gymnastic work and plays and games of many kinds, under expert supervision, are carried on in this way. The average attendance last year was 38,566 per day. During the evenings 11 of the schools having suitably equipped roofs, opened these roofs to the public, provided bands, and supplied expert supervision. The average attendance at these 11 roofs was 32,148. The 7 schools having bath equipments during last summer gave a total of 288,387 baths. The average per day is not recorded.

Instruction in Physiology and Hygiene.—In passing, mere reference can be made to this subject. It would demand a whole paper to acquaint you with any degree of fairness with the respects in which this work is being done.

Instruction is given as to the effects of alcohol and narcotics, in accordance with the law of the State. In doing this, particular pains are taken to emphasize the constructive phases of the subject—not to elaborate upon pathology or to depict pathological conditions. The case against the general consumption of alcohol is sufficiently great, so that it is found to be wholly unnecessary to resort to any extreme statements in order to carry out the provisions of the law.

A single point of view is taken each year rather than the mere repetition of the subject matter with greater detail year after year. For example, in the fourth year there is the general topic of good health; the fifth year, what children may do in the emergencies in which they may find themselves; the sixth year, health from the standpoint of the dweller in towns, contagious diseases, water supply, and the like. In the seventh year we find the usual physiology and hygiene. In the eighth year the questions of personal habits, personal control, and the like are discussed, as well as to some extent the nervous system and the special senses.

Ideals.—It may not be out of place to indicate some ideals toward which additional progress should be made with reference to the health of school children.

1. There should be individual care, personal inquiry and knowledge of the home life of approximately the lower tenth of every class. This includes those who, for one reason or another, twice fail of promotion. This work is now being done to some extent by the school nurses, under the employ of the Board of Health. The work should be very greatly extended. Allowing that there are but 500,000 children, of which but 50,000 need this individual attention, and that each school nurse can wisely handle 100 such cases, keeping in personal touch with them and with their families, it would take 500 nurses. These 500 nurses would add to the wealth of the State by saving to efficient lives a large fraction of those who now come to adult life with such a degree of impaired vigor or defective development as to be relatively unproductive in an economic sense. Whatever is necessary to be done to prevent incompetence must be done. This can only be accomplished by personal attention of a consecutive character by a person who is qualified from the standpoint of health, in cooperation with a physician.

2. We need to have the consecutive records of all children as to age, height, weight, eye, ear, nose, throat, heart, lungs, and so on. Only in this way can the highest degree of efficiency be secured. I was much interested recently to see in the current press accounts of medical care of certain child laborers in India. This care was given most efficiently, not from the standpoint of humanitarian interests, but because it was discovered that the working capacity of the children was a direct function of their health,

and that it paid financially to keep them well. It will pay well educationally for us to keep track of the children with reference to these matters of health. It is a relative waste of money to endeavor to train the nervous system of a child that is seriously undernourished, whose growth is perverted, and who has reflex irritation from defective teeth, eyes, and so on. This work which is being undertaken in such a vigorous way by the Board of Health, must be extended and coordinated more perfectly with the Board of Education.

3. The size of classes should be decreased, so that the nervous strain upon teachers shall be lessened; so that there shall be opportunity for a larger degree of individual attention than now obtains; so that teachers may be able to become personally acquainted with the children and to some extent have regard for their health in a way that is not possible in classes of fifty or sixty, where each one must be pressed into certain objective standards.

4. London has a minimum requirement of 30 square feet of playground space for each child in connection with the schools. This is very little. New York should do no less, and yet for a large school—for Public School 188, in which there are approximately 5,000 children—it would take 150,000 square feet, or a square of 130 yards on the side. An average city block up-town is 200 feet wide and 600 feet long. It would take a block 50 feet wide and 300 feet long to provide the needed area for this one school.

5. There should be an open-air playground within walking distance of each child. What is walking distance for a child three years old needs to be very near. Places where older boys may play ball need not be so close together.

6. Special classes and schools should be organized for defective children of all kinds. It matters not if these are crippled because of disability of the osseous system, the ocular, the auditory, or from central lack of development. The demands both of humanity and of social economy involve the care of these unfortunates by the public schools.

In making progress such as is here suggested, two fundamental factors are involved: first, an agreement as to what ought to be done; and second, the power to do. Concerning the wisdom of most of these steps the medical and educational men of the world are pretty well agreed, but the power is not yet present. Institutions like the public schools cannot proceed very much in advance of public sentiment, particularly when such advance involves the expenditure of large amounts of money. To furnish 500 school nurses together with such organization, supplies, and the like as they would need, would involve the annual expenditure of upwards of $500,000. To secure the consecutive examination of all children, as is recommended, would involve the employment for the city, I should estimate, of not less than 250 medical examiners. The present property value of the public schools is not less than $150,000,000. To add to this so that each child could be in a class not to exceed thirty children, would involve the expenditure of an additional 60 per cent., or $90,000,000. The additional teaching and supervisory force would cost about $15,000,000 per annum more than the $25,000,000 now spent. To furnish for each school thirty square feet of playground space would cost many more millions; how many it would be difficult to estimate. To furnish a playground within walking distance of each child in the congested districts is not possible on the present basis. If each child below Fourteenth Street were to be given a space three yards square, it would demand that approximately every fifth building should be torn down in that area. The development of many-storied playgrounds seems to me to be inevitable. The development of special classes and schools for all defectives would be an exceedingly large enterprise.

The most serious obstacle in the progress of such a program as I have outlined is the lack of informed public opinion as to the necessity for these things. Our city possesses the money and is inclined to deal very generously with all matters affecting the health and welfare of children. But the parents of most of these children were brought up under conditions of either relatively little school life, or of school life on the old basis of the three "R's" and under conditions where a considerable degree of that general motor education which goes with domestic work and cooperation of boys with the parents was possible. These citizens probably fail to realize that the conditions have changed completely; that it is no longer possible for children in central parts of New York City to play out of doors, as they themselves did, or to secure that muscular training and that motor education in connection with domestic work or cooperation with the fathers in their work which they themselves secured; and further, that these functions must be discharged with reference to the children by the State through the public schools, because under the conditions named the home no longer serves the need of the children in these respects. What we need, then, is education of public opinion.

The most capable body for the formation of opinion with reference to the health of school children and with reference to specific steps that need to be taken in order to wisely meet the conditions of child-life as presented by the city, is the distinguished professional body, members of which I have the privilege of addressing this evening. Progress is being made in every one of the directions that I have named. The Board of Education is not merely interested, but regards the health of school children as fundamental—as more fundamental than education—and recognizes its own responsibility with reference to these things; but under present conditions of public opinion it cannot proceed materially faster than it is now going. Great strides have been made during the last decade. In fact, nearly all that is being done with reference to the health of the children has been developed during this decade. All that has been outlined can be carried out as soon as it is possible to procure the funds. The physicians of this community are in a position to speak authoritatively with reference to these things, as no other persons can speak. They can enable the Board of Education to do these things. Without their help the Board of Education must proceed slowly and lamely in these matters.

During the winter of 1905 there was an extended attack on the Board of Education because it used physical training, manual training, drawing, music, cooking—all those subjects that involve the training of the body, the training of the eye and the hand, the training of the breathing apparatus, the vocal apparatus—all of them involving central coordinations, motor images, and the like. That was a time when the Board of Education needed the support of the medical men of this city. Such support was not given. The Board of Education needs and craves not only the advice, but also and equally the support for every step which it takes

with reference to increasing the health, the personal efficiency, and the power to live of these complex groups of children that come to it from all over the world. For these reasons it was with peculiar pleasure and gratification that I received the kind invitation which has made the presentation of this paper possible.

THE PHYSICAL CARE OF SCHOOL CHILDREN.

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It is probably the opinion of most physicians of this city who have the care of children that almost all school children are overworked, and that this is true in all grades of school life, in the kindergarten, the primary school, the secondary school; and the same is true of young men in the professional schools. This overworking is a natural tendency, because children are sent to school to learn certain facts and to receive mental training, and each institution is striving for a high standard of scholarship. Such a practice is apt to cause some physical wrecks, as we know is the case in New York, through a straining of the nervous system or on account of the lack of physical exercise caused by continuous application to studies, while indirectly by overworking the teachers who are apt to become neurasthenic, there is set up a reflected nervous irritability in their pupils.

Under good surroundings that can be regulated, the care of children, both by parents and physician, is a source of considerable satisfaction and pleasure until they enter the kindergarten or school. Until that time they may be troubled occasionally with slight colds, with constipation, or with adenoid hypertrophy, but as a rule they may be kept in good health. As soon as the child is entered in the kindergarten infections are more apt to occur. Colds recur more frequently, and the ordinary acute infectious diseases of children are apt to break out. Whooping-cough, mumps, chicken-pox, and measles usually occur within a few years after the entrance at the kindergarten. As the child leaves the kindergarten and enters the primary school this liability to contract contagious diseases persists, while the prolonged concentration required in the school régime produces frequently, toward the end of the school year, certain nervous disorders, of which chorea and hysteria are the more common varieties.

The question naturally arises whether these disadvantages of our present school system are due to any defect in school methods, or whether they are only an accompaniment of a system of education that is necessary for each generation, and whether school life could in any way be modified so as to impart sufficient knowledge without impairing the health of the child, and with less liability of exposing the child to contagious diseases.

Let us first consider what are the essentials of the preservation of good health in children.

First, they need ample rest. They should have ten or twelve hours in bed at night, and often with advantage a nap after the midday meal.

Second. A proper diet: A moderate breakfast, a substantial but digestible dinner, and a simple supper. All these meals to be eaten slowly and well masticated.

Third. Fresh air. A child should be out-of-doors several hours a day, and when in the house should be in rooms well ventilated and provided with at least 1,500 cubic feet of air space per person.

Fourth. Freedom from dust and exposure to disease. Infections due to dust and the direct exposure to contagious diseases cause a large part of the sickness of school children.

Fifth. Freedom from worry and fatigue. Neurasthenia exists in earliest infancy and is common in school children. It is induced by anxiety, and particularly in children by prolonged application. The child can exert itself intensely for short periods without harm, but prolonged application produces marked fatigue.

Our experience tells us that when these five essentials of good health can be maintained—ample rest, proper diet, fresh air, freedom from infection and freedom from worry—there is usually little difficulty in securing prolonged good health. Our problem, then, is to ascertain whether such conditions are practicable for our school children. They are certainly not offered now to any school children. Can private or public schools be organized that would afford them?

The first condition, ample rest, may be obtained with our present school arrangements, except that with most classes no opportunity is allowed for a nap after dinner. This is not necessary in all cases, but is always desirable. The diet is also a matter for home regulation, except in public school children, but this opportunity for the children to take their hearty midday meal at leisure is often prevented by too small an allowance of time for the noonday recess. In some of our best schools but forty-five minutes are allowed for the child to go to his home, eat the most substantial meal of the day with meat, and return to school. One hour would seem to be too little for such a recess. The question whether our public school system should not provide one nourishing meal a day, at least to those children who are poorly fed at home, is a matter that we cannot discuss here, although it is evident that the best work cannot be obtained from the underfed.

When we consider the lack of facilities of obtaining fresh air by our school children, we find one of the most potent elements in the production of disease among them. The defective ventilation of school buildings is in common with all public buildings, and the popular fear of a draught often interferes with a sufficient opening of windows.

In the consideration of outdoor play, it is necessary to separate the private school children from the public school children, and we must also remember that it is not sufficient to give all children an opportunity to get into the fresh air if they will, but that it is necessary to force some children of natural sedentary habits to play out of doors.

Children go to school in the morning, remaining until noon; return at one, remaining until perhaps three, after which some will play in the streets and others return to their homes, having had practically no out-of-door play during the day.

New York has previously offered few facilities for outdoor play for school children. It seems to me that the provision for this outdoor play, which is essential to their health, and thus must be obtained if they are to do good school work, should devolve upon the educational authorities.

This problem may be solved to some extent by the public school, which could keep the children

under supervision during the whole day, having a supervisor of physical exercise remain with them before and after school hours, when they could play in enclosed cages on the roofs or in adjacent public parks under supervision.

The important influence that such supervision would have, not only upon the physical condition but on their moral development, would be worth to the city far more than the expense. Indeed, it would be an economy in diminishing expense for the suppression of crime when these children grow up.

In some of our best private schools provision for play under supervision is made, but such play is too often carried on in closed rooms, and not out of doors, so that a large part of the advantage that might accrue from it is thus lost.

My own feeling is that the time will soon come when our best private schools will move to the suburbs of the city, where, instead of occupying a plot fifty by one hundred, they can have several acres of land. The child could sleep at home, go to the school in the morning, obtain the outdoor play there, and return to his home late in the afternoon. The parents would thus remain in touch with their children in a way not possible at boarding schools, while at the same time the children would enjoy the facilities for outdoor play which are such an advantage to our boarding school children.

The effort to protect school children from disease has brought about many improvements in our public school system, but has not as yet effected many changes in private schools, although some inspection exists in many of the latter. The excluding of sick children has never been as rigidly carried out as it should be to protect those that are well. So far as I know children with colds are excluded from only one private school in New York City, while it is well known that so-called colds are often an evidence of influenza, which is a very contagious disease; that they exist for three days preceding the eruption of measles, while what is known as a cold is the common phenomenen of the first two weeks of whooping-cough before the characteristic cough develops. If children with colds were absolutely excluded from our schools measles epidemics would not travel so fast, whooping-cough would be much less prevalent, and through the diminution of influenza school attendance would be markedly improved.

I was recently called to see a boy suffering from sore throat, who was attending a kindergarten class of eight children. I asked him whether the children had all been in attendance on the preceding day. He said no, that he was the only child there. I visited the school the following day and found no member of the class present, and on inquiry learned that one of the children had come to school with a slight cold the week before. Had that child been excluded it is not likely that the other seven children would have been absent at that time.

Next to colds, the most common evidence of contagious diseases in children may be said to be eruptions; so that no child with an eruption should be allowed at school until the eruption has been pronounced by a competent person as not an indication of a contagious disease. The presence of dust in school rooms is naturally a source of danger, and should be reduced to a minimum by careful and proper cleaning of the floors and furniture.

Fatigue in school children was well demonstrated in a scientific manner by Dr. Christopher of Chicago, who supervised some excellent work on the public school children of that city. By means of the ergograph, which tests motor activity in the middle finger, he examined a number of children in different schools. In each case he found their activity greatest when entering school at nine o'clock; that it diminished rapidly during the morning session, reaching its lowest point at noon, when they were dismissed. At one, after returning, it had reached about the same maximum as at nine in the morning, and during the afternoon it diminished even faster than during the morning. He found the same results in all the children tested, except in one group of four boys in one of the schools, who showed no deterioration in physical activity during the day. On investigating these cases it was found that the teacher of these boys had been absent, and while they had been in school all day they explained that they had been having a good time. It, therefore, appeared that this deterioration in physical activity, when present, was the result of prolonged application, and not of the confinement in school.

The relief of school children from worry and from fatigue from prolonged application can best be secured by shortened school hours, by short periods devoted to any one subject, and frequent recesses devoted to physical exercise. Such a scheme should be so worked out that, when controlled by some instrument such as that used by Dr. Christopher, school work would result in no appreciable deterioration.

Through the kindness of Miss Carse, the principal of the Charlton school, I have tested for fatigue certain children under her care. I chose for the test children who were for the first time undertaking work that required concentration—that is, children of about seven years. I applied the Crampton test for fatigue, the comparison of pulse rapidity and blood pressure, taken standing and lying down, and the test with the ergograph.* The children were tested just after coming to school at nine o'clock and just before leaving at half-past twelve. In none of the children examined was any marked fatigue shown. Most of the tests average as good at twelve thirty as at nine o'clock in the morning. The reason for this striking absence of fatigue may be found in the examination of the daily program. The school day lasts only from nine to twelve-thirty. The session consists of periods of but fifteen minutes devoted to any subject, and each fifteen minutes the children are alternately standing and sitting. The middle of the session is interrupted by a fifteen-minute recess out of doors, and an hour later by a five-minute recess spent in jumping through the seats. These observations of mine are too limited to base large conclusions upon, but the unusual absence of fatigue in most of the children examined would seem to indicate that the program was very successful.

There can be no question but that proper physical development is more important for our school children than any knowledge that can be imparted to them. The acquirement of knowledge accomplished by physical injury is harmful, not beneficial.

*The writer is indebted to Professor F. S. Lee of the College of Physicians and Surgeons, Columbia University, for many valuable suggestions and for the apparatus loaned to him for the experiments.

It is usually the case that when little children of five years, who have previously been kept out of doors all day, and have had no concentration on any subject, enter kindergarten classes, where a session of one hour should be sufficient, you will find two and one-half hours required, during which period not more than twenty-five minutes of recess is allowed. As they grow older, at ten years four hours will be required, with no more recess than the kindergarten child had, and with more time devoted to the preparation of lessons of the following day.

It is my opinion that for children between five and ten years of age not more than ten or fifteen minutes should be devoted to any one subject, and that this period should be followed by five minutes of active exercise in the open air or with the windows open; that but one hour should be devoted to work by children of five years, and that not more than one-half hour should be added each succeeding year up to ten years; and that a part of the school day should be out-of-door play in the afternoon under supervision.

To summarize, then, our ideal private school should be out of town, but within easy reach of the homes of its patrons. It should have short periods of study, separated by frequent recesses, and ample time allowed for a substantial midday meal, taken at leisure. The harder work should be given during the morning hours, the lighter work in the afternoon hours, to be followed by play out of doors, in which all the children must take part.

The ideal public school should take the children as many hours a day as practicable. They should come to school as early as eight in the morning and enjoy an hour's outdoor play under supervision before undertaking their tasks. The periods devoted to each subject should be short, with frequent recesses. At noon a nutritious but simple meal should be furnished them. In the afternoon the easier subjects, the manual work, and the preparation for the lessons of the next day should be taken up. Opportunity for out-of-door exercise under supervision until late in the afternoon should be provided.

In both private and public schools a much more severe examination for any evidence of contagious diseases should be made than at present. All children with colds should be absolutely excluded from school, and children with eruptions should be excluded until the eruption has been pronounced by a competent person noncontagious in character.

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TREATMENT OF APPENDICITIS.*

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In America, at present, the advisability of operation at some stage of appendicitis—or subsequently—is conceded by a large majority of the profession and laity. This same majority agree upon operation in all early cases, barring some strong contraindication. The term "early" is preferable to the measure of a certain number of hours after the onset, and it indicates absence of complications, such as perforation, abscess, local, spreading, or general peritonitis, infection of pelvic organs, or such systemic effects as septicemia, pyemia, pneumonia, etc.

A smaller but increasing proportion of the profession would defer operation, in late cases, where one or more of the above complications exist, until the interval, which they believe will come about by means of preliminary treatment, popularly known as Ochsner's, because Dr. Ochsner of Chicago has more thoroughly and persistently than anyone else, practised and publicly advocated its use. It is consistent also to speak of the Ochsner method as the conservative, contrasted with the radical plan of treatment, wherein immediate operation is done at any stage of the disease, when the diagnosis is clear and the patient not moribund.

Conversation and correspondence with other physicians have convinced me that a more or less hazy idea of Ochsner's concept of conservative treatment of appendicitis exists, some thinking that he decries all operations; others that he operates only during the interval; while not a few are unfamiliar with the details of treatment by which he expects to bring a complicated case to the interval for what he considers a safe operation.

The limits of this paper prevent my presenting Ochsner's argument as fully as I should like. I am therefore compelled to abstract as briefly as possible a paper read by him at Chattanooga, October 14, 1904.

He said in part: "1. The mortality in appendicitis results from the extension of infection from the appendix to the peritoneum, or from metastatic infection from the same source.

"2. This extension can be prevented by removing the appendix while the infectious material is still confined to that organ.

"3. The distribution or extension of the infection is accomplished by the peristaltic action of the small intestines.

"4. It is also accomplished by operation after the infectious material has extended beyond the appendix and before it has become circumscribed.

"5. Peristalsis of the small intestine can be inhibited by prohibiting the use of every form of nourishment and cathartic by mouth and by employing gastric lavage in order to remove any food substances or mucus from the stomach.

"6. In this manner very dangerous cases of acute appendicitis may be changed into relatively harmless cases of chronic appendicitis.

"7. In my personal experience no case of acute appendicitis has died in which absolutely no food of any kind and no cathartics were given by mouth from the beginning of the attack."

These constitute the nucleus of Ochsner's argument. He then makes the following suggestions, based on his arguments for the treatment of appendicitis:

"1. Patients with chronic recurrent appendicitis should be operated on during the interval.

"2. Those with acute appendicitis should be operated on as soon as diagnosis is made, provided . . . the infectious material is still confined to the appendix, if a competent surgeon is available."

(Thus far you notice that he agrees with the radicals), but he says further:

"3. In all cases of acute appendicitis, without regard to the treatment contemplated, the administration of food and cathartics by mouth should be absolutely prohibited, and large enemeta should never be given.

"4. In cases of nausea or vomiting or gaseous

*Read in a Symposium on Appendicitis at the annual meeting of the Medical Society of the State of New Jersey, held at Atlantic City, June 19, 20 and 21, 1906.

distention of the abdomen, gastric lavage should be employed."

(Now especially, he differs from those practising radical methods.)

"5. In cases coming under treatment after the infection has extended beyond the tissues of the appendix, especially in the presence of beginning diffuse peritonitis, conclusions three and four should always be employed until the patient's condition makes operative interference safe.

"6. In case no operation is performed, neither nourishment nor cathartics should be given by mouth until the patient has been free from pain and otherwise normal for at least four days."

Now as to Ochsner's statistics, covering 1,000 consecutive cases, including seven fatal ones that died without operation; they are as follows:

	Cases	*Deaths*	*Death Rate*
Chronic appendicitis or interval operations	540	3	0.5%
Acute appendicitis without perforation	255	5	1.9%
Acute, perforated, or gangrenous without abscess	55	..	.....
Acute, perforated with abscess	117	4	3.4%
Acute appendicitis with diffuse peritonitis	33	10	30.0%
Total	1,000	22	2.2%

This must be conceded as a remarkable showing for 1,000 mixed cases, and yet, in the approximate bearing and value to the general practitioner of medicine and surgery, one must carefully consider the fact that all were operated upon by a surgeon of much more than ordinary ability (with well trained assistants), both in judgment and technique, all in the same hospital and under good surroundings.

A comparison of work under such conditions, with the results by more radical surgeons, who operate not only in one hospital, but perhaps in two or even three, and in houses as well, with different sets of assistants—in many cases not accustomed to their methods of technique, can never be absolutely fair and may be very misleading.

Believing as I do, that the chief issue regarding treatment of appendicitis to-day concerns the line of cleavage between the radical surgeon who would operate immediately upon all complicated cases (not moribund) upon satisfying the diagnosis, and the conservative one who would wait for the subsidence of acute symptoms; in other words, the interval, I concluded to send a list of queries to a considerable number of men—presumably representing both classes.

Through the courtesy of Dr. Ochsner I secured a list of about twenty surgeons, who, he assured me were using his method. Next I selected about an equal number whom I had reason to believe were treating such cases radically and sent to each the following printed form, with stamped envelope for return:

1. Have you ever given the "Ochsner" treatment of complicated appendicitis a thorough trial?
2. If so, in how many cases (exact or approximate)?
3. What has been your mortality rate (exact or approximate)?
4. How have the results compared with your other cases of the same character treated by radical operation?
5. If you have not practised the "Ochsner" method, what, in your judgment, are (briefly) a few of the most important features of the operative treatment of complicated cases, especially in presence of general peritonitis?
6. What has been your operative mortality rate (exact or approximate) in early, uncomplicated appendicitis?
7. The same in complicated cases?

As a result of forty such requests I received eighteen answers about equally distributed between the two divisions. I see no special advantage in mentioning names when I summarize briefly the results of my correspondence, though I do not consider it by any means of a confidential character.

A source of disappointment lay in the fact, on one hand, that among the Ochsnerians (if I may coin the word) such small lists were given as a basis for conclusions—ranging from two to forty-seven. Again a large proportion were unable to give exact statistics. Further, two distinguished surgeons and authors, who presumably use the radical method and could no doubt furnish valuable data, begged to be excused.

The largest number of cases reported treated by the conservative method, as I have said, was forty-seven, the smallest two. The surgeon reporting forty-seven cases said the mortality was practically *nil*, and yet acknowledged two deaths—4.25 per cent. One reported twenty-five cases by the conservative method with ten deaths—40 per cent., while his mortality in complicated cases by radical operation was only 8 per cent.

A report from the Carney Hospital, Boston, said that they had used the Ochsner method "in quite a number of cases," that the mortality in 450 cases during the last two and three-quarter years—all stages and all methods implied—was 3⅓ per cent. This, again, helps but little from lack of classification of cases, methods, and mortality by each. Among the radical operators who reported death rate in complicated cases, the mortality ran from 4.5 per cent. to 30 per cent. I judge that the surgeon reporting the larger percentage understood complications to mean only general peritonitis. The same class reported the death rate of early cases from 0.6 per cent. to 1.5 per cent. One said that he never operated in early, only in abscess cases.

A distinguished surgeon of our State said that he had used the Ochsner method in three cases and all died, but he thought they would have been fatal under any treatment. He also said that he believed all cases of genuine general peritonitis died. John B. Murphy expressed the same sentiment here, I think in 1901, at the A. M. A. meeting. Three years later he retracted, saying, that he had meanwhile operated in six such cases with four recoveries.

Most of the radical operators who replied to my questions agreed that immediate operation at any stage, where diagnosis was clear, removal of appendix if possible (and it almost always is), and irrigation with normal salt solution combined with Fowler's position were the essentials—the worse the case the more rapid must be the work. Opinions differed as to the extent of peritoneal toilet advisable—also as to drainage. Several urged opium in conjunction with the above to quiet peristalsis,

and I suspect this question has more merit than most of us allow.

Many of the radicals were in line with all the essentials of the Ochsner method except the dictum of waiting for the interval. Personally I have no doubt that eventually mouth starvation, rectal feeding, gastric lavage, if indicated, and small saline enemata will be accepted as essential even in cases where the surgeon believes it either unwise or unsafe to attempt to wait for the interval.

From the foregoing I am forced to the conclusion that this very important question, which will probably outlast all others of differential treatment, viz., immediate *versus* late operation in complicated cases, will never be fairly settled, until some competent surgeon with the opportunity to treat in some one up-to-date hospital a large number of appendicitis cases, shall, on at least 500 (or better 1,000) patients, practise only the conservative or waiting policy in complicated cases and then on a like number the radical plan. The alternative would be for two competent men to make the same comparison on the same number of cases under as nearly as possible the same circumstances and surroundings.

A few words remain to be said about some of the technical details of the operation. Undoubtedly most surgeons now believe that invagination of the stump is the ideal method. To Seelig of St. Louis belongs the credit of reviving interest in the old method of ligation, amputation, and cautery of the stump. He shows that it is equally safe, as free from subsequent adhesions, fistulæ, infection, etc., as is inversion, and also avoids certain accidents, such as imbedding of the stump, where inversion was intended, with the possibility of intramural abscess of the cecum—also an occasional secondary hemorrhage from a small artery in the end of the stump not controlled by the purse string of invagination—besides being a distinct time saver.

My first five hundred appendectomies (approximately) were done by the ligation, amputation, and carbolic acid cautery method; my next two hundred (approximately) by invagination—while for several months past I have reverted to the old method with equally good results.

In all circumscribed abscess cases it is of the greatest importance to safeguard the general peritoneum by introducing beneath the edge of the incision strips of iodoform gauze before spilling a drop of pus.

If any rule can be formulated as to irrigation it would be: Do a dry operation in all circumscribed abscess and localized peritonitis cases, relying only on sponging; in diffuse peritonitis flush thoroughly with salt solution, and my experience would say search for pockets and break up adhesions as well.

In regard to the problem of drainage: beyond doubt, the peritoneum, after the bulk of infectious matter has been removed, is vastly more tolerant of the remainder than we formerly thought, as is shown by the number of infected cases recovering without drainage; however, the old adage "in cases of doubt drain" is wise policy. The cigarette drain inserted well into the pelvis, with the patient in Fowler's position, is very effective. Multiple strips of iodoform gauze placed in various directions throughout the abdomen and pelvis produces copious drainage for forty-eight hours if the top dressings are frequently changed, and in my hands have apparently saved many desperate cases. This plan has worked too well for me to allow its abandonment in selected cases.

I desire in conclusion to thank those who have so courteously assisted me by information regarding their work.

111 Belmont Avenue.

COMPARATIVE TREATMENT OF INTESTINAL AMEBIASIS.

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The following conclusions were deducted from a study of five hundred and forty-two cases of amebic dysentery treated in the hospitals of Bilibid Prison from June, 1903, to October, 1905.

One is immediately impressed, upon undertaking the treatment of this disease, with the uselessness of any but a direct method of attack upon the infected areas in the lower bowel. So at the outset it may be said that no medication by way of the mouth was considered in the hunt for a line of treatment offering the greatest good together with a minimum amount of discomfort and annoyance to the patient.

Upon assuming charge of the Medical Department of Bilibid Prison, with its 4,500 inmates, the quinine treatment (irrigation of the colon with an acid solution of the sulphate, of a strength of 1-500 or 1-750) was in general use throughout the Philippine Islands. As this method was in use at the prison, it was continued for about one year, the results being good, bad, and indifferent, the patients commonly complaining of pain and discomfort during its administration and of annoying head symptoms from absorption of quinine from the bowel. Under its use, moreover, the progress of a case toward convalescence was invariably slow and tedious, most cases being under treatment six weeks and over, the amebas disappearing from the stools slowly, and showing an obstinate tendency to recur. Owing to the severity of these cases the patients were invariably treated by absolute rest in bed, under a carefully arranged diet, modified according to the progress of the case, and designed to supply a maximum amount of nutriment with a minimum residue upon reaching the large intestine.

After groping about for another six months for a more satisfactory and efficient remedy, and trying in succession a number of drugs hoped to be good for the patient and bad for the ameba, the writer was fortunate in seeing an article by Dr. Moore, of the Agricultural Department, upon the use of copper in the treatment of city water supplies contaminated with low forms of vegetable life. The truly remarkable activity of the copper, in extreme dilution, upon algæ suggested its use against a member of the animal kingdom, namely, *Amœba coli*.

Rough studies of the effect of weak solutions of copper sulphate upon active amebas in fresh stools, from typical cases of amebic dysentery, soon convinced the writer that the drug had a decidedly lethal action upon the parasite, in solutions of a strength of one to ten thousand, arresting their motility and causing a shrinkage of the cell protoplasm. This seemed conclusive enough to warrant a clinical trial; so, after testing the effect of a solution of the same strength upon a normal colon and experiencing no ill-effects, ten severe typical cases were selected from new admissions to the wards for comparative study.

A rough estimate made of the number of amebas to a microscopic field (⅛ inch) from a fresh stool obtained by the use of a saturated solution of mag-

nesium sulphate was first made. The patients were then kept under observation for a few days to allow of the collection of clinical data for purposes of comparison, *i.e.* weight, record, number, and character of stools—special note being taken in regard to the amount of blood and mucus—condition of the appetite and digestion, and state of the kidneys. They were then placed upon a like diet with ten other dysentery cases in which the quinine treatment was employed.

The copper sulphate instillations were begun as follows: After placing the patient upon a specially designed inclined plane that comfortably raised the buttocks twenty-five centimeters above the level of the shoulders, thus allowing for the complete distention of the entire colon, especially at the cecum where the amebas are usually present in large numbers, by taking advantage of the fact that, as the majority of the weight of the solution is thus kept internal to the sigmoid flexure, a maximum distention of the entire colon is produced, while a minimum amount of pressure is brought to bear upon the rectum and its sensitive nervous mechanism, the colon was thoroughly irrigated, through a double-flow colon tube, with sterile water until the return was perfectly clean. After draining off all the surplus water the bowel was slowly filled with the copper solution by starting with the reservoir on a level with the anus, and slowly elevating it as the gut accommodated itself to the pressure, thus distending it to its fullest capacity without exciting contraction of the muscular walls.

As there was never any pain complained of in the use of the copper solutions, the patients seldom experienced any great difficulty in retaining it for twenty minutes; so that the entire extent of the lower bowel was thus exposed to the action of the ameba poison for sufficient time to kill off all of the parasites in the crevices of the mucous membrane and the ulcers themselves, and to some extent, perhaps, those in the deeper layers of the membrane, although it would seem, from what we know of the action of the sulphate upon tissues, that its penetrative action would be very limited.

This procedure was repeated every twelve hours, making two instillations per day. The question of frequency of treatment is an important one, for there can be no doubt that too great a number per day do infinite harm, by weakening the patient so that his resistance to the invasion of fresh areas of the mucous membrane by the ameba is so lowered that it more than counterbalances the very object aimed at by the overzealous attendant, namely, the checking of the development of the parasites by killing them off as frequently as possible. As clinical experience, as well as laboratory research, has proven that a twice daily destruction of organisms, both animal and vegetable, will sooner or later exterminate their source, it would seem wiser to depend upon two thoroughly efficient applications of the solution than to exhaust the reserve force of the individual by a needless frequency.

At 2 o'clock in the morning each patient, of the quinine as well as of the copper series, was given 50 c.c. of a saturated solution of magnesium sulphate, with the object of washing from the membrane by exosmosis as many of the amebas as possible, and by clearing out all digestive residue, securing a clean tract for the day's work. The stool resulting from this purgation was also used in making a daily estimate of the number of amebas per microscopic field.

For the convenience of the reader the bulky tabulated reports of the microscopical and clinical findings will be dispensed with, and in their stead the writer will make general extracts, from both series, upon the basis of the progress of the cases at various times during treatment:

Third Day.

Quinine Series.	Copper Series.
Patients complain of considerable pain and discomfort during the administration of the instillations, and are generally unable to retain them longer than from five to ten minutes. Stools are frequent, accompanied by tenesmus, and contain large amount of blood and mucus. Body weight same as on first day. Microscopical reports show large number of active amebas in all specimens.	Patients bear the instillations for from fifteen to twenty minutes without pain or serious discomfort. Stools are frequent, accompanied by tenesmus, and contain large amounts of mucus and blood. Body weight remains the same. Microscopical reports show slight diminution in the number of amebas per field, and a noticeable lessening of their motility.

Seventh Day.

Quinine Series.	Copper Series.
Patients still complain of discomfort during administration of instillations; also of headache and ringing in the ears. Stools retain same character as on first day, although there is some improvement in the frequency. Body weight generally the same; some slight increase in a few of the cases. Microscopical reports show large number of actively motile amebas in all the cases.	Patients retain solutions well. No pain or discomfort. Stools show well-marked improvement in blood and mucus content. Frequency and tenesmus lessened. Body weight shows a general increase, although slight, amounting to about 500 grams in most of the cases. Microscopical reports show a well-marked decrease in the number of amebas and a slight decrease in their motility.

Tenth Day.

Quinine Series.	Copper Series.
Patients continue to complain of discomfort during administration of the solutions. Absorption symptoms still in evidence. Some nausea is also present in a few cases. Stools are slightly improved in frequency and in amount of blood and mucus present. Tenesmus still very marked. Body weight: Several of the cases show increase of about 500 grams. Majority about the same as at the start. Microscopical reports show slight decrease in the number of the amebas per field; motility uninfluenced.	Patients indifferent to the quantity of solution introduced. Stools about 50 per cent. less frequent than on first day. Slight amount of blood only present. Mucus content still large. Body weight still on the increase, amounting, in some instances to a total of 1,500 grams. (About 60 per cent. of the cases.) Microscopical reports show very few amebas to a large number of fields; motility decidedly lessened.

Fifteenth Day.

Quinine Series.	Copper Series.
No change in the attitude of the patients toward the treatments. Stools have improved somewhat as to frequency, and also as to the amount of blood; mucus still abundant; tenesmus unchanged. Body weight slowly increasing, but only totaling about 800 grams in the best of the cases. Microscopical reports still show comparatively large number of amebas present; motility not changed.	Patients do not complain of pain or discomfort during the use of the solutions. Stools rarely show any blood. Quantity of mucus markedly less. Some of the cases are having slightly formed stools and no blood or mucus. Weight records still on the increase, averaging about two and a half kilos since the first day. Microscopical findings show absence of amebas in the majority of the stools. Those that are found are few and far between and have very little motility.

Twentieth Day.

QUININE SERIES.

The solutions still continue to cause discomfort and absorption symptoms.

Stools show well marked improvement in amount of blood contained and as to the number. Mucus lessening somewhat, as is also the tenesmus.

Weights are on the increase in the majority of the cases, although the best showing is 1,500 grams from the first day.

Laboratory reports show a diminishing number of amebas in the specimens from a majority of the cases.

COPPER SERIES.

Patients continue to be indifferent to the treatment.

Stools in almost all cases are formed. No blood or mucus being present in any of the cases.

Weights still on the increase, showing a general average of about three and a half kilos since the first day.

Purgation with magnesium sulphate still brings away a few parasites in some of the cases (about 40 per cent.).

Twenty-fifth Day.

QUININE SERIES.

No change in the action of the quinine solutions both locally and generally.

Stools in about 60 per cent. of the cases are about half as numerous as on the first day. Marked improvement in the amount of blood and mucus present in the favorable cases. The others are about at a standstill.

Weights in the favorable cases are steadily increasing, amounting to an average of about two and a half kilos, since the first.

Laboratory reports continue to show amebas in every case, although they are fewer in number in almost all.

COPPER SERIES.

Stools in all but one case are formed and apparently normal in every respect, no blood or mucus present. The odd case has some mucus present, stool semi-solid.

Weight records continue to show an increase in all the cases, amounting to an average of about four kilos, total since first.

Microscopical reports show absence of amebas in all but one specimen, and in this they are very difficult to find.

Thirtieth Day.

QUININE SERIES.

Some of the cases seem to have established a partial tolerance to the action of the instillations, although this is not general.

Stools in the majority of the cases are very much less frequent, and are containing less and less blood and mucus. Some 20 per cent. of the cases seem not to be making any noticeable improvement either as to frequency or amount of blood and mucus.

Weight records show increase since the twenty-fifth, in all but the two nonprogressive cases.

Microscopical reports show continued diminution in number of amebas in all but two specimens.

COPPER SERIES.

All stools are formed and normal.

Patients have gained on an average four and a half kilos.

Microscopical reports show absence of amebas from all specimens.

Thirty-fifth Day.

QUININE SERIES.

Patients still complain of discomfort during the use of the solutions.

Stools of all but two of the cases are improving in every way.

Weight records show gradual improvement in all but two cases.

Microscopical reports show that three cases failed to have amebas. Five showed very great reduction in the number of parasites, while two failed to show any material improvement.

COPPER SERIES.

All stools normal.

Patients still gaining weight, in all since the first, an average of five and a half kilos.

Microscopical examination shows no amebas in any of the ten specimens after a prolonged search through a large amount of material.

Patients taken out of the hospital and placed in Convalescent Camp, treatment being suspended.

Fortieth Day.

QUININE SERIES.

No change in reaction to the solutions.

Three patients are beginning to have formed stools; five have very great reduction in the amount of blood and mucus present, while the remaining two are still having frequent, bloody stools with large amount of mucus, and accompanied by annoying tenesmus.

Weight records of all but two cases show steady improvement.

Microscopical reports show absence of amebas in three cases; diminishing number in five, and large numbers in two.

COPPER SERIES.

All stools normal.

Weights on the increase.

No amebas found in any of the specimens obtained after purgation.

Fiftieth Day.

QUININE SERIES.

Three patients have been transferred to the convalescent ward. Two have partially formed stools, with a small amount of blood and mucus; three others show slight improvement in character of movements combined with a lessening in the number, while the remaining two are still showing but slight gains in the character and frequency.

Weight records show marked improvement in eight of the cases, and slight increase in two.

Microscopical reports show absence of amebas in the three patients' specimens sent to the convalescent ward; very few in two more; decided lessening in the number of parasites in three others; and diminishing number in the remaining two.

COPPER SERIES.

Patients have been doing regular work for a week.

Microscope failed to show amebas in any of the ten specimens obtained after the use of magnesium sulphate.

Sixtieth Day.

QUININE SERIES.

Two of the remaining seven cases were sent to the convalescent ward after going negative for five days, their stools being formed. Patients return for treatment twice daily.

Of the remaining five patients three are now having slightly formed stools with no blood and no mucus; the remaining two are beginning to pass soft stools containing a diminishing amount of blood and mucus.

The weight reports of the worst of the cases are now showing a very marked increase over the last record. Others still continue to improve rapidly.

Amebas found inconstantly in the better of the five cases; in the two slow cases they are fewer in number, but constant.

The convalescents were kept under observation for about a month after leaving the hospital, and, as far as is known, no case of the copper series had a return of the disease. The quinine cases, however, were not so fortunate, two of the ten suffering a relapse about a month after suspension of treatment. The hospital records show a large number of instances of men being admitted for from two to four times for this affection within a space of one year.

After the second month of this treatment all cases of amebic dysentery admitted to the hospital were placed upon the copper treatment, and its extended use more than confirmed the results obtained in the trial series.

A word in regard to the temperature and strength of the copper solutions may not be amiss, as experience showed that attention to every minor detail

drew compound interest in the results of treatment. As a general thing most cases improved more rapidly under the use of very hot instillations, due, no doubt, to improved penetrative power and to the reaction brought about by the heat in the mucous membrane. Clinical experience proved that most patients could bear comfortably a temperature of from 106° to 110° F., and although profuse perspiration always occurred, no unfavorable symptoms ever resulted.

In some of the more extensively ulcerated cases, roughly determined by the amount of blood and mucus present in the stools, more rapid results were obtained by the use of a stronger solution. No case failed to react favorably to a solution of a strength of 1-6,000. A stronger fluid than this was never used.

The very rapid gain in weight in almost all the cases was due, it is thought, to the fact that, almost without exception, the dysentery cases were new arrivals from the field, and consequently were suffering from chase-fatigue as well as from the disease itself. The greater gain recorded in the copper series was no doubt due to the more rapid recovery from the disease drain; it is also thought, from general observation of the cases, that some tonic action resulted from the use of the copper solutions, possibly from some slight absorption through the mucous membrane. However this may be, the facts are that all cases so treated acted as patients under the influence of an alterative, such as arsenic, as shown by a vigorous appetite and rapid increase in weight.

In conclusion, it may be said that the copper seems to have a more or less selective action upon *Amœba coli* as well as upon the lower forms of vegetable life, such as the algæ; that copper solutions are far better borne by the patient than quinine; that patients make a more rapid recovery under its use, gaining flesh and strength at least twenty-five per cent. more rapidly than under any other method known to the writer; and, most important of all, the cases stay cured, provided, of course, that treatment is kept up a reasonable time after the disappearance of the amebas from the stools.

As the cases treated by copper number over two hundred, it seems reasonable to conclude that the method is based upon sufficient ground to warrant its thorough trial by anyone interested in this subject.

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A REVIEW OF THE EVOLUTION OF THE MODERN SURGICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS.*

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In witnessing the finished removal of a fibroid tumor of the uterus by the surgeon of the present day, and in seeing the even after-recovery of the patient, we forget for the time the difficulties of some years past and the disaster and stormy recovery which was the lot of the patient who had the Spartan courage to undergo such an ordeal. It cannot but be of interest to glance briefly at some of the former difficulties and dangers necessarily encountered during the earlier surgery upon fibroids, and to review for a few moments the steps through which the present operations have been evolved.

As soon as it was demonstrated that the peritoneal cavity could be invaded with safety to the patient, surgeons turned their skill to the removal of ovarian tumors. These were the easier since their contents could be emptied, leaving a pedicle comparatively small and the more rapidly secured. It is to Ephraim McDowell, of Danville, Kentucky, that the honor is due of performing the first ovariotomy. He removed the tumor in his office in December, 1809, ligating the pedicle, dropping it back, and drawing the long end of the silk ligature through the lower angle of the abdominal wound. His individuality and personal courage were of the highest order. None were bold enough to attempt the removal of the solid tumors of the uterus until Kimball, an American surgeon of Lowell, Mass., in 1853 removed successfully such a tumor by ligating the thick stump, dropping the pedicle and drawing the end of the ligature through the abdominal wound. Operations of like character by Kimball and others who emulated his bold effort resulted so disastrously to the patients as to prevent for the time further efforts in this line. It was not until 1873, twenty years after Kimball's first operation, that surgeons began again to direct their attention to the removal of these tumors. During this interval efforts to benefit the sufferers from such neoplasms were confined to bringing about a premature menopause through removing the tubes and ovaries, it being found that in some instances such a removal caused a cessation of the hemorrhages and prevented a further growth of the mass. Unfortunately, however, that was not always true, and Tait himself, who appears to be the originator of this procedure, admitted that frequently the results were not attainable under a year and a half or two years. He further admitted that such a removal did not affect pedunculated fibroids or those of fibrocystic character. It was further recognized that it was impossible to remove the appendages in many instances, they being out of reach by being imbedded in adhesions or situated behind the solid mass and difficult to get at except through what was then regarded as an extensive procedure. Failure to accomplish the desired results of putting a stop to the bleeding, or effecting a cessation of the growth of these tumors by removal of the ovaries, and the inability to remove both in some instances caused surgeons to undertake again the removal of these masses. The method adopted was to deliver the tumor through a large abdominal opening and encircle the base with a clamp which was afterwards tightly screwed up. The tumor was then cut away, the clamp holding the stump outside of the abdominal opening until adhesions had formed and the stump enclosed between the jaws of the clamp had sloughed away. Spencer Wells and Keith are both prominently associated with this character of operation, Spencer Wells reporting, in 1878, twenty-four operations with a mortality of 62.5 per cent., while Keith, about ten years later, stated the death rate was 25 per cent. or higher, and says that the operation had done more harm than good.

This extraperitoneal treatment of the stump following hysterectomy was developed to the full extent by Pean, Hegar, Spencer Wells, Keith, Koeberle, and Bantock. The clamp was discarded, and in its place were substituted the pins and *serre-nœud* of Koeberle. Here the operation was practically the same as by the clamp. The tumor was delivered through the abdomen.

*Read before the West End Medical Society of New York City.

The wire loop was made to encircle it as far down as possible to avoid including the top of the bladder. The loop was then tightened as much as possible. Two pins were passed through the stump above the loop, the free ends of the pins resting on the abdominal wall and holding the stump in this position until all sloughing had ceased. By this method the lowest mortality was about one patient in every four operated on, varying from this to one in two or three dying. It continued to be the operation of election up to about 1890. The high mortality of from 25 to 50 per cent. resulting from the extraperitoneal fixation of the stump caused some operators to seek other means of avoiding these dangers, and while the majority of operators were still using the wire loop of Koeberle, Schroeder ligated the broad ligaments down to the cervix, removing the tumor by a wedge-shaped incision and sewing up the cervix. His death rate was high, one in three, chiefly from secondary hemorrhage. Zweifel followed shortly after by a modification of Schroeder's method, in stitching over the entire broad ligaments including the cervix. His results were excellent, and in 1889 he reported twenty-two successful cases.

The stump of the cervix left after removing the tumor was the focus around which all dangers centered. If ligated its circulation was cut off and sloughing resulted, or the ligation was not sufficient to control the bleeding from the cut ends of the uterine artery and subsequent hemorrhage resulted. At this juncture Goffe, in 1888, devised and carried out a method of making two distinct peritoneal flaps, anteriorly and posteriorly, ligating the broad ligaments, together with the stump of the cervix, uniting the peritoneal flaps and using the reamed-out cervix as a drainage canal for suppuration under the flaps. He reported three successful cases in 1890. About the same time, in 1888, Dr. Mary Dixon Jones, of Brooklyn, suggested the removal of the cervix as a logical way of avoiding the dangers of its retention. It is strange that this was not suggested earlier. Dr. Lewis A. Stimson also, in 1889, pointed out the importance of tying the ovarian and uterine arteries individually as a preliminary step to removing the uterus and its fibroids. By the suggestion of Dr. Stimson the tying of large masses in a single ligature, the former custom, was avoided, as was also the frequently resulting secondary hemorrhage. The transition period of the surgical treatment of fibroids may then be said to be from 1890 to 1896. During this time the *serre-nœud* of Koeberle ceased to have a general use, though Bantock advocated it as late as 1894, and Knowsley Thornton, and Malcolm as late as 1896 and 1897. The operations suggested by Zweifel and Goffe, though practised by some operators, were not the ones most generally adopted.

The removal of the entire tumor with the cervix was the method most generally chosen, and became widely accepted after the appearance of the detailed technique published by Christopher Martin in 1896. At the same time the important modification of the Zweifel operation was made in tying the uterine arteries, thus avoiding subsequent hemorrhage. While the development of these two methods, the one of leaving the cervix after the removal of the tumor, and the other of removing the cervix with the tumor, was being improved, another method of removing the small fibroid tumors through the vagina was being ably advocated and pushed to surgical excellence by Landau, Pean, Jacobs, and Segond abroad, and by Pryor and Polk of America. At the same time the suggestion of Goulet and Martin of tying the uterine artery was practised to some extent. The methods now in vogue are: Vaginal hysterectomy by Morcellation; total abdominal hysterectomy; supravaginal hysterectomy.

The removal of the fibroid diseased uterus through the vagina is restricted to tumors which have reached only such size as still to exist in the pelvis. Those that are larger and exist as abdominal tumors cannot with ease be attacked by this method. The vaginal operation is essentially foreign, being carried to great perfection by Landau, Pean, Segond, and Jacobs, and in America by the late Dr. Pryor, and at present it is ably upheld by Dr. Goffe.

A recent examination of the records of the Woman's Hospital shows that within the seven years ending in 1902, there were done one thousand seven hundred and eighty-three laparotomies and vaginal sections. It is interesting to note in these records the unconscious trend of opinion among those connected with this hospital during the time mentioned. In 1897, one hundred and sixty-nine operations were done through the abdomen and seventy-one were done through the vagina. In 1899, one hundred and ninety-nine operations were through the abdomen and fifty-six through the vagina. In 1900, two hundred and eighty-two operations were through the abdomen and twenty-six through the vagina. This gradual abandoning of the vaginal route in favor of that by the abdomen was an unconscious step on the part of all of us, and was the result of an effort to do more conservative work and to save all parts that could be of any possible service to the patient. The importance of saving parts of ovaries and parts of the tubes began to be appreciated to a greater extent. The ability to separate intelligently under the eye adhesions of the intestines was self-evident. The frequency of a complicating disease of the appendix and the inability to treat such conditions through the vaginal incision was recognized. The possibility and actual occurrence of adhesions of knuckles of intestines to the vaginal scars began to come home to us. Coe reported two such cases and collected eight others. Two occurred in the writer's practice; all were fatal. These are the reasons why the vaginal hysterectomy was abandoned except in special instances of the methods by the abdomen. I regard the supravaginal method as being much the more surgical.

In a series of three hundred and forty-five cases of supravaginal hysterectomy collected by Noble, representing the work of five American surgeons, the death rate was 4.9 per cent. as against 10 per cent. in one hundred cases of total hysterectomies. In a collection by Olshausen of eight hundred and six cases of supravaginal hysterectomy the mortality was 5.6 per cent. as against a mortality of 9.6 per cent. in a collection of five hundred and twenty cases of total extirpation. In the supravaginal operation there are no sloughing areas to keep clean and to heal by granulation. The vault of the vagina is left intact and its resiliency is maintained. The recovery of the patient is less painful, for the removal of drainage gauze is always attended with pain. The surgical care of the patient is also shorter than that following a total hysterectomy. Aside from the above reasons in favor of leaving the cervix when possible, another and very important element is that of

time saved. The removal of the cervix alone does not involve many additional minutes. There are, however, some descending branches of the uterine artery which supply the cervix and vagina; often they are poorly developed, and do not give any trouble when cut. They are, however, at times the source of much annoyance, and the time consumed in arresting all bleeding can add much to the gravity of the operation.

Under certain conditions the interest of the patient is conserved by doing a total hysterectomy and employing drainage. As such can be cited cases with adhesions and much raw oozing surface exposed, or of suppurating affections of the appendages, complicating the fibroid tumor in which some necrotic areas must be left, or, as stated, when the fibroid tumor has developed between the folds of the broad ligament, leaving a large oozing surface after removal. In all such cases it is necessary that the oozing be stopped; that the raw surfaces be kept from coming in contact with coils of intestine, and that necrotic areas be cut off from the general peritoneal cavity. This can be done by removing the cervix, introducing the free ends of gauze drainage strips through the opening into the vagina, and covering the areas in question with a light packing of the remainder of the gauze. After the edges of the broad ligament are united and closed over the stump of the cervix in a supravaginal hysterectomy, I think it unwise to drain the space between the peritoneal flaps and the cervical stump. Experience has shown that better results are obtained by closing the cut edges of the cervix. The method of draining is by divulsing the canal of the stump and passing through it into the vagina a small wick of gauze. As a result of this practice the intervening space occasionally becomes septic from an extension of an infection from below. With a rigid aseptic technique the infection of this space should never occur when drainage is omitted and the stump closed.

Concerning myomectomy, while the removal of these pathological growths from the uterus and leaving that organ intact is the acme of surgery and a result always to be sought, there is, however, a limit to such efforts, and an operation which ordinarily would be regarded as an exponent of conservatism can become most radical by endangering the patient's chances of recovery, or by leaving a uterus whose tissue is so degenerated in fibroid bearing as to subject the patient to a subsequent operation at a later time for the removal of new fibroids given birth by the diseased structure of the uterus. If there are only a few fibroids in the uterus, and if they can be removed without leaving a macerated uterine body in which, through the numerous sutures introduced, it is probable that the circulation will be interfered with, myomectomy is the operation of election. If, however, there is a possibility of such a circulatory interference and death of some portions of the uterine tissue it would be eminently hazardous to jeopardize the patient's recovery by such a procedure. In such cases the uterus should be removed with the fibroids.

At the time when the mortality attending the removal of fibroid tumors was high the benign character of these growths was made prominent in our minds, and the fact that the patient could live in passable comfort outweighed the dangers attendant upon efforts at their removal. Coincident with the decrease of the removal death rate a more complete knowledge of the character of these tumors was being obtained, also of their indirect effect upon other organs of the body and upon the general health of the patient.

We know that the menopause is not always the haven we had been taught to expect. In tumors in which the fibrous tissue predominates, making the hard variety, a contraction and shrinking in size is at times noticed after the cessation of the menstruation; but in those having the muscular elements predominating constituting the myomatous type, as also in the fibrocystis tumors and edematous tumors, the cessation of the growth does not take place at the menopause. We know also that the menopause does not come on in the presence of these growths as early as normally, in fact the cessation of menstruation is ordinarily delayed from five to ten years. Bishop mentions an instance in his own practice of a patient who, though sixty, still menstruated regularly.

In the progress of the growth of the tumor, disturbances in its circulation frequently result, causing adhesions to the organs adjacent to it, rendering its removal, when necessary from urgent causes, more dangerous to the patient. During the course of its development, not infrequently it extends between the folds of the broad ligament, dissecting up the pelvic peritoneum. The tumor, being solid, does not give as an ovarian cyst would do, and whether the development is under the peritoneum or intrapelvic it at times becomes wedged between the bony boundaries, and, pressing on the ureters, causes a pyonephrosis—a degeneration of the kidneys and ultimate death.

Fibroid tumors of the uterus do not exist alone as the only diseased condition present in the individual. There are commonly associated with them inflammatory states of the tuboovarian adnexa, of one or both sides. Such complications when going on to a purulent condition endanger within themselves the life of the patient. The long-continued drain through the profuse hemorrhages attendant upon a majority of fibroid tumors so deplete and weaken the physical state of the patient as frequently to be the indirect cause of her death through some intercurrent disease at some period of their existence. Fibroid tumors may undergo a necrotic change. Especially is this true of the submucous variety, and it was also not an uncommon sequel of the electrical treatment by puncture of some years past. The sloughing of these tumors caused by an interference in their circulation is one of the gravest complications that can arise in connection with their presence, rendering a fatal termination positive unless relief is obtained, and magnifying at the time of the operation the danger of their removal. Another form of degeneration of these tumors is the sarcomatous change known to take place among them.

Fibroid tumors may remain quiescent for a time and afterwards begin to rapidly increase in size, becoming fibrocystic or edematous. These changes in the light of modern pathology do not bode good to the patient. Graves, of the Free Hospital for Women in Boston, has devoted considerable time to the study of microscopic sections of these tumors. At a meeting of the Woman's Hospital Society of the past year, he stated that he had then examined thirty-three uterine myomata, of which three showed sarcomatous change. Of the entire number examined four were cystic or edematous. Those found to have been sarcomatous were from these four. He calls attention to the report of Menge, in which two sarcomata existed in sixty-three tumors examined. There were two fibrocystic tumors among

all examined; both of these showed the sarcomatous changes. There is, therefore, as he states, unquestionably a close relation existing between the various forms of degenerative changes taking place in fibroid tumors, whether fibrocystic, edematous, or sarcomatous, and a lighting up of an active growth in a tumor formerly quiescent should be regarded with grave concern. The inference that sarcomatous changes in fibroid tumors are as frequent as would appear from the reference to the examinations of Graves and Menge would, however, hardly be correct. Our present knowledge would indicate that such changes do not occur in over 1 per cent. or less of tumors removed.

The time is not so far behind us that the majority of those present cannot recall the size to which ovarian tumors were formerly allowed to grow before their removal was undertaken. One of the points then impressed upon students in the differential diagnosis of these conditions was the drawn cachectic countenance known as the "ovarian facies" of the patient having such a large tumor. We know now that this expression was due to a physical exhaustion largely as a result of a malignant change taking place within the tumor itself. The profession is now of one mind that all ovarian tumors should be regarded as malignant unless proved not to be so by removal and examination. As a result patients with ovarian cysts are counseled to submit to an early removal, and it is now rare that we come in contact with those of large size. In view of this well-established opinion among all physicians concerning the early removal of ovarian cysts, it is anomalous that there should be in so many of us the habit of procrastinating and temporizing when it concerns fibroid tumors of the uterus. They are as much a menace to the life and health of the patient. They are known to undergo malignant change, and on account of being solid and not adapting themselves to the adjacent structures as in ovarian cysts disease of the kidneys may result from ureteral pressure. Profound invalidism is a result of the profuse hemorrhages in tumors of a submucous and intramural type, giving rise to anemia and cardiac disease, and they are the cause of sudden deaths, as also of emboli and of pulmonary edema. Webster in a recent discussion of this subject before the Philadelphia Obstetrical Society, states that in 210 patients from whom he had removed fibroid tumors twenty-five had cardiovascular symptoms.

Bishop in his treatise on uterine fibroma gives a large collection of authenticated reports of deaths resulting from unoperated fibroid tumors of the uterus. He cites Winkel's statistics giving 10 per cent. of patients with such tumors, and who were not operated on, as dying either sooner or later as a result of the neoplasms. Noble, in a recent paper on the complications of fibroids, gives as a result of a study of a large collection of cases that had been operated on, that almost 15 per cent. of the patients would have died from changes in the tumor itself if operations had not been done, and that an equal percentage would have died from complications attending the tumor.

From such an array of facts it is hard to conceive how we can in conserving the interests of the patient, do otherwise than advise an early removal of such fibroid tumors as may exist, knowing that the sooner such a course is adopted the safer will be the operation and the greater will be the likelihood of saving the uterus and removing the tumors alone.

In closing I wish to accentuate my conviction that we conserve the interest of our patients when we advise the discarding of palliative measures and counsel the removal of fibroid tumors, whether they are giving rise to distressing symptoms or not. This belief is based on the knowledge that the death rate from the removal is now less than 1 per cent. in individual statistics, to 4 per cent. in combined statistics, while with patients who have fibroid tumors and are not given operation the mortality directly and indirectly the result of these tumors is at least 10 per cent. Further, in removing the intrapelvic smaller tumors there is less risk to the patient and a greater possibility of saving the uterus.

This is not, however, intended to include the small fibrous nodules recognized only by one with trained touch and occurring in women near the menopause. Such conditions need no interference unless they show a tendency to increase in size.

70 West Eighty-second Street.

THE ADMINISTRATION OF DRUGS TO CONCURRENTLY RETARD AND STIMULATE SYSTEMIC OXIDATION.

By BERNARD OETTINGER, M.D.,

DENVER, COLO.

In a previous communication[1] I took the position that although the presence of methemoglobin in the blood in sufficient amount (according to Ad. Dennig, 66 2-3 per cent.) results in death, nevertheless a methemoglobinemia of nontoxic proportions may exist, and hence that this blood condition must not invariably be regarded as deleterious to conservative metabolism. More than this, that I believed therapy empirically makes use of this blood change to aid in conservation of nutrition. Cited as examples were the use of amyl nitrite for angina pectoris, pyridin inhalations in asthmatic attacks, potassium chlorate administered for a limited period in acute infections, and its occasional use long continued and with success to prevent recurrent abortions, the bromine salts in epilepsy, the employment of iron as the perchloride in chorea minor and as used by the older practitioners in sepsis, Lugol's solution and iron iodide in scrofulous and cachectic conditions, potassium permanganate in anemia, quinic acid (yielding on decomposition pyrocatechin and hydrochinon) in gout, etc. It was pointed out that good accrued to the patient from slight methemoglobinemia effecting an increased oxidation of a selective character, viz., an oxidation through methemoglobin of intermediate products of metabolism which in diseased conditions accumulate in abnormal amounts in the blood, and at the same time an oxidation without effect upon the normal tissues. Such selective action occurs because the products of tissue catabolism being more powerful reducing agents than the tissues themselves are able to take oxygen from methemoglobin—a more stable oxygen compound than oxyhemoglobin—although the tissues cannot. Thus in face of the profession's belief that a methemoglobinemia in any degree is a toxemia, a serviceable empiricism yet enables us to utilize methemoglobin oxidation to effect elimination of toxic and inert elements of regressive metabolism as end-products. In connection with the foregoing hypothesis, I now advance a second to explain rationally the concomitant use of another class of drugs whose position as regards systemic oxidation is diametrically opposed to those previously considered.

Constitutional treatment of disease, both acute and chronic, finds continued reiteration in the use of iron, strychnine, quinine, and arsenic, to which, if chronic dyscrasias be alone considered, we may add phosphorus. Of these the specifically tonic effect of iron upon the blood and of strychnine upon the nervous system fully explains their employment, at least from the viewpoint of tried empiricism. But what of the remaining three? Quinine, arsenic, and phosphorus, possessing in common good repute as systemic alteratives, are nevertheless given individually under widely different indications. We give quinine for specific effect in acute malaria to kill the plasmodia, also for immediate effect in other acute diseases with fever, but here as an antipyretic; again in smaller dose in chronic dyscrasias (including malaria) with or without fever. We use arsenic in acute toxemias such as chorea minor and Graves' disease, also in chronic states of malnutrition (including malaria) where, as a rule, but not invariably, fever is absent. Further, we select arsenic for its stimulating effect upon the organs which produce corpuscular elements of the blood. We consider phosphorus if intent upon some specific effect upon bone tissue, otherwise as an alterative in chronic neural affections. Such indications (barring quinine in malaria) are, as regards each of these drugs, too generalized to give an impression of exactness. Some connection between them is established by the manner in which their several indications touch each other as it were, at tangential points. Yet without a relationship more clearly fixed the frequent concomitant use of these drugs for general tonic effect remains obscure. The explanation to my mind lies here—they possess in common the property of retarding tissue oxidation. As to quinine, Cushny,[2] referring to Binz's experiments, says: "The oxidizing action of drawn blood was shown to be diminished (by quinine). Immediately after its issue from the vessels, the unpoisoned blood undergoes a diminution of its alkalinity from the oxidation of some unknown substances at the expense of the hemoglobin, which is partially reduced. This acid fermentation is prevented by the addition of quinine to the blood. Even when pieces of tissue are added and the reduction of the arterial blood would ordinarily be much accelerated, quinine prevents or retards the change. A similar inhibition of the oxidizing action of the blood is shown by its failure to form the blue oxidation product of guaiac or to decolorize indigo when it is applied to blood along with quinine. From these experiments (and others) the inference is drawn that quinine hinders the action of the oxidizing ferment of the blood and tissues." That phosphorus and arsenic also retard tissue oxidation is an accepted fact. Orfila and Rigaut[3] showed that in dogs poisoned by phosphorus, putrefaction was remarkably retarded. The use of arsenic to retard tissue decomposition is common. The appearance of lactic acid, sugar, and albumin in the urine in phosphorus poisoning is attributed by Araki to insufficient oxidation, and Cushny says that this statement which makes lack of oxidation an essential part in phosphorus poisoning merely confirms the impressions of many earlier writers. The presence of the same products in the urine in arsenical intoxication, together with generalized fatty degeneration common to poisoning by phosphorus and arsenic, admits of the same explanation, viz., inhibited systemic oxidation. Now we know that in disease regressive metabolism is always increased, a condition not less true of chronic morbid states (considered relatively to assimilation) than of acute diseases with fever, although the fact may be more palpable in the latter. Against such increased catabolic tissue oxidation, the use of a substance (selected also in accordance with other systemic affinities since the action of drugs is not single) which would retard oxidation must be valuable because of its conserving effect. Yet in therapeutic dose such a drug, although effective, could not entirely inhibit an increased metabolism, which, therefore, would still produce an abnormally great amount of tissue products to be eliminated. That complete oxidation of these augmented intermediate compounds by oxygen furnished through the lungs is difficult, is shown by the dyspnea noted not only in fever conditions but also in chronic states of air hunger without fever, such as simple anemia, asthma, etc. Here the selective oxidation through methemoglobin comes in good stead in that only regressive tissue products are oxidized, the tissues themselves remaining unaffected. These hypotheses therefore serve to explain what at first glance may appear paradoxical, viz., the simultaneous administration of drugs to effect concurrent retardation and stimulation of systemic oxidation.

The theory advanced as to the rôle of certain oxidation-retarding drugs falls in with accepted medical practice, that relating to the manner in which methemoglobin producers are believed to act beneficently is entirely heterodox. Perhaps the consideration of both in relation to one another may help to gain for therapeutic methemoglobinemia some recog nition of its utility, and thus recall the same from its place of undeserved disrepute.

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317 Commonwealth Building.

Clinical and Experimental Study of the Action of Mercuric Cataphoresis in the Treatment of Cancer.—Amédée Granger declares that in mercuric cataphoresis we have a means of destroying not only the malignant growth, but the proliferations into the apparently healthy tissue, rendering the latter sterile and stimulating its cells to greater physiological activity. This last effect is due to the selective action of the current which forces the diffused chemicals along the paths of cancer proliferations. Cancer cells succumb more quickly to the diffused chemicals than do normal cells. It is capable of producing an autoinfection of the edges of the destroyed area, because no infected cells of germs can exist within the affected radius of its energy. After the application, the patients make rapid recoveries because they have not been weakened by the loss of blood attending the use of the knife or curette. Although using this method on most unfavorable cases, the writer has had only one death during an application and he is convinced that the method was not responsible for this fatal result. This method has been found of inestimable value as a cure or palliative for growths in the mouth. The cosmetic results have been excellent in the cured cases. Although the writer believes that some improvement and occasional cures may be expected from this method in inoperable cases, he is convinced that it should not be reserved for such cases, but should be used in operable ones as early as possible and before the local disease becomes general.—*Journal of Advanced Therapeutics.*

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TUBERCULOSIS AND PREGNANCY.

IT is not always an easy matter to decide what shall be done in any given case in which the two conditions mentioned above are associated, for although the question has been much discussed no definite conclusions of any consequence have been formulated. The principal reason for this uncertainty may be traced to the fact that it is a difficult matter to formulate a rule of action which shall have a general application, and it has been found that better success will attend a procedure which is based upon the indications present in each individual case. Tuberculosis is a serious complication of pregnancy, and as such it has been made the subject of careful study by numerous observers. These studies have supplied us with many valuable data from which certain helpful conclusions may be drawn. In order to make use of these in formulating a prognosis, a grouping of the cases already studied is necessary. This has been undertaken by Rosthorn of Berlin, who was assisted in the work by A. Fraenkel (*Monatsschrift für Geburtshilfe und Gynäkologie,* June, 1906). In a clinical material including 1,500 cases of pregnancy, a definite pulmonary tuberculosis was present in 25 (1.6 per cent.). The comparative frequency of tuberculosis in the general community would seem to imply that there must, in addition, have been many latent or circumscribed processes which escaped observation. In sixteen of the cases noted (64 per cent.) the general condition became worse, and in nine this took place very rapidly. The number of deaths was tion. In sixteen of the cases noted (64 per cent.) were particularly unfavorable in which the tuberculous process first appeared during pregnancy. In contrast to this it appears that in other instances in which a tuberculosis is already present one or even more pregnancies may occur without the pulmonary process being in any way unfavorably affected.

From our present knowledge of the subject it seems, therefore, reasonable to infer that pregnancy is relatively without influence in tuberculous women who have for several years experienced no advance of the disease and are considered practically cured, in whom the pulmonary signs are favorable, in whom the general nutrition is good, and when there has been no fever for over a year and no hemoptysis has occurred. Similarly, pregnancy may continue without danger in those cases in which there are evidences of a more recent but well localized apical process, without much elevation of temperature, which does not advance during this time. In certain instances, however, the prognosis is less favorable. That is to say, when we are dealing with an active florid process, accompanied by continued high fever, or when the fever, although not high, is continuous, even while the objective findings are not marked, and fails to decline under proper treatment. The prognosis also seems to be unfavorable when the disease is not restricted to the apices, but involves the middle and lower lobes of the lung or when the pulmonary lesion is complicated by disease of the heart, the urogenital system, the gastrointestinal tract, or other organs. Laryngeal tuberculosis also constitutes a very unfavorable complication.

It will be seen, however, that in all this we have nothing absolutely definite to guide us in any given case, and the individual factors must always remain the deciding features. Rosthorn's conclusions are formulated in the following general statements: In mild, as well as in moderate and severe cases, whether febrile or nonfebrile, it is advisable to observe an expectant attitude. The hygiene of pregnancy should receive particular attention, and the tuberculous lesion itself must be most carefully watched. Rest and climatic treatment are indicated, for the tuberculous process may be halted, or even relatively cured, during any period of pregnancy. As regards the interruption of the pregnancy, it has been found that abortion is much safer than the induction of premature labor, for a woman who survives the latter would, in most instances, have made even a better recovery if her pregnancy had been allowed to go to term. It is rarely possible to save either mother or child by this means, who would have succumbed without it. Abortion, however, must always be considered, according to Rosthorn, when there is present a destructive febrile process, whether old or recent, or even a process which is less severe, but is accompanied by certain complications, chief among them being laryngeal tuberculosis. In addition to these, relatively cured patients who, despite appropriate treatment, rapidly lose flesh, should also be looked upon as subjects for this operation. The child does not enter as a factor in these cases, because healthy children may be born even when the mother is markedly tuberculous, and the intrauterine transmission of the disease, if it ever occurs, is a rarity.

THE EDUCATION OF THE DULLARD IN THE PUBLIC SCHOOL.

INSTRUCTION of the individual, rather than of the class, should be the rule in the education of the young, but unfortunately there are many factors which interfere with this ideal, and they are of such a character that an effective remedy can hardly be hoped for. In one respect, however, it is essential that some distinction be recognized, and that is in regard to the mental equipment of children. Although generally assumed to be so in our public school system, this is by no means uniform, and the failure to note this fact is productive of both harm and distress. It is, of course, a difficult matter to draw an exact line between the children who are normally bright and those who exhibit some slight recession from this

standard, which is termed either stupidity or laziness, and which would force them into a class by themselves. Our classes, particularly in the public schools, are ordinarily too large to permit of any individual attention by the teacher to children who may be only slightly backward in their mental equipment, and yet this omission may be the means of starting the unfortunate little victims on a downward career. For the inability to keep up with their class excites their shame, and truancy, with its attendant evils, is the result. In addition to these mildly defective children, there are some of a more advanced type in whom other deficiencies are also present, which render them unfit to associate with normal school children, and to whom they often constitute a real menace.

It has become a common form of condemnation to say that such defective children should never be allowed in school, but, as pointed out by J. P. Haney in an article in the *Annals of Gynecology and Pediatry* for June, 1906, it would be far more proper to say that they should never be allowed out of school, or at least not until they have been taught some measure of self-control. As the author truly states, the education of these defective children cannot be undertaken in the ordinary class room. The training must be mental, physical, and moral, and must include hygienic treatment. It must be elemental in character and sympathetic in administration. Dr. Haney points to the necessity of securing special teachers for such work, and says that they should be paid equally with the best paid of the system. Women of a sanguine temperament, cheerful, optimistic, and quiet in manner, are to be preferred. The teaching must be individual, and therefore a class should be limited to fifteen members. Objective rather than didactic teaching should be followed, so that the pupils learn by handling things, and not by the hearsay of teacher or textbook. Mental operations should always be made subsidiary to manual operations, for the "joy of successful constructive achievement and power acts as a keen spur to interest and to mental development." Proper medical supervision and physical exercise are also two important factors in the successful education of these defective children, and in addition to this their morals and manners must also be cultivated.

It would seem that money spent in this way would be well spent, yet we find that very few of our large cities have made any provisions in their public school system for education of this kind. New York has successfully conducted a number of these classes during the past five years, but in only five or six others has a similar attempt been made to provide for defective children. The State, using the term in its sociological aspect, has been taught to be more solicitous than formerly in regard to infectious diseases and their power of physical contamination. It should display an equal solicitude towards its mental weaklings, conscious of their power of moral contamination. Dr. Haney's communication is of extreme interest and deserves a wide reading by all who are interested—and who is not—in the mental and moral training of our embryo citizens.

RECIPROCITY IN MEDICAL LICENSURE.

In his presidential address before the American Medical Association in Boston, Dr. William J. Mayo brought up the subject of reciprocity in medical licensure between the various States of the Union and urged that an agreement be reached between the State examining boards whereby a legal practitioner in one State might be recognized as such in every other State. Theoretically, this would be a very desirable state of affairs, but practically, at least until the older generation of physicians has passed away, it is impossible. It seems at first sight unjust that a practising physician or surgeon, in New York let us say, who has been twenty or thirty or forty years in the active exercise of his profession, and is a thoroughly competent man, perhaps with a national or an international reputation, is legally only a layman in New Jersey or Connecticut, and if he attempts to practise medicine in either of the adjacent States, or any other but his own, exposes himself to arrest and punishment as a lawbreaker. Many who had not given thought to the matter would be inclined to agree with Dr. Mayo that such conditions are "well-nigh intolerable and restrain the individual freedom guaranteed by the Constitution," though few, we think, are so ignorant of the history of their country as to follow him in the assertion that "the boundaries between the States are imaginary lines." If the State boundaries are imaginary lines so far as medical laws go, then they are equally intangible as regards other laws, and State legislatures and State courts become at once needless and expensive luxuries, and the sooner they are done away with the better for the taxpayers and the lawbreakers. The doctrine of States' Rights was shorn of some of its exaggeration in the '60s, but it exists just as firmly established now as then, and it will and must exist so long as the present Constitution of the United States is in force. The State boundaries are very real lines, delimiting sovereign States and opposing impassable barriers to the validity of many laws, among which are the laws regulating the practice of medicine. The president of the American Medical Association, or any individual member thereof, cannot pass this "imaginary line" in the practice of his profession without transgressing the law. And it is well that it is so.

We do not mean that we are opposed to reciprocity in medical licensure. On the contrary, we are in favor of the fullest reciprocity compatible with the laws of the individual States. But the laws of the States must be respected, and, as Dr. James A. Egan, Secretary of the Illinois State Board of Health, has well shown, in a paper read before the Illinois State Medical Society at its meeting in Springfield in May, 1906, these laws, in many if not all of the States, make unrestricted reciprocity impossible. In the case of Illinois, for example, the law distinctly states that a license to practise medicine shall be given only after satisfactory examination; and in making provision for reciprocity it further states that this shall be allowed only in case of certificates issued by other boards after examination. The old practitioner, that is, the one who was in practice before any medical law was passed in his State, and who was consequently licensed without examination, is therefore barred from practice in Illinois without an examina-

tion either in his own State, if that has a reciprocity agreement with Illinois, or in Illinois. This may work a hardship in individual cases, but so do many laws which are enacted for the good of the community and not for the benefit of the individual.

Illinois has, however, gone farther than any other State, so far as we know, to mitigate the possible hardships of the law in this respect. The State Board of Health, which is the examining board in Illinois, has adopted a resolution allowing a credit of 5 per cent. on the required 75 per cent. of successful answers, in its examination, for each five years the candidate has been in active practice. The reason for this rebate in the requirements is evident. A man who has been in practice for twenty or thirty years has naturally forgotten much in the elementary branches—useful and necessary as preliminary to a comprehension of his science, but not essential to the successful practice of his art. The Illinois State Board, therefore, makes provision for this lapsus by requiring less of the old practitioner, reducing his minimum by 30 per cent. if he has been in practice thirty years. We cannot imagine anything more fair or more considerate of the "old man" whose *wanderlust* impels him to change the scene of his professional ability. The State law insists, and we think wisely, upon an examination as a preliminary to practice, but Illinois has gone to the limit in reducing the hardships of this law to a minimum. If all the other States would follow the example set by Illinois, universal reciprocity would be as near to a realization as it ever can be, and the chimerical dream of federal licensure would be set at rest. The practice of medicine is not, and never can be, within the provision of our interstate laws; it is a matter to be regulated by the laws of each individual State; but the hardships resulting in individual cases from the enforcement of these salutary laws could be very materially mitigated by the universal adoption of some such regulation as that which Dr. Egan says has been adopted by the Illinois State Board of Health.

The Spontaneous Cure of Cancer.

Experimental research has apparently shown that there are certain immune forces existing in the body which are antagonistic to the growth of cancer. Mice affected with carcinoma have been reported as spontaneously cured in numerous instances, although skepticism is widespread as to the possibility of this phenomenon occurring in human beings. In a recent article on this subject by Gaylord and Clowes (*Surgery, Gynecology, and Obstetrics*, June, 1906), fourteen cases are mentioned which have been reported by various observers in recent years, and these are considered in connection with results obtained by the writers in animal experiments. For a number of years Gaylord has been a prominent worker in this field, and up to the present time over 3,500 mice have been employed in his laboratory for the experimental transplantation of a series of tumors. In one series, inoculated with a certain strain, 711 were accurately charted, and among these 101 cases of undoubted spontaneous recovery were noted. It seemed that the chances of spontaneous recovery in these mice diminished with increasing age and the dimensions reached by the tumor. The chances of recovery were apparently greater the slower the growth of the neoplasm, although there is some conflicting evidence on this point, and it is not fully accepted by the authors. An interesting fact, which was determined by these experiments, is that a mouse once recovered from carcinoma cannot be successfully reinoculated within a certain period, and from this it would appear that the animal under these conditions became endowed with a degree of resistance or immunity against cancer which it did not previously possess. Whatever the nature of this immunity may be, it does not appear to be cytolytic in action, "the histological picture indicating that the epithelial cells at the margin of the tumor are in some way robbed of their power of destructive proliferation, after which they undergo simple atrophy and gradual absorption by the surrounding connective tissue." Spontaneous cure of cancer in mice occurs, according to the estimate of these investigators, in about twenty-three per cent. of the cases. This frequency suggests to them that it may also be more frequent in human beings than is generally supposed. The interesting feature of their report, however, resides in the fact that we have here, apparently, sufficient warrant to continue the search for an anti-cancer serum, for the occurrence of a spontaneous recovery indicates that some force is present, or may be generated in the body, which is capable of terminating the disease.

Postoperative Parotitis.

In addition to the infectious types of parotitis, this gland may be the site of other inflammatory disturbances regarding whose origin we are still very much in the dark. Thus we meet with a variety of parotitis in women secondary to operations on the uterus or ovaries, which appears some six or seven days after a perfectly aseptic laparotomy without any apparent cause. The condition is not very common, but has usually been observed in the winter and may therefore, according to Morel (*Le Progrès Médical*, 1906, No. 13), be dependent upon the season. The affection is usually unilateral, and is most often seen on the right side, but it may also invade the other gland. Various theories have been proposed to account for this condition, the most likely of which assumes that some modification of the internal secretion of the ovaries by disease or trauma results in a diminution of the resisting powers of the salivary glands against infection. In the majority of cases the inflammatory symptoms subside without further complications, but sometimes suppuration results together with gangrene and sinus formation and the prognosis is always doubtful. The pus may burrow its way into the mediastinal space along the pharynx, or the auditory apparatus may become involved. Thrombosis of the large veins and the cerebral sinuses is also possible and has been noted together with severe venous and arterial hemorrhages. No means of directly preventing this unfortunate complication of abdominal operations has thus far been proposed, but in view of the fact above noted, that trauma of the ovaries may play some part in the production of the condition, it would seem wise to avoid as much as possible undue handling of these organs during the course of a laparotomy.

Slaughter-Houses in Philadelphia.—The Board of Health of Philadelphia announces that twenty slaughter-houses in that city, recently condemned as unsanitary, have closed permanently. Sixteen other establishments were improved by order of the board, and the owner of one slaughtering-house, who refused to obey the mandate to improve his plant, was ordered prosecuted.

News of the Week.

Cholera in the Philippines.—Dispatches from Manila announce that the cholera situation is steadily improving and that the number of new cases and of deaths is decreasing daily. Much satisfaction is expressed at the results obtained by the use of the vaccine prepared at the government laboratory, and it is stated that none of the natives of the infected districts who had been treated with the immunizing substance has contracted the disease. The Health Bureau supplies the vaccine free.

Malaria Among the Marines.—The United States cruiser *Columbia* recently sailed for Boston from Porto Rico with 300 marines on board, of whom 165 were suffering from malarial infection, contracted at Panama.

Typhoid Fever at Annapolis.—Three members of the new fourth class at the Naval Academy at Annapolis are down with typhoid fever which developed while they were on a practice cruise on the *Severn*, together with one hundred other plebes.

Typhus Fever in Philadelphia.—A case of typhus fever has been discovered in Philadelphia in the person of a young man recently arrived from Denmark. The patient was removed to the Municipal Hospital, where a fatal termination ensued. This is the first case of the disease in Philadelphia since 1888.

Chicago Public Health Matters.—According to the Bulletin of the Department of Health of the City of Chicago, during the week ended July 14, 498 deaths were reported from all causes, 27 more than for the preceding week, and 51 more than for the corresponding week of 1905. Acute intestinal diseases led the death causes with 68, followed by consumption with 58, heart disease with 40, violence, including suicide, and Bright's disease, each with 36, nervous diseases with 26, and cancer with 18.

A Chloroform Hallucination in Court.—A Parisian surgeon, who operated on a servant in the presence of her mistress, was accused by the servant of having kissed the mistress, the woman testifying that as she was recovering consciousness from the anesthetic she saw the act performed. The matter was brought up in a divorce suit, but as the result of the testimony of such prominent men as Brouardel and Debove, who pointed out the liability to sexual hallucinations of those under the influence of general anesthetics, the court rejected the evidence of the servant.

Maternity Statistics in Massachusetts.—In a bulletin issued by Chief Charles Felton Pidgin of the Massachusetts State Bureau of Statistics, it is stated that the United States census report, crediting Massachusetts with only 347 children to each 1,000 women, is misleading, since the Massachusetts Bureau considers that only married women should form the basis of computation. Estimated in this way, it appears that to every 1,000 mothers there are 3,958 children more than five years old. Foreign-born mothers have more children on the average than native mothers, but there have been twice as many deaths among children of foreign-born mothers.

To Test the Fuel Value of Alcohol.—An investigation into the possibilities of alcohol as a fuel for purposes of generating power is to be carried out by Prof. Charles E. Lucke, of Columbia University, for the United States Department of Agriculture. Some of the advantages attending the use of alcohol for this purpose are its lack of odor in combustion and the lessened danger from fire, since burning alcohol can be extinguished readily with water, while this is very difficult with gasoline and kerosene. The result of Prof. Lucke's work, together with a complete bibliography of the subject, will be issued by the Department of Agriculture in the form of a bulletin for free distribution on January 1, 1907.

To Enforce Pure Food Law.—The board appointed to formulate regulations for the enforcement of the recently enacted pure food law is to begin its work shortly. James L. Gerry, chief of the Customs Division of the Treasury, has been appointed as the representative of that department on the board. Dr. Harvey W. Wiley, chief chemist of the Agricultural Department, has been selected to represent that department, and Director North, of the Census Bureau, will represent the Department of Commerce and Labor.

Gift for Tuberculosis Sanatorium in Iowa.—Judge E. M. Carr of Manchester has offered to the State of Iowa a tract of forty acres of land, known as the "Devil's Backbone," if the authorities will use it for the erection of the State Hospital for Consumptives. The land has been used for years as a park, and is said to present some of the most beautiful scenery in the State. It consists of a high table land north of Manchester, around the rocky base of which runs the Maquoketa river.

Library of the University of Maryland School of Medicine.—Dr. Eugene F. Cordell, Professor of the History of Medicine and Librarian of the School of Medicine of the University of Maryland, announces the gift to the library of the Miltenberger collection of 949 volumes, bringing the total number of volumes in the library to 6,280. The library was founded in 1813.

A Fund for the New York Post-Graduate Medical School and Hospital.—A gift of $5,000 has been made to the New York Post-Graduate Medical School and Hospital by Mr. and Mrs. Edgar E. Brandon, of Oxford, Ohio, in memory of their son, William Templeton Brandon, to establish an obstetric ward in the Post-Graduate Hospital, where, in connection with scientific obstetrics, the complications and discomforts of pregnancy and of the post-partum period may be studied, and as far as possible alleviated.

Railroad Casualties.—In an accident bulletin issued on July 23 the Interstate Commerce Commission repeats its former opinion, that the block system is the best means for avoiding the occurrence of railroad accidents. The report covers the months of January, February, and March, 1906, and shows the total number of casualties to passengers and employees during this period to be 1,126 killed and 17,170 injured. This is an increase of 17 in killed and 52 in injured over those reported in the preceding three months. The number of passengers and employees killed in train accidents was 274, a decrease of 46. There were 1,921 collisions and 1,569 derailments, of which 289 collisions and 167 derailments affected passenger trains. The damage to cars, engines, and roadway by these accidents amounted to $2,924,785.

Danger in Cheap Bedding.—The public analyst of Hackney, England, has investigated the mode of manufacture of the cheap flock bedding sold in the poorer quarters of London, and has found that abundant opportunities for the spread of disease are furnished from this source. It is stated that filthy rags collected from dust heaps are shredded by machinery without any preliminary cleansing and are made into mattresses. One

gram of this flock yielded 7,590,000 colonies of bacteria, while only 6,400,000 were obtained from a like amount of sewage.

New Building of Children's Sanatorium Dedicated.—The new building of the Sanatorium for Hebrew Children at Rockaway Park was dedicated on July 22. The institution has 400 beds, and between 25,000 and 30,000 children from the tenements will be taken to the seashore during the season. A visiting staff of physicians has been appointed to aid the house staff in caring for the sick children, who are kept in the sanatorium until they have recovered. The sum of $1,600 was subscribed for purposes of maintenance.

A New Medical Association.—A conference was held at Kansas City, Mo., on July 16, of delegates from the States of Missouri, Kansas, Oklahoma, Arkansas and Texas, to consider the project of forming a new medical association to be called the Southwestern Medical Association. Five delegates were present from each State. One of the objects of the new organization is to secure greater uniformity in the registration laws.

Rutland County (Vt.) Medical and Surgical Society.—At the annual meeting of this society, held at Lake-View-in-the-Pines, Lake St. Catherine, on July 10, the following officers were elected: *President,* Dr. S. W. Hammond, Rutland; *Vice-President,* Dr. E. R. Clark, Castleton; *Treasurer,* Dr. J. H. Buffum, Wallingford; *Secretary,* Dr. C. F. Ball, Rutland.

Iowa and Illinois Central District Medical Association.—At the annual meeting of this association, held in Davenport, Ia., on July 12, officers were elected as follows: *President,* Dr. W. H. Ludwig, Rock Island; *Vice-President,* Dr. G. E. Decker, Davenport; *Secretary,* Dr. F. H. First, Rock Island; *Treasurer,* Dr. T. W. Kemmerer, Davenport.

The Maritime Medical Association.—At the meeting held at Charlottetown, P. E. I., on July 12, this association elected officers for the ensuing year as follows: *President,* Dr. A. B. Atherton, Fredericton; *Vice-Presidents,* Dr. T. D. Walker; Dr. M. A. Curry, Halifax; Dr. John Sutherland, Bedeque; *Secretary,* Dr. G. G. Melvin, St John; *Treasurer,* Dr. W. T. Farrish, Yarmouth.

Seaboard Air Line Surgeons.—The Association of Surgeons of the Seaboard Air Line, at the meeting held in Savannah, Ga., on July 14, elected the following officers: *President,* Dr. W. A. Monroe, Sanford, N. C.; *Vice-Presidents,* Dr. J. C. Wallace, Dade City, Fla.; Dr. H. M. Wilder, Charlotte, N. C.; Dr. E. H. Richardson, Atlanta; *Secretary and Treasurer,* Dr. J. W. Palmer, Alley, Ga. (re-elected).

Crawford County (Ill.) Medical Society.—At the twenty-sixth annual meeting of this society recently held at Robinson, under the presidency of Dr. Frank Dunham, the following officers were elected: *President,* Dr. L. R. Illyes, Heathsville; *Vice-President,* Dr. J. M. Mitchell, Oblong; *Secretary,* Dr. H. N. Rafferty, Robinson (re-elected); *Treasurer,* Dr. Frank Dunham, Robinson.

Death of Dr. Brouardel.—Dr. Paul Brouardel of Paris died on July 23, at the age of sixty-nine years. He was well known as a practitioner, writer on medical subjects, and medico-legal expert. For many years he was president of the consulting committee of the Department of Public Health, and he was made commander in the Legion of Honor in 1885. His death is ascribed to a chilling received some weeks ago while performing an autopsy in the morgue.

Obituary Notes.—Dr. Sophronia Fletcher of Cambridge, Mass., said to be the oldest woman physician in the country, died of pneumonia on July 19, at the age of ninety-nine years. She was in her usual health until a few days before her death. Dr. Fletcher was the first woman instructor at Mt. Holyoke College, where she held the chair of physiology over fifty years ago.

Dr. Rorert H. Theyson of this city died on July 18 of peritonitis in St. Luke's Hospital at the age of fifty years. He was a graduate of the University Medical College in 1890.

Dr. Edward G. Tufts of this city died suddenly on July 21 at the age of fifty-five years, He was born in this city, and was graduated from the University Medical College in 1881.

Dr. Walter B. Odiorne of Cambridge, Mass., died on July 14 at the age of thirty-three years. He was graduated from Harvard College in 1895, and received his medical degree from the Harvard Medical School three years later.

Dr. Elmer Beecher of Burlington, Vt., died on July 16, after a short illness, at the age of ninety-six years. He was born in Hinesburgh, and received his medical degree from the Castleton Medical School. He was State Senator from Chittenden County in 1860.

Dr. Joseph B. Hosken of Grand Rapids, Mich., died on July 10 at the age of fifty-five years. Dr. Hosken was born in Coburg, Ont., and was graduated from the University of Michigan in the class of 1875. He had practised in Grand Rapids since the year after his graduation.

Dr. E. G. Cawley of Haverhill, Mass., died on July 10. Dr. Cawley was born in Sanbornton, N.H., and received his medical degree from the Baltimore Medical School in 1900. He had practiced in Haverhill since 1902.

Dr. Robert H. Alison died suddenly of apoplexy at Ardmore, Pa., on July 16 at the age of fifty-nine years. He was born in Western Pennsylvania, and was graduated from Yale College in 1867, and from the Medical Department of the University of Pennsylvania in the class of 1869. In the early part of his career he was for a short time Port Physician for the city of Philadelphia. He was one of the physicians to Bryn Mawr Hospital.

Dr. David R. Streets died suddenly at Bridgeton, N. J., on July 15 at the age of fifty years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1880 and from Hahnemann Medical College in the class of 1880.

Correspondence.

THE D'ARSONVAL AND OTHER HIGH-FREQUENCY CURRENTS, WHAT THEY WILL DO.

To the Editor of the Medical Record:

Sir:—Doctor Piffard's recent very learned article on this subject in the *New York Medical Journal* is bound to attract widespread attention. In it he shows his mastery of what may be called the physics of electricity, and also gives the result of his clinical experience with the application of this particular current. His article is headed "The D'Arsonval and Other High-Frequency Currents, What They Are and What They Will Do." In my own heading I leave out "What They Are," because I know not. I have them bottled up in my office and am daily using them in the effort to discover. The electrician who established them for me gave as his own clinical experience that there were "lots of things nobody understands in this machine," and I agree with him perfectly.

There is one point, however, in which my own expe-

rience may supplement that of Dr. Pillard. He says, "Localized pruritus, especially of the genital regions, has ceased to trouble sometimes after a single application." Of course I have no doubt of the accuracy of his statement, but by far the most extensive, serious, and intractable case of pruritus ani treated by me in the last two years seemed to have been in great measure caused by this method of treatment. In the beginning when seen by a prominent dermatologist it was a simple neuritis without changes in the skin. A few weeks later, when seen by me after an intervening course of treatment with the high-frequency current in the hands of a third party, it was an intense eczema of the entire genital region; and this change was confirmed by the dermatologist referred to, and the relation between treatment and effect seemed obvious. The suffering was finally relieved and the lady cured only by free applications of the actual cautery.

Such a case proves nothing in the absence of more precise details as to the way the current was applied and all other particulars. It is given only as a personal observation and a caution.

CHARLES B. KELSEY, M.D.

44 EAST TWENTY-NINTH STREET, NEW YORK.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE "CHRISTIAN SCIENCE" CASE—APPENDICITIS AND GANGRENE—NASAL SPURS AND DEVIATIONS—UNIVERSITY AND COLLEGE—PRIZES—NATIONAL TEACHING OF HYGIENE—COUNTY COUNCIL'S PROPOSALS RE LUNACY AND FOOD INSPECTION—OBITUARY, GARCIA, RAMSDEN.

LONDON, July 6, 1906.

THE "Christian Science" case has ended in an unusual way, leaving everything unsettled. The trial of the accused for manslaughter by neglect, he being a qualified practitioner who had left the profession to study Mrs. Eddy's notions, lasted from June 27 to 30. The judge charged the jury that they were not trying "Christian Science." If a man stood in the relationship of medical attendant, he was bound to bring to the case care and proper skill. If the patient preferred this treatment and would have no other, it was not because his death resulted from his own obstinacy that someone else was responsible. The jury could not agree, and at last were dismissed and the prisoner released on his own recognizance. A new trial had therefore to be arranged, but on Monday the judge told the counsel in open court that in his opinion a conviction would be undesirable, the evidence for the prosecution not being sufficient, in his opinion, to bring home guilt. There are some curious points in the defense put forward. Counsel said the accused was a doctor in name only, as he had abandoned medicine and visited deceased only as a friend. To explain the fact that the hypodermic syringe and tablets of morphine and strychnine were in accused's possession when arrested, he said defendant was a victim to the drug habit and had been cured by Christian Science, and of course counsel attacked the medical witnesses for the prosecution in the usual shameless way. The accused himself, on examination, said deceased died of exhaustion, and that as soon as he gave up hope and Christian Science he died. He believed, he said in reply to the judge, that Christian Science cures all ailments, also all poisons, even snake-bite. Asked if it cured indigestion, he said "Yes," which produced laughter, as his first explanation of carrying drugs was that he suffered from it.

Many other statements were made in these lengthy proceedings, but though the exposure of fallacies may be served, it is clear that no light has been shed on the law concerning the relationship of doctors and patients.

At the Medico-Chirurgical Society on June 26th inst., Mr. J. D. Malcolm endeavored to show that in many cases a gangrenous patch in the vermiform appendix is the starting point of disease and might be independent of appendicitis, though often associated with it. He submitted cases and statistics showing that nearly one-third had perforations of the wall without any attempt to localize the mischief by adhesions. When inflammation began in the mucous membrane, he considered it safe to watch the case, but when the initial lesion was gangrene operation could not be too early, and so, too, in gangrene complicating appendicitis.

Mr. A. Doran mentioned a case in which collections of fat in the mesoappendix set up gangrene.

Mr. C. B. Lockwood said at least 85 per cent. or cases of appendicitis began in the mucous membrane. It was probable that bacteria found their way through superficial ulcerations, for a great deal of evidence would be required to negative the presence of ulceration. He did not admit spontaneous gangrene. The indications of appendicitis in the early stages were rising pulse, temperature, and leucocytosis.

Mr. A. Baldwin compared gangrene of the appendix with gangrene of both ends of intestine after end-to-end anastomosis, and considered bacteria to be the cause of both.

A paper by Dr. St. Clair Thomson was then read, describing his operation for submucous excision of nasal spurs and deviations. The mucous membrane was preserved intact, but the bone and cartilage effectually dealt with. The results in thirty cases were completely satisfactory.

At the prize giving of University College—the last prior to incorporation with the University of London—there was a pleasing ceremony in the presentation to the Council of the portrait of Dr. Carey Foster, as a memorial of his life work at the college, where he had been a student and afterward professor for over thirty years. In 1898 he became principal, an office which will lapse on the incorporation. A replica was presented for Mrs. Foster. In returning thanks, Dr. Carey expressed his belief that the incorporation would be a great step and improve the resources of the University, which have hitherto been dispensed in separate bodies. These had done excellent work, he declared, but divided they did not impress the public in a way to attract support. By union the University would become a great seat of learning, where the teachers would be drawn together. The prizes were then distributed by Dr. Carey Foster.

At King's College, Sir A. Rücker, principal of the University, distributed the prizes and then addressed the students. He said the bonds between the college and university were being drawn closer. King's was to be congratulated on what it had already done, and the throwing open of its laboratories to the students of the great medical schools was having a good effect; those students who came from other schools were members of the University. They would have a double loyalty to their College and to their University. The same state of things existed at Oxford and Cambridge, and the two loyalties were not incompatible.

From another speech on this occasion I learn that the negotiations between this College and the University are approaching a point where we may receive a definite statement. King's desires to incorporate as completely as University College, but there are obligations in its trust for which some provision must be made. King's is, in fact, a denominational college. University recognizes no sect or denomination.

At Guy's College, Sir Cameron Gull distributed the prizes and said his only claim to such a privilege was heredity, for his father took the deepest interest in Guy's, and anything in his own power to further its interests he would do. He reminded the students that they must be prepared for positions of great responsibility and to face, perhaps unaided, most difficult problems. So it was necessary that a school should bring up its students to be fully qualified, and they must keep abreast with the rapid advance of medical science. He wondered the public took so little interest in medical schools. Perhaps it was through that noisy section which tried to persuade them that vivisection was an evil. For his part, he believed vivisection was absolutely essential to full training in medical science. Guy's could speak freely on this matter, for the governors had never helped the school with hospital funds. But what would the hospital be without the staff, and where would they get the staff if there were no medical schools? If the public only realized the needs of the school they would be more generous.

Mr. Pearce Gould presided over a conference held last week on the national teaching of hygiene and temperance. He commented on the neglect in education of the vital subject of taking care of the body. The conference advocated the provision of competent teachers, who would travel through the country and teach the principles of hygiene in the elementary and secondary schools. Professor Sims Woodhead, vice-president, said the work of the association had been carried on deliberately and with most careful consideration. They wanted £450 in the first instance for the training of teachers, and he hoped those present would give not only moral but pecuniary support. Other speakers addressed the meeting on the effects of alcohol, and urged the importance of hygiene. One rather blamed medical men for recommending nursing mothers to keep up their strength by drinking stout—a fallacy which partially accounted for the increase of female inebriety.

The County Council, as I foreshadowed, has decided

to reintroduce the bill giving it power to establish and maintain receiving houses for lunatics. It was stated that in New York the experience was favorable, and had been adopted on the recommendation of a delegation to this country five or six years ago. Thus it seemed that while this Council was discussing the plan, New York had put it in practice. The Council also, on the recommendation of the Health Committee, decided to apply for authority to deal with the milk supply within the county. It was proposed to take samples at railway stations and elsewhere, and to deal with such as were unfit for consumption. It is also desired to compel dairymen to supply lists of their customers and of the sources from which they obtain their milk. There was some opposition to this proceeding, and it seems doubtful whether the new free trade government will permit so strong a measure of interference with free trade, even for the sake of securing wholesome food for the people.

The death of Manuel Garcia, which took place on Sunday in his sleep, will recall to you the manner in which we celebrated his one hundredth birthday on March 17, 1905. Eminent members of the musical and medical world then combined to render him their respects, and the King, his own sovereign, the King of Spain, and the German Emperor conferred decorations. The story of his invention of the laryngoscope need not be retold to-day; it will remain a part of the history of the instrument. His method of teaching and his views on voice training are as well known to the musical world. He was twice married, the second time to an English lady, who survives him. His son, Gustave Garcia, continues to represent his father's methods, as expounded in the "Traité Complet de l'Art du Chant."

Dr. Wm. B. Ramsden, lecturer on chemistry at Manchester University, when about to commence a lecture in the public health laboratory on Friday last, suddenly lost consciousness, and on being examined was found to be dead. He was a brilliant student of Owen's College, and after graduating was appointed on the staff of lecturers and was generally regarded as a most promising teacher. He has passed away at the early age of twenty-nine.

OUR PARIS LETTER.

(From Our Special Correspondent.)

THE DIAGNOSIS OF APPENDICITIS—THE SERUM TREATMENT OF TUBERCULOSIS—DEATH OF DR. ALBERT JOSIAS.

PARIS, July 1, 1906.

AT the Académie de Médecine several long and interesting discussions have been held on the question of false appendicitis. The matter was first brought up by Dieulafoy, who presented a communication in which he took the stand that many people suffering simply from colitis were operated on for appendicitis which did not exist. The author, although an advocate of the surgical treatment of appendicitis, believed that many operations were performed unnecessarily, owing to diagnostic errors. In support of this view he referred to eleven cases he had observed, which led to the following conclusions: There are patients suffering from mucomembranous enterocolitis, of which the typhlitis is the most conspicuous feature. In such cases the pain is most intense in the right iliac fossa, and then, owing to the common belief that appendicitis is a frequent consequence of enterocolitis, the typhlitis is overlooked and an operation is done for an inflammation of the appendix which does not exist. The appendix does not take part in these painful seizures in the right iliac fossa, which are caused by mucomembranous typhlitis and not by appendicitis. Besides, the removal of the appendix does not relieve the typhlocolitis, and the patients continue to have the same painful attacks as before. It therefore behooves us to check this rising flood of unnecessary operations by cultivating the art of more accurate clinical diagnosis.

Reclus disputed point by point the observations made by Dieulafoy. He first stated that little weight could be attached to the observations presented by this speaker, who had omitted, he said, to report the results of microscopical examination of his cases. As for the question of the relationship between appendicitis and typhlocolitis, it did not seem settled to the author, and he was unable to understand the assertion of Dieulafoy in this connection. To the eleven cases of Dieulafoy he opposed fourteen, in all of which there had been undoubted enterocolitis and in all of which also the diagnosis of appendicitis was verified by the operation and characterized by gross lesions, which rendered the use of the microscope unnecessary. It was not, he said, to cure typhlocolitis that the appendix was removed, as Dieulafoy seemed to believe, but in order to relieve patients suffering from appendicitis from the dangers of this condition. If the typhlocolitis were also cured, so much the better, but it was not this that gave the indication for the operation. Nevertheless, he declared that he agreed with Dieulafoy in regard to the difficulties sometimes presented in the diagnosis of chronic appendicitis, but he considered that it was not without danger to denounce in public "these errors of diagnosis and mistaken operations."

Richelot in his turn protested against the assertions of Dieulafoy, although he admitted that in recent years there had been some excess in operating. Le Dentu also considered that Dieulafoy's opinion was exaggerated, and stated that the coexistence of appendicitis and typhlocolitis was by no means the rarity that the former speaker had alleged. He had seen numerous cases of this sort, and it was very difficult under these conditions to determine which had been the original lesion, the appendicitis or the colitis, but he was able to refer to several instances in which appendectomy brought about a cure of the enterocolitis. As for the histological aspects of the question, evidently it was not right to assert that an appendix found healthy or almost so at an interval operation had always been so. There was also one region which always escaped observation, that is, the root of the appendix, or Gerlach's valve, and it was only fair to think that in many cases the inflammatory process might be restricted to this district. The diagnosis of typhlocolitis and of appendicitis was difficult, especially in chronic cases, but when the pain was very limited appendicitis was more probable. Even though present, however, it did not necessarily indicate an operation.

Reynier first pointed out the deceptive nature of McBurney's point, saying that typhlocolitis, appendicitis, salpingitis, etc., might all manifest themselves in the same way. He further stated that mucomembranous enterocolitis might be of appendicular origin, and that appendectomy might cure the condition, though it did not always do so.

Dieulafoy in replying stated that he had not intended to discredit surgery, but he had thought it was his duty to come forward, on account of the number of people he had seen operated on for appendicitis when they were suffering only from mucomembranous typhlocolitis, and because he had seen operative errors sheltered behind falses diagnoses. He held to his views, and to the surgeons who wished to consider the relationship between appendicitis and typhlocolitis he recommended the statistics of Potain. As for the cases he had cited, he considered them irrefutable; in all of them the histological examination had been made, and nothing had been kept back. On the other hand, the attacks of typhlocolitis had reappeared in the patients, and it was evident that what had been considered appendicitis had really been typhlocolitis. Errors of this sort were frequent.

Reclus reaffirmed his arguments, and said that in spite of Potain's statistics the coexistence of appendicitis and mucomembranous enterocolitis could not be denied.

Dieulafoy took up the discussion again to announce to the Académie that Dr. Duret, professor of surgery of the Faculté de Lille, had commissioned him to present a communication concerning the question then under consideration. Duret insisted that typhlocolitis was often mistaken for appendicitis, and agreed with Dieulafoy in saying that many people were unnecessarily subjected to appendectomy. The speaker closed by saying that the sole object of his communication had been to beg in the name of careful diagnosis that more pains should be taken in order to avoid operative errors.

The serum treatment of tuberculosis has been occupying the attention of the Académie des Sciences. We shall not report all of the papers relative to experimental serotherapy presented by Calmette, Guérin, Roux, Vallée or Arloing. Considerable interest attaches, however, to a communication presented by Lannelongue, who, together with Achard and Gaillard, has been experimenting in this field for the past seven years. At this time, when in Germany Behring is carrying out researches which are prematurely being considered as conclusive, it is only fair to point out that French science is not behindhand, and that though they may be less noisily heralded, the observations of French workers are not lacking in importance. Lannelongue, for example, has experimented on guinea pigs with a toxin obtained from human bacilli. The animals infected in this way were divided into two lots, a certain number of

controls being set aside, and the others were subjected to the action of sera obtained from the horse and from the donkey. At the end of 371 days 90 to 96 per cent. of the controls had succumbed, whereas of the animals treated with the horse serum there was a mortality of only 60 per cent., and of those treated with donkey serum a mortality of only 40 per cent. Several experiments already made with the donkey serum in dealing with human tuberculosis have shown that it does not cause febrile reaction and that it is well borne. The author described the case of a young girl suffering from tuberculous laryngitis, whose condition rapidly improved under the use of the serum.

The medical corps of the hospitals of Paris has suffered the loss of one of its most esteemed members, Dr. Albert Josias, who has died at the early age of fifty-three years. He was a member of the Académie de Médecine, an officer of the Légion d'Honneur, physician to the Hôpital Bretonneau, sanitary inspector of the City of Paris, and member of the superior board of health of the Department of the Seine. He was the author of numerous works relating principally to matters of sanitation and forensic medicine. He also had published important discussions of tuberculosis in children and the treatment of diphtheria. In 1896 he published a book on the therapeutics of childhood, and he was a collaborator on the "Traité de Thérapeutique," edited by Albert Robin.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE CULION LEPER COLONY—MANUAL LABOR FOR LEPERS—TRACING AN OUTBREAK OF CHOLERA.

MANILA, May 31, 1906.

THE construction of the Culion Leper Colony at its present location was begun in 1904, and it has now advanced to a stage where there are a sufficient number of buildings completed to provide accommodation for 600 lepers. Three hundred and sixty-five were removed from the island of Cebú and landed at Culion on May 27, 1906, and the remainder will be sent as soon as practicable. It is the intention to make the Culion Colony a model institution. It is already the only model and up-to-date town in the Philippine Islands, in that it is supplied with a proper water and sewer system. The water is obtained from a spring located near the sea level, and then pumped into a reservoir, the bottom of which is at an elevation of 260 feet above the sea, and about 130 feet above the higher parts of the leper town. The reservoir has a capacity of 80,000 gallons. The water is conducted by pipes to the Colony, and then through the various streets. An ample number of fire-plugs have been installed, and a sufficient number of bath-houses, closets, and wash-places for 800 lepers are already provided.

The colony is situated on a small hill, which slopes on three sides toward the sea, thus making the drainage a comparatively simple matter. In order to guard against the pollution of the bay, all sewers are conducted to a modern septic tank, the overflow from which is well filtered before it is permitted to flow into the sea. The Colony, at the present time, consists of about 100 houses constructed of nipa and bamboo, in the style in which the natives are accustomed to build houses. The average capacity of a house is from six to eight lepers. It is the intention to do all the cooking at one place, and for this purpose a large mess hall, in which 300 persons may be seated at one time, has been provided. By having only one kitchen greater economy can be practised, and the cost of subsistence reduced to a minimum.

It is hoped that the Colony can be made self-supporting to a large extent, by inducing the lepers to catch fish, hunt the wild hogs, deer, and other game which abounds on the island. The proposition of having the lepers act as herdsmen in raising cattle for the market is now receiving consideration. This latter occupation would require very little manual labor, and it is thought that there would be but slight objection to such cattle being sold in the open market, provided they were slaughtered at once.

Of the lepers found in the Philippine leper institutions, not more than one-third are capable of any manual labor, and the efficiency of this latter number is seriously impaired owing to the absence of fingers and toes, various contractions of the muscles, and the atrophy of the bones, etc., so that about three or four of these would be required to perform the labor of which the average sound laborer is capable. It will be seen, then, that after the lepers who are capable of doing work perform the necessary tasks incident to providing for themselves, as, for instance, cooking food, waiting on table, sweeping streets, making minor repairs to houses, fire drill, etc., etc., that very little surplus labor will be left which can be devoted to their own support.

In order to make the life of the lepers as pleasant as possible, a large amusement hall has been provided, where they can have theatricals and other diversions. A sufficient number of band instruments for a band of thirty pieces has been purchased for them. It is the intention to permit them to organize a municipality, for which they may elect their own officers, appoint their own police force, etc., etc. It is also intended to give them as much liberty of movement as possible. This is feasible because the entire island has been set aside for lepers, and escape from it would be difficult. At any rate, it is presumed that the inhabitants of the nearby islands will not welcome them to their shores, and if any lepers should land they would probably return them to the Colony.

In view of the fact that births have been extremely rare in the leper institutions of the islands, it has been decided not to separate the sexes, at least for the present.

The chain of evidence which has been collected for the purpose of showing the origin of the recent outbreak of cholera in Manila is now more or less complete. It appears that at the Manila and Dagupan railway station a pail system has been maintained, and the fecal contents of the pails dumped into a nearby canal. It is presumed that an individual with cholera organisms in his stool arrived at the station from one of the infected provinces, and used one of these pails. After the outbreak of the cholera commenced it was soon noticed that practically all the cases occurred among persons who lived on the streets which ran along either side of the canal. A bacteriological examination of the water was immediately made, the result of which showed that cholera organisms were undoubtedly present. The water from a number of other canals has been examined, but with negative results. Immediately afterward a heavy rain occurred, which thoroughly flushed the infected canal, and since that time the cholera has ceased, with the exception of an occasional isolated case that is attributed to eating infected vegetables that are grown in the vicinity of the canal and probably have been sprinkled with its water.

Progress of Medical Science.

Boston Medical and Surgical Journal, July 19, 1906.

Therapeutics Based on Pathological Physiology.—R. C. Cabot offers the following conclusions: (1) Treatment based on pathological physiology is not the best type of therapeutics yet worked out; neither is it the worst. It occupies a postiion intermediate in value and efficiency between etiological treatment (or that which removes the cause of disease) and symptomatic treatment, which simply smothers a symptom. (2) It is based on theories of the nature and trend of the body's reaction against the *materies morbi*, theories which, like all valuable hypotheses, must be constantly and empirically verified. (3) Empiricism is not a type of treatment, but an essential element in all treatment. Nevertheless: (4) Theory is invaluable because it furnishes the motive power of most scientific progress; empirical verification guides but does not initiate this progress. (5) Treatment that aims to remove the cause of disease should neglect very largely the individual factors in the case, but treatment based on pathological physiology can be effective only by ascertaining and respecting the physical and psychical peculiarities of each individual and the unique relations in which he stands to his family, his work, his education, his place of residence, and many other aspects of his environment. (6) Etiological or symptomatic treatment must first ascertain at what spot in the organism the trouble resides. To that spot it then directs its energies. But treatment based on the individual's manner of reacting to the disease must study the whole individual so far as it can discover him. *Journal of the American Medical Association, July 21, 1906.*

Anastomosis of the Vas Deferens.—G. F. Lydston says that in a certain, as yet undetermined, number of cases it is possible to reestablish the continuity of the vas deferens after a previous vasectomy has been performed. The chief indication for this is in cases of accidental severance of the vas, but in case of double resection, followed at a longer or shorter period by anastomosis, there are two chances of restoring fertility. One

or the other vas is liable to regain patency. The time that should elapse between the vasectomy and the anastomosis varies, according to the improvement in the condition for which the vasectomy was performed. The method of anastomosis consists in excising the nodule at the point of resection, bringing the two ends together and uniting them after having inserted into their lumen a strand of large-sized silk-worm gut, the proximal end of which is passed out by the threaded needle about an inch and a quarter above the anastomosis and out through a puncture in the skin a little above the upper angle of the wound. The object of this silk-worm gut thread is to preserve the continuity of the lumen, and it should be removed at the end of a week. A portion of the free edge of the fascia, which was divided to expose the parts, is wrapped closely around the vas so as to close it in completely. The fascia is closed with fine catgut and the edges of the scrotal wound brought together with fine silkworm gut or horsehair.

The Poison of the Meningococcus.—A. P. Ohlmacher, by experiments on horses, has demonstrated the existence of a powerful poison from the meningococcus, the effects of which are best manifested by intravenous injections of a filtrate through paper of a tricresolized extract of a three to six-weeks' culture on a glucose-chalk-bouillon. The symptoms produced are restlessness, increase of pulse, temperature, and respiration, profuse perspiration, together with the special nervous symptoms of progressive asthenia, tremors, clonic convulsions and transient opisthotonus, excessive irritability, spasms being caused by noises or unexpected touch, and finally death from exhaustion. The nervous manifestations were best produced by the special culture product above mentioned, but ordinary broth cultures were also toxic; sufficient subcutaneous doses of the special extract, besides causing fever and extensive local swelling, also gave rise to the nervous symptoms. The poisonous effect was absent when the fluid was filtered through unglazed porcelain bougies or balloons, but was present and active in the product of filtration through Berkefeld candles or paper.

Radium in Surgery.—R. Abbe has employed very powerful radium applications in 127 cases, covering a large number of conditions. The greatest interest is in the morbid growths, such as lupus, epithelioma, sarcoma, etc., and he remarks here that in every case in which he has laid a radium tube on a wart the growth has rapidly disappeared by retrograde degeneration of the cells composing it. In thirty-five cases of lupus and epithelioma all have shown improvement, and twenty patients have recovered, at least for the time. In the graver cases of cancer the results are less favorable. Of eleven operable cases tested, six patients were subsequently operated on. In the other five the operation was deferred on account of improvement. He thinks that possibly with the use of radium in some other way than with the thin glass tubes employed, better results may be obtained. In one type of grave cancer, mammary cirrhus, the agent seemed to promise good results. In three cases, in which the breast was subsequently amputated, microscopic examinations showed characteristic retrograde changes, which may explain the improvement in four others similarly treated. In sarcoma the results were rather brilliant and several cases are detailed. In two cases of spindle-celled sarcoma there was only seeming arrest, but no retrograde changes so far as observed. In overdosage, or with too long exposures, radium rays are destructive rather than alterative, and he has seen toxic conditions aroused by overzealous methods. Experience in goiter encourages further experiment, but not positive claims as to specific benefits. In pigmented moles removal by dry necrosis can be produced, and results possibly better than by the other methods. He sums up his conclusions as follows: 1. Radium action resembles that of Roentgen rays. 2. It differs specifically, and will cure some cases promptly which resist the latter. 3. It is applicable to the interior cavities of nose and mouth inaccessible to the Roentgen ray. 4. It is curative in most superficial epithelial cancers and lupus. 5. It has failed of curative action as yet in forty test cases of grave internal cancers. 6. It promises interesting results in other surgical conditions under study.

Uncinariasis in Mississippi.—C. C. Bass has obtained a record of 206 positive cases of uncinariasis in Mississippi, and of 30 in which the diagnosis was not so positive. These cases altogether represented 23 of the 76 counties of the State, and in 12 more ground itch was reported. He believes that the State is very widely affected, and suggests a legislative inquiry as to the prevalence of the disease and the best means to disseminate knowledge in regard to it, so as to check its ravages. He also recommends a method of finding the ova for diagnosis based on the fact that they will float on a solution in which the balance of the feces will precipitate. Without giving exact figures of specific gravity or saying what is absolutely the best solution, he claims that for practical work nine-tenths of a saturated solution of sodium chloride will suffice. He hopes to work out the technic more fully and to give results in a future publication. The article is accompanied by several tables and charts.

New York Medical Journal, July 14, 1906.

Death from Suppurating Tonsil.—V. Kenerson reports one case of fatal sepsis following a tonsillar suppuration. The patient was a woman of thirty-three years, with the typical local appearance in the mouth of a left-side quinsy. Foul pus was evacuated, but reaccumulated in twenty-four hours and was again evacuated. For the next two days masses of sloughing tissue came away and she began to have cyanosis and dyspnea. Again pus was evacuated, causing her to rally somewhat, but she again became cyanotic with so much dyspnea that a tracheotomy was decided on, but before it could be done she was unconscious. The tube was inserted, however, and she was kept alive for some hours, but finally died from the general sepsis.

Deformities of the Trunk in Children.—L. C. Ager divides these deformities into the following classes: (1) Fractures of the ribs, vertebræ, or pelvis, generally evident from the history and by direct examination. (2) Deformities due to inflammatory exudates and abscesses. This class includes inflammation of the various glandular structures, the rare external observations of internal pus showing as from the pleural cavity, liver and psoas disease, fracture calluses and periostitis of the ribs following typhoid. (3) Hernial. (4) Abnormal size, shape, or position of any internal organ may cause an external protuberance. In the chest we find precordial bulging referable to advanced cardiac hypertrophy; in the abdomen we may not always be sure of the exact cause, as many organs are there situated, which may give like symptoms. (5) Large amounts of fluids in the various body sacs (pleura, pericardium, abdomen) may give external manifestations similar to those classified under (4). The author discusses the various classifications above outlined, giving particular attention to spinal and chest deformities. Nothing new is brought forward.

Differential Diagnosis and Clinical Significance of Peritonitis.—G. P. La Roque discusses this question from the academic standpoint, enumerating as diagnostic symptoms the association of pain, tenderness, muscular rigidity, constipation, vomiting, and, as a rule, disturbances in circulation and temperature. In the diffuse fulminating form of peritonitis, we have a sudden overwhelming toxin infection resulting in diffuse peritoneal irritation, reflex shock and profound sepsis. In this form, the earliest symptoms are referable to the irritative factor, viz., pain, tenderness, rigid, spasmodic, abdominal, and diaphragmatic immobility, absent peristalsis with absolute constipation and general tympany, persistent, easy, regurgitant vomiting, and rapid, running, wiry pulse. The onset of shock may obscure the pain and tenderness, still more accelerate and enfeeble the pulse, and rarely counteract the development of fever. Extreme collapse and prolonged, excessive nerve irritation may produce final paralysis of sensation and muscular contraction, with disappearance of pain, tenderness, and spasmodic rigidity. The vomiting, constipation, tympany, and distention rigidity generally persist and are progressive in intensity. In many cases of puerperal peritonitis and pneumococcic infection in children, constipation may be replaced by exhausting septic diarrhea. Leucocytosis, except at the outset, is valueless. Fever may be wanting. The author enumerates the various retro- and infraperitoneal lesions which may confuse the diagnosis, and points out some of the characteristic features of each. This part of the paper covers only the familiar ground of any good surgical treatise and does not need reproduction here. Concerning subdiaphragmatic abscess, the author notes as its most common cause perforation of the posterior wall of the stomach or duodenum. Other possible causes are abscess of the liver, appendicitis, splenitis, pancreatitis, and abscess, externally, but rarely in the pleura. The cardinal symptoms are those of localized peritoneal abscess formation associated with marked respiratory disturbance. On account of its subcostal location a tumor can only exceptionally be discovered. The belly and particularly the hypochondrium is rigid, tender, and distended. The costal arch is markedly tense and instinctively immobile. Hiccough may occur but is in no way characteristic. Constitutional signs of hectic fever are severe. The diaphragm is pushed upward and the spleen or liver (depending on the loca-

tion of the abscess) is in rare cases depressed. Since the great majority of subdiaphragmatic abscesses result from gastrointestinal perforation, they, as a rule, contain gas. Amphoric sounds may be elicited by auscultation and percussion. Differential diagnosis must be made from hydropneumothorax.

The Lancet, July 7, 1906.

A Means of Checking the Spread of "Sleeping Sickness."—According to J. L. Todd, this malady, which is essentially a human trypanosomiasis, is widely spread over Africa and is spreading rapidly. This contention is supported by the study of certain maps, which the author presents in his paper. He believes that each of the eight varieties of the tsetse-flies ought to be regarded as a possible carrier of the disease, that is, of the *Trypanosoma gambiense*. The epidemiology of the disease shows that its natural spread is slow, but that it may be carried rapidly by human intercourse along the recognized routes of travel. The measures recommended for preventing the spread of the disease are: (1) the establishment of medical posts of inspection along the trade routes leading from infected to uninfected districts; and (2) the removal of infected persons from posts in uninfected districts to places already infected. If success is to be obtained the application of these measures must be thorough. Cases of trypanosomiasis, though apparently healthy, may be detected by their enlarged glands, and we may expect to check the advance of the malady by the serious application of quarantine measures dependent for their efficiency upon cervical gland palpation.

A Note on the Action of the Serum of Various Mammals on the Bacillus Pestis.—G. Lamb and W. H. Forster detail the results of their experiments with the serum of man and the following animals: Monkey, horse, ox, sheep, dog, goat, rabbit, guinea-pig and rat. Technic is described in full. From their tabulated results no evidence of bactericidal power can be discovered. The authors state that, on the contrary, it was found that the serum of all the animals examined proved to be as good a medium for the growth of *Bacillus pestis* as ordinary nutrient broth. Four observations were made with the serum of each animal, but as the result in all cases was consistently negative, so far as bactericidal action was concerned, only one experiment is recorded for each animal. From these experiments it would seem that normal mammalian serum is devoid of any bactericidal action on *Bacillus pestis*. The explanation of the immunity enjoyed under natural and artificial conditions of infection by some members of the order of mammalia must be sought in some other direction.

Motor-Driver's Spine.—A question mark follows the title of W. J. Burroughs' paper, making it appear that he himself is a little doubtful whether or not he has discovered a new occupation neurosis. The salient features in the case described by him are as follows: His patient was a healthy man of thirty-four years, temperate and without any evidences of syphilis. After an unusually hard day in driving a heavy motor-car, which required repairs on several occasions during the journey, he complained of acute pain in the right hip, dull ache across the loins, and inability to move the right leg. Pulse, respiration, and temperature were normal. Eyes were normal. Tenderness on pressure was felt to the right of the third and fourth lumbar spines, extending outward about six inches over an area about three inches wide. The whole of the right leg was in a state of spastic rigidity. No bladder or rectal symptoms. The patellar reflex in both legs was exaggerated but much more markedly on the right side, and on both its production caused shooting pain referred to the lumbar region. The skin of the whole of the right leg was hyperesthetic, this state being more pronounced upon the inner surface of the limb. The drawing of the pulp of the forefingers slowly up the sole of the right foot caused great pain, and the same action conducted quickly made the patient cry out loudly and draw up the foot, an action he was quite unable to accomplish voluntarily. Ankle clonus could not be obtained. The condition of the left leg apart from the increased knee-jerk was practically normal. On the following day the pain in the hip was slightly less, though its presence had given the patient a bad night. The muscular rigidity had considerably decreased, but girdle pain coming on at intervals and starting at a spot corresponding to the third and fourth lumbar spines, was complained of. The patellar reflexes were almost unobtainable, and the sensation of the right leg was greatly diminished. The pulse, the respiration, and the temperature were normal. On the next day the knee-jerks of both sides were absent. The rigidity had disappeared, and complete anesthesia of the whole of the right leg with a diminution of sensibility to heat and to cold existed, sensation in the left leg remaining unimpaired. From this time on there was a gradual improvement, and in about three weeks from the appearance of his initial symptoms he was able to be up and out of doors. The author's diagnosis was a "localized myelitis." He calls attention to the case because, in his own mind, there seems little reason to doubt that the cause was intimately connected with the conditions under which a comparatively new occupation is conducted, and although he is unprepared to say whether the pathological state produced was the direct outcome of the constant jarring to which a driver of one of these vehicles is exposed, or to the excessive muscular effort required of the patient on the particular day on which he developed his malady, the fact of his illness remains, and it would be interesting to learn if similar cases have come within the experience of others.

British Medical Journal, July 7, 1906.

Cancer.—Sir S. Wilks discusses some of the present-day views on the nature of cancer as learned during the last half-century by the gradual perfecting of the microscope. Years ago the author came to the conclusion that cancer cells had no characteristics distinctive enough to allow them to be marked off from others; indeed, they were no more in most instances than ordinary embryonic cells. His theory of cancer was that, if the cells formed from the granules appearing in the original blastema did not follow out their respective life histories, so as to produce natural tissue, but continued merely to increase in number without developing, they formed a mass or tumor, and to this the name of cancer was given. They corresponded in form to the cells of malignant growths, and therefore the latter were nothing more than masses of embryonic cells. It was a purposeless growth, and therefore might, in contradistinction to benignant, correctly be styled malignant. The cells were usually contained in a newly-formed matrix with a good supply of blood-vessels. If the new material showed any attempt to grow, then the cell might become elongated until a simple fiber was formed. In this way he made a scale beginning with the cancer or simple cell growth, and so passing on with its development until he reached the simplest and most innocent pure fibrous tumor. In a later paper the author called attention to the fact that these cell masses differed according to the part of the body in which they grew; thus, cancer on a bone might contain osseous matter, cartilage, or a myeloid material; if from the choroid of the eye, would be melanotic, etc. Moreover, all these local characters might be propagated to other parts. These facts have always made the author feel skeptical as to the etiological value of any definite specific germ.

The Opsonic Theory and Its Practical Application to Medicine and Surgery.—G. Ross gives a clear and succinct account of the development of the theory of Wright and Douglas, regarding the nature of "opsonin," the substance essential according to this theory for phagocytosis, and acting not on the leucocytes, but combining with the microorganisms and preparing them for the leucocytes. The technical description of the clinical methods concerned cannot be reproduced here. The convenient mode of expression is to speak of the "opsonic index" in a given patient. The rules for the computation of the index are given in the original paper; *e. g.* when we say that a patient has an opsonic index of 0.5 to staphylococcus, we mean that his blood plasma contains but half the normal quantity of those opsonins which are essential to combating a staphylococcus infection successfully. The treatment of a bacterial infection consists in increasing the antibacterial substances of the blood by inoculating the patient with dead microorganisms of the same species, causing and maintaining the morbid process. The author gives his experience in certain cases of tuberculosis, both with a view to therapeutic results and to differential diagnosis. By this method he has been able to rule out tuberculosis in certain suspicious cases proving it to be, respectively, malignant disease of the lung, chronic bronchitis with emphysema, bronchiectasis, and general debility. The author, furthermore, expresses a most enthusiastic faith in the opsonic theory, and shares in the dictum of Wright that "we have, in the power of raising the antibacterial power of the blood with respect to any invading microbe, out of all comparison, the most valuable asset in medicine."

Opsonic Index of Tuberculous Patients Undergoing Sanatorium Treatment.—G. A. Crace-Calvert sums up

our present knowledge in this respect in the following propositions: (1) In slight, early cases the index appears to be above normal. (2) In acute cases it fluctuates greatly from day to day. (3) In chronic cases it appears to be below normal. (4) In sanatorium "cures," the index appears to be variable. "Undoubtedly," says Calvert, "a high index is of value if it can be maintained. A fluctuating index is not of much value. It must, however, be beneficial to the patient to have his diseased tissues bathed in a serum which is rich in opsonins, because if the bacilli are more easily taken up by the phagocytes, it gives him a better chance of combating his disease." In two instances Calvert has noted that after a few inoculations bacilli have not only diminished in numbers, but have also become "clumped," being broadcast before, and, as far as we know, the "clumping" shows that the bacilli are finding the conditions adverse to them. This point shows a possible relationship between the opsonins and agglutinins. It is proven that the new Koch tuberculin TR raises the opsonic index. There may be initial lessening of the resistance power. This is called the "negative" phase, but it is succeeded soon by its opposite. By careful spacing of the injections one positive phase can be made to follow another, with only a very short negative phase between. A second inoculation must never be given before the negative phase of the preceding one has passed off, for negative phases may accumulate, so to speak, and lead to a prolonged condition of low opsonic power. Hence our requisites are a frequent determination of the index and appropriate dosage of the TR. The greatest benefit from inoculation is to be obtained in those chronic cases of phthisis which with a fair amount of disease and a fair amount of cirrhosis and healing, are nevertheless practically stationary, whether they have tried climatic or sanatorium treatment. As we have seen, the index in such cases is usually below normal, and if we raise it by inoculation we probably give the patient another impetus, which, by maintaining his serum in a good resisting condition, may enable him better to combat the disease and lead less the life of an invalid. ,

The Electromotive Changes in Heart-Block.—The patient of G. A. Gibson, on whom observations were made, was a man of fifty-six years, with bradycardia. Examination with the fluoroscope showed that the auricles contracted three or four times for each ventricular systole. The electric variations were studied by means of a capillary electrometer. Leading off from the basal region of the precordia to the acid, and from the apical to the mercury, the usual diphasic movements of the capillary column were clearly seen preceding the apex beat, and evidently resulting from ventricular systole. But in the interval between these movements other smaller waves were distinctly seen, and can only be attributed to the systole of the auricles. As these latter movements were small, as observed by the direct method with the microscope, it was impossible to be certain of their exact character, but they seemed, like the ventricular, to be diphasic. When thrown upon the screen by means of the projection microscope, they were obviously diphasic in their character.

Berliner klinische Wochenschrift, July 2, 1906.

The Treatment of Pulmonary Tuberculosis by Hyperemia.—Leo discusses this subject and reaches the conclusion that the attempt to treat pulmonary tuberculosis by the artificial production of hyperemia of the lung is a rational measure. Of the various means that can be employed to produce this hyperemia, those causing passive congestion are the only form that can be considered. This can most simply be secured by placing the patient in the recumbent position, with the thorax low down, the head slightly elevated, and the legs very much so. Even at night the upper portion of the body should be depressed and not elevated, and the daily duration of this posture should be gradually increased. A tendency to hemorrhage is an absolute contraindication to the method. The author has employed this plan in thirty cases, and considers that on the whole the results are encouraging, though certain disadvantages were noted in a few instances. The author states that further observation must show whether the suction apparatus of Bier can be applied for this purpose or not, and he also proposes to try the effect of tuberculin as an adjuvant to the treatment.

Experimental Observations on Blood Pressure in Nephritis.—Brodzki discusses the various opinions current in regard to this subject, and reports the results of experiments on rabbits made to consider especially the following two points: (1) Whether nephritis of itself causes a rise in blood pressure, and (2) whether certain additions to the dietary produce a rise in pressure, or augment this if already present. The substances used for evoking the experimental nephritis were cantharidin and uranium. The kidney lesion produced by the former agent is principally a glomerulonephritis, and is not accompanied by any elevation of blood pressure, but uranium nephritis does cause a rise in tension. Neither water, sodium chloride, milk, nor meat extract have any effect on the arterial blood pressure worth mentioning, when nephritis already exists. The author therefore concludes that in acute nephritis elevations in blood pressure are not produced to the degree usually alleged as the result of clinical tonometrical determinations, and he infers that in view of the importance of accuracy in this matter it is necessary to investigate the problems involved more closely.

Münchener medizinische Wochenschrift, July 3, 1906.

A New Method for Quantitative Sugar Determinations.—Bendix and Schittenhelm have devised a piece of apparatus which is intended to simplify the quantitative determination of sugar in the urine. Equal parts of the urine and of 10 per cent. sodium or potassium hydrate solution are boiled together for one to two minutes, and the mixture is allowed to cool. A graduated tube is filled with the mixture to a certain point, and the color of the fluid is compared with that of a standard contained in a sealed glass tube. By diluting the urine mixture with water until the color corresponds to that of the standard, the percentage of sugar can be read off directly from the graduations on the tube. The ordinary urinary pigments do not interfere with the determination, though the urine must be free from adventitious coloring matter coming from ingested drugs, particularly phenol preparations. The method is not available for any sugars other than glucose, and one of the usual qualitative tests should always be employed first. Comparative observations showed that the error of the method is within 0.5 per cent., and that it is more reliable than the fermentation determinations. The presence of albumin does not interfere with the method.

The Treatment of Esophageal Stenosis.—Gerhardt values very highly the use of morphine to relieve dysphagia in cases of esophageal stenosis, and describes several instances in which great relief was afforded in this way. While the treatment is, of course, purely symptomatic, when the stricture is due to a malignant growth it enables the patients to take liquid food by mouth for long periods after deglutition has become impossible under other conditions. The drug is best given about fifteen minutes before meals, and does not appear to have any undesirable effect on the general conditions. Its efficacy is ascribed to the relief of muscular spasm.

The Diagnostic Value of Spirochetes in Congenital Syphilis.—Simmonds, as the result of the examination of a large number of cadavers of stillborn children and of infants that died shortly after birth, comes to the conclusion that the demonstration of the *Spirochæta pallida* in the organs in such cases is sufficient to justify the diagnosis of syphilis. A negative result in macerated fetuses appears to exclude the likelihood of syphilis, but in dealing with the bodies of children that have lived, the absence of the organisms must be interpreted more cautiously. The spirochetes were found in a great many of the tissues, including the meconium, but were most numerous in the liver and the wall of the intestine.

French and Italian Journals.

Symptoms of Basedow's Disease Without Goiter or Exophthalmos.—Libotte has recently reported a case of Basedow's disease in a woman thirty years old. He still has the patient under observation. On the least movement she suffered from palpitation of the heart which made walking impossible. Perspiration was habitual; tremor in the hands and arms made sewing and writing impossible. The stools were softer and more abundant than normal. The skin was always hot. Nevertheless there was no other sign of Basedow's disease, either in the neck or in the eyes. Physical examination did not show any signs of cardiovascular affection. Under the influence of the application of the galvanic current these troubles disappeared. The case is interesting from the absence of goiter and exophthalmos, and from the fact that the diagnosis was confirmed by the positive and rapid results obtained from galvanotherapy.—*Le Bulletin Médical,* June 2, 1906.

Action of Roentgen Rays in Malarial Infection.—Alberto Demarchi experimented on the effect of the *x*-ray on the malarial organism and on the tumor of the spleen in several cases of chronic malarial poisoning, with marked enlargement of the spleen. Examination of the blood was made to ascertain the effect of the treatment on the parasites. The author concludes that the rays applied over the spleen have no effect on the course of the infection, nor on the number, vitality, and development of the parasites, neither does it affect the occurrence of relapses. It does, however, produce a reduction in the size of the splenic tumor, but only after medication has put an end to the febrile attacks.—*Il Policlinico,* June, 1906.

Book Reviews.

THE OPERATIVE TREATMENT OF FRACTURES. By W. ARBUTHNOT LANE, M.S., F.R.C.S., Surgeon to Guy's Hospital, and Senior Surgeon to the Hospital for Sick Children, Great Ormond Street. London: The Medical Publishing Company, Limited, 1905.

ARBUTHNOT LANE operates in all cases of simple fractures of the long bones in which he is unable to obtain accurate apposition of fragments when the restoration of the bone to its normal form is of mechanical importance to the individual. In the present brief monograph he gives an account of his operative work in wiring and fastening the fragments of broken bones, and illustrates his results by radiographs. He believes that the teachings of the textbooks as to the possibility of restoring the form of broken bones and the satisfactory results of their treatment are absolutely false, and that the *x*-rays show that it is impossible to put displaced fragments of broken bones in accurate apposition without an operation. The mechanics of fractures, the special features of the several fractures of the long bones, and the operative technique employed by the author are dealt with in considerable detail.

The book is quite in contrast with that of Guermonprez (Études sur le Traitement des Fractures des Membres, Paris, 1906), recently published, in which sixteen hundred pages are devoted to the advocacy of massage and mechanotherapy in the treatment of fractures of the extremities, and the simultaneous appearance of the two books shows once more the divergence of opinions which still exists among surgeons as to the best ways of handling fractures.

NOTES ON GENERAL PRACTICE. By S. M. HEBBLETHWAITE, M.D., Lond., etc. London: The Scientific Press, Limited, 1905.

THIS pocket volume aims to put together a series of practical hints on subjects of vital interest to general practitioners. The notes are not arranged systematically, but ramble from "Peritoneal Catastrophies" to "Rheumatism, Pneumonia, Diphtheria," etc. Special sections are, however, devoted to surgical notes; notes on infants and children, and obstetrical notes. The author has drawn his material both from his own experience and from standard medical works, and the notes are of so practical a character that a busy physician will find use for them almost daily. They are written in an easy, conversational style and make pleasant reading during the odd moments, of which we are supposed to have so many.

SUL TRATTAMENTO CHIRURGICO DELLE NEFRITI MEDICHE. Dott. GIUSEPPE QUATTRO-CIOCCHI, Prof. l. d. di Patol. Spec. Chirurgica nella R. Università di Roma. Milano-Roma: Società Editrice Dante Alighieri di Albrighi, Segati e C., 1906.

THIS monograph on the surgical treatment of "medical" nephritis presents a very complete and all-sided discussion of this still unsettled problem. In many respects the present volume is modeled after the Portuguese monograph of Francisco Gentil: "Tratamento Cirurgico do Mal de Bright," which we had the pleasure of reviewing in this column some months since. Quattro-Ciocchi's work, however, lacks the strikingly beautiful illustrations of Gentil's book, and is more condensed and a year nearer to date. In both books the history of the movement towards surgical treatment in Bright's disease is recorded, the arguments of the various leaders of this movement—Harrison, Israel, Edebohls—are set forth, the experimental proofs now extant in favor of and against these arguments are detailed, and the clinical data thus far published are analyzed. Guiteras's table of 120 cases, the most complete thus far published, is given in full in the Italian book. The practical conclusion drawn by Quattro-Ciocchi is just as favorable to Edebohls's operation as the view taken by Gentil, for the former, whose book is now under review, declares essentially in agreement with the postulates of Edebohls, and regards the operation of decapsulation as a most important accessory to medical treatment, to be employed especially when medical measures fail.

DISEASES OF THE NERVOUS SYSTEM RESULTING FROM ACCIDENT AND INJURY. By PEARCE BAILEY, A.M., M.D., Clinical Lecturer in Neurology, Columbia University, etc. New York: D. Appleton & Co., 1906.

THE now well-known book, "Accident and Injury in their Relations to the Nervous System," which Dr. Bailey wrote in 1898, dealt chiefly with those functional derangements of the nervous system resulting from injuries, which are known as traumatic neuroses. In this book the differentiation of these neuroses from organic nervous affections due to accidents was necessarily given, but the organic conditions were not gone into further than needful. In the present volume, which must be regarded as an expanded and broadened treatise upon the subject of nervous diseases due to injuries, both functional and organic disorders due to accidents are considered from the viewpoint of the neurologist and the medicolegal expert. The usefulness of the volume is thus at least doubled in its present form, and physicians called upon to treat and to testify in cases of accidental injuries simply cannot do without Dr. Bailey's book.

In its present form the treatise shows the same excellent features that characterized the earlier book, but is distinguished by a greater systematization, a deeper and broader elaboration of the text, and a clearer view of the relations of injuries to the nervous system as a whole. The general considerations embrace the methods of diagnosis; part I. deals with organic affections, while part II. concerns the functional effects of injuries. Part III. embraces the medicolegal aspects of nervous disorders, following injuries, the methods of detecting simulation, the duties of the medical expert, etc. A necessarily brief but clear and practical chapter on the treatment of functional traumatic neuroses will find favor with the general practitioner. The chapters on the treatment of organic lesions are written with the outlook of the neurologist rather than of the surgeon, though surgical procedures where needed are briefly set forth.

Dr. Bailey's new book will prove of great help in many a puzzling case, especially to physicians far from centers where experts such as the author can be consulted.

THE PRACTICE OF GYNECOLOGY. In Original Contributions by American Authors. Edited by J. WESLEY BOVÉE, M.D., Professor of Gynecology, George Washington University. Washington, D. C. Philadelphia and New York: Lea Brothers & Co., 1906.

THIS is a new treatise on gynecology, one occupying a position midway between the "system," in several volumes and by many authors, and the individual treatise. The contributors to this volume are seven in number, to wit: Drs. J. Riddle Goffe, G. Brown Miller, George H. Noble, Benjamin R. Schenck, Thomas J. Watkins, and X. O. Werder, and the editor. The latter has written several chapters on diseases of the urinary tract, anus, and rectum in woman. The introduction of these subjects in a treatise on gynecology is novel, yet, on consideration, eminently logical, since all the pelvic organs in woman are so intimately related that disease of one is easily transmitted to another, or at least gives symptoms which are confusing. The volume is one of a series which includes similar composite treatises on obstetrics and on pediatrics. The illustrations are numerous and good, many of them, however, not original. The work is adapted to the needs not only of the gynecologist but also, and especially, of the general practitioner, and to the one as to the other it can be warmly commended.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS, AND PHARMACOLOGY. By GEORGE F. BUTLER, Ph.G., M.D., Associate Professor of Therapeutics in the College of Physicians and Surgeons, Chicago. Fifth Edition, thoroughly revised by SMITH ELY JELLIFFE, M.D., Ph.D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia University (College of Physicians and Surgeons), New York. Philadelphia and London: W. B. Saunders Company, 1906.

IN this edition, which has been adapted to the eighth revision of the U. S. Pharmacopœia, many changes have been made which are decidedly in the nature of improvements. The book, although containing new matter, has been reduced in size by the elimination of old and obsolete matter, and by the use of a more compact type. A new classification has been made, the drugs being grouped so as to bring together those whose predominant action is on one organic system of the body. The results of the recent activity in the field of physical chemistry are also incorporated in the work and brought in coordination with the heretofore accepted facts of the science of therapeutics.

HEATH'S MANUAL OF MINOR SURGERY AND BANDAGING. Thirteenth Edition. Revised by BILTON POLLARD, F.R.C.S, London. Philadelphia: P. Blakiston's Son & Co., 1906.

THIS little book has evidently filled a want among English medical students, to judge by the number of editions which it has gone through, the last of which has been brought up to date as much as possible. It contains the usual accounts of minor operations, dressings, and bandaging, is written in a very simple manner, and will probably prove of value for the English hospital interne. Some of the illustrations, particularly of instruments, had better been omitted, for they are certainly not representative of the patterns used at the present day—the cautery illustrated on page 188 will hardly be found in a modern hospital. There is a very good chapter on anesthesia by Dr. Buxton.

Society Reports.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Fortieth Annual Meeting, Held at Atlantic City, June 19, 20, and 21, 1906.

(Special Report to the MEDICAL RECORD.)

DR. ALEXANDER MARCY, JR., FIRST VICE-PRESIDENT, IN THE CHAIR.

Tuesday, June 19—First Day.

THE morning's session was devoted to the reading of the minutes of the previous meeting and of the reports of the various committees. The afternoon's session was begun with a prayer by the Rev. J. Holbrook Townsend. This was followed by an address of welcome by Dr. Thomas K. Reed of Atlantic City.

The Tendency of the Organism to Limit Pulmonary Tuberculosis.—Dr. THEODORE SENSEMAN of Atlantic City read this paper. He said it was of the utmost importance that the equilibrium of metabolism be maintained. The symptoms of the disease showed metabolic change; the toxins were to be met and neutralized; the cells of the body should receive proper and sufficient nourishment in order that they might ably cope with the toxins and neutralize them. The rationale of the treatment was the conversion of catabolism into anabolism. The question of diet was considered. Rest should be insisted upon if the temperature was 103° or over. One should study the individual and see that he got pure and fresh air, whether dry or moist did not matter, so long as it was fresh and the patient did not breathe it over.

Two Cases of Edema of the Larynx.—Dr. F. C. ARD of Plainfield, N. J., made this report. The first patient had an attack of tonsillitis and some two weeks later was admitted to the hospital for difficulty in breathing. Examination showed normal pharynx, edema of the ventricular bands, arytenoids, and posterior wall of the larynx, brawny swelling of the neck extending almost to the clavicle, marked dysphagia, dyspnea, and hoarseness; the patient was very restless. The temperature was 100.2°, respiration 30, pulse 112. On the following day the symptoms improved, and the urine examination showed albumin, granular, hyaline, and blood casts. There was continued improvement with lessening of the swelling in the neck for four days when the patient's condition rapidly became worse, with temperature 103.4°, pulse 136, patient in a comatose state, marked twitching of the arms and legs, almost total suppression of the urine, pulse full and bounding. The median basilic vein was opened and twenty ounces of blood extracted. The same amount of saline solution was injected. Tracheotomy was performed, a large tube inserted, at the same time, an abscess of the neck was opened, from which a considerable quantity of pus escaped. The following day the patient was rational, his general symptoms improved, and he made a rapid recovery. The second patient complained of earache. An examination revealed the ear to be normal, but a tender and swollen spot was found underneath the tongue. The swelling underneath the tongue rapidly increased. The patient's home was in New York, and she was making a short visit in Plainfield. She stated that if her illness was serious she wished to return immediately to New York. She was advised that it might become serious and she accordingly returned. Subsequent history was furnished by Dr. F. W. Murray, surgeon of the New York Hospital, who was called in by the family physician to open the abscess underneath the tongue. Ether was administered, edema of the glottis supervened, and a hasty tracheotomy was done. Owing to a heart lesion further operative interference was stopped. On the following day the abscess ruptured in the pharynx. The patient recovered. In further remarks, Semon's conclusions were assumed to be correct, that the various forms of acute septic inflammation of the throat and neck, heretofore considered as so many different diseases, were, in reality, pathologically identical; they merely represented degrees, varying in virulence, of one and the same process. Some of these cases were mild, in others the toxic element was so overwhelming that death almost invariably resulted. Prodromal symptoms were sometimes present, such as headache, sore throat, fever, and general malaise.

Dr. NORTON LUTHER WILSON of Elizabeth said that any inflammatory condition surrounding the larynx was capable of producing edema of the larynx. Iodide of potassium had been known to produce it after the administration of three drams of a 5 per cent. solution. Influenza as well as malaria might cause it, and Dr. Wilson had seen it develop in cases of angioneurotic edema. He made a plea for tracheotomy in cases of edema of the larynx, and reported an instance in which he temporized in the afternoon by simply puncturing the edema, the patient dying that night before help could reach him. He believed that if he had performed a tracheotomy the man would have lived.

Dr. TALBOT R. CHAMBERS of Jersey City said that in these cases of edema of the larynx he used nitrate of silver in 25 per cent. solution. He reported a case of lupus of the larynx which he operated upon; the patient lived five years, but died from a recurrence.

Dr. JOHN G. RYERSON of Boonton reported a case in which the old-fashioned gum lancet was jabbed down here and there, with recovery following. He did not believe the disease to be the same to-day as it was thirty or forty years ago.

The Prevention of Scarlatinal Nephritis.—Dr. FLOYD MCEWEN of Newark said that nephritis was a very serious sequel of scarlet fever, and every effort should be made to prevent its development. The internal use of bisulphate of sodium was of service. He also considered the importance and management of the diet.

Dr. DAVID E. ENGLISH of Milburn said that scarlatinal nephritis was due to the elimination of toxins by the kidneys and he condemned the old practice of greasing the skin, thus throwing greater labor upon the kidneys. It was his practice to apply to the skin soap suds and alcohol, and take from the skin all of the poison that he could.

Dr. FRANK WILCOX PINNEO of Newark said that if convulsions and albuminuria occurred early in the disease an acute exudative nephritis was present and would be followed by recovery; but if the convulsions occurred after the third week or later, without a preceding albuminuria, the prognosis was less favorable.

Examination of Eyes and Ears of School Children.—Dr. LINN EMERSON of Orange gave the results of Dr. Allport's plan of examination of the eyes and ears of public school children in the Oranges, and made a strong plea for its universal adoption.

Dr. EDWARD E. WORL of Newark said that the measure advocated by Dr. Emerson was a good one and should be extended to the entire State of New Jersey.

Dr. TALBOT R. CHAMBERS of Jersey City was heartily in favor of the scheme as proposed; this was in the line of progress and everything should be done to make the children healthier and better.

Dr. DAVIS of Camden said often irregular attendance at school was an indication that something was wrong with either vision or hearing.

Dr. N. L. WILSON of Elizabeth also discussed the paper.

The Value of Tartar Emetic in the Treatment of Traumatic Tetanus and Cerebrospinal Meningitis.—Dr. DAVID ST. JOHN of Hackensack took this as the subject of his annual address. He reported cases that had occurred in the Hackensack Hospital which were cured by giving tartar emetic in large doses, a treatment that had been given him by Dr. William R. Bross, Medical Director of the Equitable Life, and which Dr. Bross had used successfully while in the tropics.

The System of Medical School Inspection of the Department of Health of the City of New York.—Dr. Thomas Darlington, Commissioner of Health of New York City, considered the prevalence of unreported cases of acute infectious and contagious disease among the school children, the transmission of contagious diseases in the public schools, the control and elimination of these by inspection and exclusion from school, visiting homes of absentees, etc. Investigation by the Board of Health concerning public schools and the transmission of disease was begun October 18, 1896; in March, 1897, a system of medical school inspection was begun. In June, 1902, sixteen oculists were appointed with particular reference to trachoma. A revised procedure was adopted, a card index, listing the names of children with history of their diseases, and the appointment of school nurses, followed. In December, 1902, a regular corps of nurses was appointed. In December, 1902, there was established an eye hospital and dispensary under the control of the Board of Health and, in 1904, a second eye hospital and dispensary was opened. In March, 1905, there was established a complete physical examination of school children.

Dr. Walter B. Johnson of Paterson said that what had been done by Dr. Darlington was of great importance, but that the physicians now should get together and try to curb the educators. It made no difference how hygienic the schoolhouses were, or what was the condition of health of the child, if the educator was to be allowed to pile an enormous amount of work upon the students by advancing the standards to a point the average child could hardly attain. This advancement of education beyond the point of tolerance was as unwise as to erect badly constructed schoolhouses.

Dr. Edward E. Worl of Newark agreed with Dr. Johnson and thought it would be a wise plan to return to the old system of three hours a day. In Newark a very large number of school children had enlarged glands and many cases of measles formed the foundation for the development of tuberculosis in after life.

Dr. Frank D. Gray of Jersey City told of the hopeful outlook that now existed because of the very efficient plan of reaching the public through the newspapers and various magazines, and in popular lectures in schools, colleges, and public halls.

Dr. Richard P. Francine of Montclair said that the public in the State of New Jersey was not, as a rule, educated to appreciate the value of medical school inspection, and it should be the aim of the Society to educate the public up to this.

Oration in Surgery.—Dr. Thomas W. Harvey of Orange introduced his paper with a few considerations of the preantiseptic period and a reference to the rapid development of surgery, the supplanting of medical treatment by surgery in diseased conditions situated below the abdomen, and the fact that so many more medical men were doing surgery than formerly. The tendency of the schools to train students as general surgeons rather than as general practitioners was commented upon. With all the increase of surgical work and of the number of surgeons, there was, however, a steady progress toward conservatism in surgery, the essentials of which were claimed to be early operation, wide incision in malignant disease, preservation of organs in suppurative and benign disease, and protection of the patient during the operation. The rest of the paper was devoted to the consideration of the clinical laboratory as an adjuvant to surgery, and illustrations were given of the many ways in which surgical diagnosis and prognosis were facilitated by its assistance. The use of cryoscopy in determining the adequacy of the renal function, when considering the question of removing a diseased kidney, the relation of the excretion of indican and glycerin in the differential diagnosis of diseases of the digestive tract, the value of the differential blood count in measuring the severity of inflammatory processes, and the application of the studies of Crile and Cushing in blood pressure to the uses of surgery, were all considered. He concluded his address with a brief mention of the possibilities of further surgical progress, and the statement that many things had to be learned and many things forgotten before we could say with Ambroise Paré: I have so certainly touched the mark at which I aimed, that antiquity may seem to have nothing where it may excel us, besides the glory of invention; nor posterity anything left but a certain small hope to add some things, since it is easy to add to former inventions."

Oration in Medicine.—Dr. Joseph Tomlinson of Bridgeton then delivered this oration, taking as his subject the study of structure and function in relation to practical medicine. The relative importance of anatomy and physiology in comparison with the other branches of the science of medicine was a factor variously estimated. These subjects were regarded by the average undergraduate in medicine very much as were Latin and Greek by most students in the classical course in our colleges, as dry and devoid of interest, and worthy only of being forgotten as soon as examinations had been passed. Specialists and a very small minority of general practitioners realized that a knowledge of structure and function was an absolute requisite to definite diagnosis and rational treatment. A plea was made for a better and more general understanding of these subjects by the general practitioner, as he believed it was the very essence of scientific work. As the knowledge of normal structure was supplemented by a knowledge of structure in disease, and as macroscopic investigations were amplified by microscopic discoveries, they came to be looked upon as a means of discovering the nature and cause of disease quite as much as preliminary studies. There was, perhaps, no better exponent of the men who helped to stamp them as means to this end than the late Professor Virchow. Most of his eventful life was spent in propagating his theory of the anatomical principle in disease. The study of comparative anatomy also bore an important relation to medical science, involving, as it did, the theory of evolution and the variation of species. It was of especial interest to the physician, because of its bearing upon the question of heredity. Anatomy and physiology were, therefore, not only descriptive of normal structure and normal function, but were also requisite for the detection of disease, the comprehension of its nature, and the interpretation of its symptoms. The attitude of the physician toward these subjects would determine his standing as a scientific man. How could the ordinary physician be brought to a higher standard of knowledge in these branches? The suggestions here made were, as far as they went, the outgrowth of practical experiences of many years with the specialist on the one hand and the general practitioner on the other. They might be formulated as follows:

1. The general practice of medicine should stand for something definite, with specific requirements and limitations. In the final analysis the qualities demanded in the physician were twofold, consisting of ideals and ideas. Ideals alone would not make a competent physician. He must also possess adequate knowledge, judgment, and studiousness. Diagnostic ability comprehended the latter requisites. Failure in diagnosis on the part of the general practitioner might be due to faulty methods of examination, quite as much as to lack of knowledge of structure and function. Diagnostic duty was not completely performed by a naming of the disease. Every disease must be studied with reference to the individual. Age, sex, habit, as of plethora or the reverse, individual idiosyncrasy, drug susceptibility, temperament, coexisting disease, hereditary influences, all had a bearing upon the proper estimate of a case. The prevailing carelessness in this phase of diagnosis was evinced by the widespread habit of prescribing ready-made tablets of complex formulæ, without regard to the individualities of the case.

2. The physician should constantly endeavor to refresh his memory in anatomy, physiology, and pathology, and

should seize every opportunity to add to his knowledge on these subjects. Autopsies should be more frequently sought, and subjects chosen from this field should be more frequently discussed in the county societies. The possibilities of awakening a scientific spirit were the most desirable of all the results to be hoped for in the complete organization of the medical profession. There was no better opportunity for the physician to study pathology than by witnessing surgical operations. Nothing had done so much to convince the physician of the futility of medical treatment for appendicitis as actual demonstrations on the operating table. And nothing could so impress him with the seriousness of a chronic middle-ear discharge, as a mastoid operation or an operation for infective sinus-thrombosis.

3. Some changes in the methods of medical teaching were evidently required. Either intentionally or otherwise there had been a growing tendency to specialism in medical teaching. Now the plea was going up from various quarters of the profession to give us the physician first and make the specialist afterward. It was to the teacher we must look for a readjustment of methods in medical education. His appreciation of his duty, his conscientious desire to perform his duty, and his willingness to let the profession of teaching be the end rather than a means to further private ends, would form a safe basis for the solution of this problem. Such were some of the methods which had suggested themselves for raising the standard of work in the rank and file of the medical profession. As the broad and comprehensive grasp of great truths intelligently expressed by the methods of his art constituted the artist, so the work of an intelligent physician involved the personal application of broad principles. Without the ability to do this he went through the form of his work without getting at the substance of it, and his efforts bore the same relation to what they should be as a doggerel rhyme bore to a poem of Tennyson. And as the artist, whether his field was in painting, in poetry, in sculpture, or in the drama, should ever strive to impress the lofty ideals of beauty, truth, and virtue, so it became the duty of the physician unceasingly to strive toward a better knowledge of the structure and functions of the wonderful piece of mechanism which was committed to him, as a practitioner of the healing art, in sacred trust.

Fibroid Tumors of the Uterus.—Dr. George H. Balleray of Paterson read this paper. The points that he wished to draw attention to were as follows: That but little was known of the etiology of fibroids; that they almost never appeared before puberty, and rarely developed after the menopause; that they were more common in women of the negro race than in white women; that heredity was a factor in their causation; that the mere presence of a uterine fibroid was not in itself an indication for operation; that palliative treatment often sufficed to carry the patient beyond the menopause, and that after that period the tumor often disappeared spontaneously; that in pedunculated growths and tumors that could be enucleated without too much injury to the structures of the uterus, myomectomy should be the operation of choice; that when hysterectomy was necessary, supravaginal amputation was a much better operation than panhysterectomy or the combined method; that when pregnancy complicated a fibroid tumor of the uterus the patient should be allowed to go to full term, and when labor set in the case should be treated according to the indications present at that time.

Dr. Edward J. Ill of Newark said that in the records of the Johns Hopkins Hospital there were recorded 1,310 cases of uterine fibroids, and only one that appeared to have gone on to malignancy. He said he had never seen a case of malignancy occurring in a uterine fibroid. These patients should be watched very carefully; while the fibroids increased in size before menstruation, they decreased again afterward; he treated them with cotton-root extract in 30-drop doses before and during the menstrual period, and this appeared to have a marked influence. With regard to pregnancy and fibroids, of twenty cesarean sections, only one was performed because the fibroid obstructed the passage of the child. He had many times expected to be called upon to do a cesarean section, but there followed a retraction of the lower uterine segment and an ordinary labor.

Dr. Balleray was glad that Dr. Ill emphasized the fact that there were so few cases in which a true malignancy appeared in the uterine fibroid. With regard to pregnancy complicating fibroids, he said he had written a paper some time ago in which he reported a number of such cases. In several delivery was made quite difficult. In every case, however, within eighteen months from the time of delivery the tumors, which were sometimes as large as a uterus at the sixth month, had entirely disappeared. He advised letting nature alone and not interfering unless with positive indications.

Wednesday, June 20—Second Day.

Metastatic Panophthalmitis.—Dr. Charles J. Kipp reported two cases of metastatic panophthalmitis. The first patient had been operated upon for appendicitis. For a week after the operation there were no signs of sepsis, then occurred phlegmasia alba dolens of one leg. After recovery from this there followed a very painful inflammation of the knee joint, a profuse diarrhea, then metastatic inflammation of the right eye, followed on the next day by inflammation of the other eye. There was total blindness. Death occurred sixty-one days after the operation. No autopsy was allowed. In the second case reported there was an extensive laceration of the foot and leg, complicated by septicopyemia and endocarditis, with metastatic ophthalmia of the left eye, followed in a day or two by the same disease of the other eye. Death followed, and at autopsy, with the exception of an infarct in the kidney, there were no metastases found in any part of the body except in the eyes. A report of the microscopical findings was given. There was flocculent exfoliation in both chambers of the eyes. The retina was in folds, caused by contraction of the sclera. The corneal epithelium was in good condition and Bowman's capsule was well marked. The membrane of Descemet was present, but indistinct. The iris was swollen and infiltrated. There was a purulent exudate surrounding the ciliary processes. The choroid was not thickened to any extent, but was filled with small round cells.

Dr. Walter B. Johnson of Paterson said he had seen only two cases, one following a puerperal pyemia, the other an endocarditis. The books stated that cerebrospinal meningitis, typhus fever, thrombus of the orbital veins, endocarditis, and pleuropneumonia were responsible for this form of infection, but they said little or nothing about its following injury or operation. There seemed to be a difference of opinion as to whether the panophthalmitis started in the retinal or in the choroidal vessels, or whether the infection was through a small embolus or a thrombus of the choroidal vessels.

Dr. Sutphen of Newark had seen one very appalling case, occurring in a man, following an attack of cerebrospinal meningitis.

Dr. Norton Luther Wilson of Elizabeth said he had never seen a case of panophthalmitis following a surgical operation, but he had seen three cases, one following endocarditis, one mumps, and the other pneumonia.

Pathological Report.—Dr. Philander A. Harris of Paterson presented the pathological report of eight cases of unruptured tubal pregnancy, proving his contention that they were true cases. (See Medical Record, July 8, 1905, page 75.)

Nutrition During the First Two Years of Life.—Dr. Henry L. Coit of Newark opened this symposium by considering the universal failure of maternal feeding and how best to conserve breast feeding. After speaking of the principles of infant feeding, he took up the methods of substitute feeding—empirical, commercial, mechanical,

mathematical, natural, and rational. There should be a flexible baby, a flexible mixture, but an inflexible principle.

Digestion of Fats, Proteids, and Carbohydrates in the First Year.—Dr. J. Finley Bell of Englewood offered the following conclusions: (1) The discovery of the gastric steapsin was most important, since it explained why infants could take and thrive on a high percentage of fat long before the pancreatic steapsin was fully developed. (2) The infantile digestive apparatus was fully equipped at birth for the digestion of the proteids necessary for its growth and development. Trypsin was the first enzyme of the pancreatic juice to develop. (3) The fat must be fluid and soluble, *i.e.* of a low melting point, in order that it might be digested. (4) The milk of many cows, particularly the Jersey and Guernsey, contained a highly insoluble fat, and should not be employed in infantile dietetics. (5) Goat's milk, with its soluble fats, fitted it for infantile feeding. (6) The employment of undextrinized cereal gruels during the early months of life was never useful, and frequently injurious. (7) Dextrinized gruels possessed no advantage over sugar solutions, and hence were unnecessary. (8) Whey cream mixtures of either cow's or goat's milk, preferably the latter, because of its soluble fat, prevented the formation of large curds by diminishing the amount of casein, substituting therefor a like amount of digested whey proteid albumin. (9) Infants would frequently digest and thrive on simple dilution of goat's milk. (10) During the latter months of the first year the child should have cereals, preferably in the form of jelly and fed with a spoon. These should include oats, wheat, and rice.

Suitable Diet During the Second Year.—Dr. Margaret P. Brewster of Grantwood read this paper. She advised a more liberal feeding after the ninth month, and recommended the use of diet lists for use during the second year. She also gave some suggestions for overcoming constipation after the nursing period, giving personal experiences along this line.

Second Year Disorders of Infantile Digestion.—Dr. Alex McAlister of Camden read this paper. He said that second year digestive disorders of infants were not less severe, but were less frequent than those of the first year. Some cases were carried over, as of puny or sickly infants; other cases were acquired incidental to normal growth, weaning, etc. The latter cases belonged to the scorbutic, the rachitic, the overfed, and the wrongly-fed. A child's propensity to eat everything and to swallow what could be put into the mouth must figure in proper diagnosis and treatment. In the search for cause emetics and cathartics were essential. Mothers needed education that they might determine by other means than a child's greed the quantity of food proper to allow. In all acute disturbances only water or thin gruel, or both, and little or no milk, while the alimentary canal was being treated, should be allowed. This accomplished, one should return to the first year diet, allowing in addition only scraped meat and fruit juice in small quantities. In chronic disturbance, from whatever cause, one should go back to the first year food. Every return to second year food must be gradual.

The Etiology of Rachitis, Scorbutus, and Cretinism.—Dr. August Adrian Strasser of Arlington read this paper. He said these were the three great nutritional disorders of infancy, and he briefly reviewed the theories of their causation, all summed up as errors in nutrition.

Diarrhea in Infancy and Early Life.—Dr. Irvin H. Hance of Lakewood said that the fundamental principle in the consideration of these cases was individualization. He advised against feeding by rules laid down for the age of the child. One should not give the child too much attention, but keep it quiet. A flannel binder should be kept on until the baby was four months old. The alimentary canal should be cleaned out thoroughly, and the stomach and bowels should have a rest for twenty-four or thirty-six hours; then one might gradually work back to the ordinary diet. The four drugs in his armamentarium in the treatment of diarrheas occurring in infancy and early life, were calomel in small doses, castor oil in full doses, bismuth, and paregoric.

Dr. Henry L. Coit of Newark said that the indications for treatment were four in number, viz., elimination, support, rest, and feeding. In elimination the drug of greatest value was calomel, and it was better used as Fothergill of London used it, in large doses followed by a saline. Support was accomplished by the use of water, especially the feeding by a medicine-dropper of water as hot as could be borne. This was readily absorbed, and acted as both food and drink. Rest was obtained by the administration of opium. The feeding should be by the use of sterilized carbohydrates and albumins, but especially sterilized water.

Dr. David E. English of Milburn did not believe in regular feeding. He did not believe that the infant's organs could always digest the same amount of food and the same kind of food, in the same number of minutes. The old-fashioned method was about right: when the baby cried, feed it. The baby's organs of digestion could not be fully developed unless properly exercised. The child should be placed upon a moderately firm surface, without any clothes on, and he said it was surprising to see how much exercise the baby would get and how much it would do to earn its living by such exercise.

Dr. Judson Daland of Philadelphia said that the closest scrutiny of the discharges should be made, not only of the feces, but also of the urine. If large quantities of indican were present in the urine, the evacuation treatment was indicated. There was a very important relationship between indican in the urine and chemical changes going on in the intestines. Colonic lavage removed from the colon materials which might be the source of supplying toxin substances, and therefore was of value in some cases.

Dr. Richard Cole Newton of Montclair said that women attempted too many things. The cow did not do anything except produce milk. It seemed to him that the time had come when the physical life of women should be changed so that they could nourish their own children. He advised that a lesson should be taken from the cow, who devoted her life to this one function. Women should be kept away from clubs and afternoon teas.

Dr. J. Finley Bell of Englewood gave podophyllin instead of calomel in these cases, and with good results. Many protracted cases of diarrhea were the result of nephritis; therefore the urine should be examined with great care in those intractable cases. The object of pediatricians was not to make a perfect food, but to get a better knowledge of the chemistry of milk that could be adapted to a particular child. He said that when babies were nursed irregularly, one not only ruined the child but also the mother's supply of milk.

Dr. William H. Walling of Atlantic City had used with great success arsenite of copper in the diarrhea of infants.

Some Dietetic Errors and Their Effects.—Dr. W. Blair Stewart of Atlantic City read this paper. The indiscriminate mixing of food produced more harm and gastric disturbance than the eating of plain food alone. The tendency was to a complex diet of many things at meals, rather than a small quantity of wholesome, well-balanced food, and to the bolting of that. A little more sensible advice on diet and less medicine was required, and physicians should study cook-books and advise patients how to prepare foods. Mixing acid fruits and cereals at the same meal was condemned as a most common error. Sugar on cereals should be avoided, and a little salt used instead. The oat cereals were the worst in fermentive troubles and caused more disturbance than wheat. Cereals should be cooked for several hours. The widely advertised forms of predigested foods were condemned as almost useless—a very few excepted. The whiter the bread and the finer the flour, the less true food value it contained. Hot bread and rolls were considered unwholesome. Sugar was probably the most abused food product and must be used discreetly. Coffee, tea, and alcoholic liquors and condiments

were considered in turn. Mixing of foods was condemned as productive of troubles that would not be produced by the simple food itself if taken alone. Eight to fifteen different foods and one to four different drinks were taken at an average course dinner. Was it any wonder that digestive disturbances resulted and the cause was never apparent to patient or physician? The beautiful results of a digestive ferment in a conglomerate mixture of foods in a test-tube might appeal to the theorist as an argument in favor of such excesses, but such changes did not take place in the stomach and would not prepare the food for proper assimilation. Our hardiest and healthiest people were those who ate any wholesome food placed before them and who had done so since childhood. Constant hunger was an indication of disease, if present in a well-fed person. A small, properly selected, well balanced, and carefully taken diet would be better assimilated and produce more nutritive effects than the meal of a glutton. The manual laborer or mental worker did his best work on a light meal. Persons past fifty should be very careful in their diet, and avoid the stimulant foods, so that arterial tension was not raised. The person whose stomach was his god and who believed in eating everything that tickled his palate, was a danger to himself, a dietetic nihilist, and must be cautioned in no uncertain terms. Dessert was declared useless at the close of a meal; it was that much too much and better avoided The idea that a fish diet supplied phosphorus and acted as a brain food was declared a fallacy. The author dwelt briefly upon the exploded theory of the sex of the child being influenced by the diet of the mother, and classed it as irrational. The paper closed with the remark that it was wrong to rush to see our patients or to see them in the office, write them their prescriptions, or give them some medicine, and hurry them through for the next one because we had no time to give them proper dietetic and hygienic instructions. We should be specific in directions on these subjects in every case, and see to it that the advice was thoroughly understood and, better still, put it in writing for them.

Dr. Philip Marvell of Atlantic City said that Dr. Stewart did not exaggerate when he referred to the habit of people sitting down at table and eating from fifteen to eighteen different kinds of food. The majority of people would be far better off if they abstained from desserts. It would be better, too, to lessen the number of meals taken a day, especially when people were past the age of sixty or seventy. Greater comfort was to be had from two meals a day than from three, if the person was actively engaged in work, either mental or physical.

Dr. W. E. Darnell of Atlantic City believed that overeating was as bad as over-drinking, and it was just as bad to be intemperate at the table as it was to go out on a spree. A more simple menu would produce less gastric and intestinal disturbances. One could not eat meat alone and expect to have a perfect digestion. There should be a proper balance in the dietary.

Dr. Richard Cole Newton of Montclair advised that they should consider the rules of life as laid down by Fletcher. It made not so much difference what one ate, so long as one ate properly. The food should be chewed until all taste had been extracted. If one ate properly, according to these rules, indigestion, Bright's disease, headaches, etc., would pass away, never to return.

Dr. Henry L. Coit of Newark condemned the American breakfast. Milk and fruits should not be taken at the same meal, neither should meats and fruits.

Dr. Judson Daland of Philadelphia said that the amount of food for the professional man should be about one-quarter to one-half that required for the laborer. He very much opposed the eating of meat and milk at the same meal. For brain workers a meal without meat would do better. Fruits should be taken one hour before the meal.

Dr. Alexander Marcy, Jr., of Riverton agreed that the average individual ate too much, and this was particularly true of the medical man. As long as the American plan of living was continued, just so long would the average person overeat. The continental breakfast was better than ours.

A Brief Study of the Clinical Evidence of Some Infections that Apparently Enter the System Through the Faucial Tonsils.—Dr. Philip Marvell of Atlantic City read this paper, in which he considered the supposed function of the faucial tonsils and the frequency of their involvement in bacterial disease. (See Medical Record, June 9, 1906, page 950.)

Dr. W. Blair Stewart of Atlantic City reported a case of erysipelas, in which there was strong evidence to prove that the disease germs gained entrance through the tonsils.

The Surgical Treatment of Gastroptosis.—Dr. Henry D. Beyea of Philadelphia read this paper, in which he considered the application of the surgical as compared with the medical and mechanical treatments of this affection. The *x*-ray was of added value in the study of gastroptosis. A further report of the results of his treatment, the surgical plication of the gastrohepatic omentum, was given, as well as the indications for the surgical treatment. The principle of the operation was that by placing three rows of interrupted sutures of silk from above downward, and from right to left, either the gastrohepatic or the gastrophrenic ligament were so attached to the gastrohepatic omentum, using a broad transverse fold, that plication was formed in the ligaments, thus shortening the supports and lifting the stomach to its normal position. In fourteen of the cases the patients had suffered from five to fifteen years with the characteristic and very severe symptoms of gastroptosis. All were very much emaciated. These fourteeen cases were observed during periods of from three months to eight years, and in every instance there was improvement in health following operation, which was most remarkable, and the relief of the symptoms was complete. There was no mortality. The operation of plication was indicated in every instance of gastroptosis in which the patients were not comfortable and unable to assume their occupations and soical duties after the thorough application of medical treatment.

Dr. Gorden K. Dickinson of Jersey City was surprised that such permanent results could be obtained from a plastic operation upon the gastrohepatic ligaments which contained such a small quantity of fibrous tissue. The results of Beyer's treatment showed that he had given the profession something of great value.

Dr. Noble of Philadelphia said there seemed to be a decided lack of knowledge regarding the general question of gastroptosis, enteroptosis, etc. Personally he thought medical men were very apt to exaggerate the frequency with which the internal viscera were prolapsed; in their discussions they assumed that if the kidney was prolapsed all other organs dropped. His own opinion was that the stomach dropped often when other viscera did not, and this was true of the uterus. Therefore, in many cases, if the gastroptosis was cured, one cured the only trouble the patient had.

Dr. Frank D. Gray of Jersey City asked if it would not be a time-saving method to use the continuous suture over a piece of rubber tubing. The only objection he could see was a possible interference with the circulation in the gastrocolic and hepatic omentum. He emphasized the fact that they were dealing with a gastroptosis and not a gastric dilatation.

Dr. George H. Balleray of Paterson thought this condition was due more to the patient's mode of life. It occurred among females and was, in the majority of cases, due to faulty methods of dressing, tight corsets, skirt bands, etc. There was an absorption of the intraabdominal fat and the benefit, in his opinion, of an operation was in keeping the patients in bed and allowing a reaccumulation of fat. One should not be in too great a hurry to suspend the stomach. It was necessary that the abdominal wall should have a sufficient amount of fat and of retentive

power; cure really followed rest in bed and improvement of the general condition.

Dr. Henry D. Beyea of Philadelphia acknowledged the fact that neurasthenia existed with a general ptosis. The restoration to health following these operations was remarkable. The use of the tube referred to by Dr. Gray was unnecessary and not practical. It was very necessary to go as high as possible, introducing all the sutures, before one tied them. As regards dilatation associated with gastroptosis, in three of his cases this was diagnosed, but was found not to be present at operation. It was usually secondary to the gastroptosis, and if the latter was relieved the dilatation symptoms would be as well.

The Omentum and Its Functions.—Dr. G. K. Dickinson of Jersey City read this paper. The numerous blood-vessels and lax tissues of the omentum allowed of storage of blood when the general arterial tension was high. By venous anastomosis through adhesions, local congestion might be relieved. Through its large surface freely exposed to surrounding parts in motion, it became a rapid absorber of fluids by the blood stream. By the lymph stream it was a free carrier of white blood corpuscles, encapsulating solid particles. Through its cohesive tendency, apertures in the abdomen into which the omentum had been forced by intraabdominal pressure became more or less completely closed. Through its readiness to lymph formation and local proliferation, it became attached to infected parts, which were walled off, subsequently to be absorbed by phagocytic action; the peritoneal cavity was thereby protected. The majority of the phagocytes extruded into the peritoneum for its protection came through the omentum, largely from the general circulation, but in part from the tissues therein existing; subsequently to be attached to the surface of this tissue, taken into the lymph stream, and subjected to the cytolytic influences existing there. Lack of development of the omentum, or loss through operation, rendered one less resistant to peritoneal invasion. Hemolymph glands of the splenic type existing in its base supplemented the spleen if the latter was removed or its functions interfered with.

Etiology of Appendicitis.—Dr. T. H. Mackenzie of Trenton gave a survey of the anatomical, physiological, and histological peculiarities of the appendix and their bearing on the predisposing causes of this disease. He gave both clinical and exciting causes. He said that among the factors that appeared to render the appendix less resistant to bacterial invasion and the other determining causes of appendicitis might be mentioned defective blood-supply arising from angulation, contortion, bands, and adhesions. Impaired circulation and nutrition were also produced by ineffectual peristaltic efforts on the part of the appendix to rid itself of offending foreign bodies, such as calculi or inspissated fecal matter. Another significant factor in rendering the appendix less resistant to bacterial invasion was atrophy or retrogression of that organ.

Diagnosis of Appendicitis.—Dr. Ellis W. Hedges of Plainfield presented this paper, which was read by Dr. Chandler. In it he emphasized the importance of diagnosis, and said that it was apt to be overlooked. The diagnosis was based on the presence of pain, tenderness, and fever. The pulse was generally a better index of the gravity of an attack than fever. The breathing was largely thoracic and quickened. There was rigidity of the right rectus. There was some value in the leucocyte count. He then took up the differential diagnosis from pneumonia, diaphragmatic pleurisy, hepatic colic, right floating kidney with twisted pedicle, intestinal obstruction, gastritis, acute enteritis in children, foreign bodies in the cecum, perforation of gastrointestinal ulcers, typhoid fever, intussusception, tuberculous peritonitis, pyelitis, and hip-joint disease.

Complications and Sequels of Appendicitis.—Dr. Paul M. Mecray of Camden read this paper and considered peritonitis, abscess, obstruction of the bowel, gangrene, sepsis, phlebitis, hemorrhage, and other complicating conditions; also he considered adhesions, hernia, fecal fistula, pain, and neurasthenia, as sequels.

The Treatment of Appendicitis.—Dr. Frank D. Gray of Jersey City read this paper. (See page 130.)

Dr. E. LaPlace of Philadelphia said there was no easy road to the diagnosis of appendicitis; there were no symptoms, or set of symptoms, upon which we could depend. Microorganisms did not behave in the same way any two hours during the course of the disease in two patients. The fever, rigidity, rapidity of the pulse, and other symptoms would be different in different cases.

Dr. George H. Balleray of Paterson, referring to the difficulty of diagnosis, said he had seen a child five years old with an acute perforative appendicitis and peritonitis, in whom a diagnosis had not been made, and he had seen two other cases in which the attending physicians had made a diagnosis of ptomain poisoning; in one case the abdomen was filled with pus.

Thursday, June 21—Third Day.

Hysteria and Neurasthenia in Women.—Dr. M. J. Synnott of Montclair read this paper. He said that functional nervous derangements were frequently met with in general practice and that they were so common in America because we went so much to excesses and the laws of hygiene were so often disobeyed. Hereditary influence, education, environment, and overwork were considered among the etiological factors. He divided them into two forms, primary and secondary. The symptoms were cerebral, spinal, vasomotor, gastrointestinal, respiratory, circulatory, vesical, articular, and mental. Attention should always be paid to prevention, to hygiene, diet, exercise, and special symptoms.

The Treatment of Chronic Nervous Conditions.—Dr. W. G. Schauffler of Lakewood read this paper. What it was desired to accomplish was the cure of the underlying causes and the amelioration of the symptoms. The methods of treatment he considered were medicinal, mental suggestion, physiological therapeutics, climate, etc.

Dr. William M. Leszynsky of New York said the general practitioner did not get the best results in the treatment of these cases because he could not get rid of the influences which surrounded these patients. One of the most difficult problems of the day in New York City was to know what to do with those poor people who could not afford to pay for proper treatment, and he hoped that some philanthropist would come to their aid in providing and endowing an institution for the care of these poor but deserving patients. In the treatment of hysteria and neurasthenia one should first be sure of the diagnosis. Many cases were brought to the neurologist with a mistaken diagnosis. Only this winter he had seen four cases of brain tumor that had been treated for a long period of time for hysteria and neurasthenia, the mistake being not due to ignorance but to carelessness. Dr. Leszynsky agreed that the worse place to send these patients was to the sanatorium, where patients were too often allowed to talk and compare their symptoms. The smaller the sanatorium the better would be the results. For his own part he could see no objection to treating these patients at home. The moral management of these patients was more important, as a rule, than the drug treatment. Occasionally he used cascara sagrada or some hypnotic. As to the use of electricity, massage, sunlight, etc., all agreed that they were more or less efficient. He advocated the use of the hot-air bath. He had not the great faith in electricity that Dr. Schauffler had.

Dr. William H. Walling of Atlantic City said that electricity should be used with some discrimination, and only trained assistants should administer it. A careful study of each case would give the best results.

Dr. Talbot R. Chambers of Jersey City reported two interesting cases. In one he removed in two years 238 needles from different parts of the body.

Dr. Sutphen of Newark said these cases of neurasthenia

were really serious and should not be passed over lightly. Every physician should make his own diagnosis and not be guided by that of others.

Dr. Walter B. Johnson of Paterson, Dr. George H. Balleray of Paterson, and Dr. Elihue Britton Silvers of Rahway discussed the papers. The discussion was closed by Dr. Synnott and Dr. Schauffler.

Chorea and Its Management.—Dr. Thomas P. Trout of Summit read this paper. He considered the seat of the lesion in chorea and its relation to some recently known facts in brain physiology, particularly regarding the muscular movements. The mental symptoms and the etiology (heredity) were also considered. The relationship of chorea to rheumatism and endocarditis was entered upon. Infectious chorea was often accompanied by lesions occurring in other organs of the body than the brain, and he considered the relationship of microorganisms to chorea. Often bacteria became latent and subsequently gave rise to chorea. He concluded his paper by speaking of the management of chorea, the diet, mode of life, and medication.

Dr. Richard Cole Newton of Montclair said that the warships returning from the Orient recently had Japanese servants. Several weeks after leaving the East beriberi broke out among four Japanese and the only possible explanation of this was that it was a latent affection; it resembled in many respects chorea and was supposed to come from eating rice in a peculiar condition. It was also said to be due to an excess of carbohydrates in the diet.

Dr. Henry L. Coit of Newark reported a case of intractable chorea in which death seemed imminent; the situation was extreme and so serious that resort was made to bromides, hyocine, and other nerve sedatives. Somebody suggested the use of apomorphine with the best of results. He reported this treatment to show the possibilities of apomorphine in the worse cases of chorea, and when other measures seem to fail.

Dr. Margaret P. Brewster of Grantwood said that many cases of chorea were received at the Presbyterian Hospital, and their experimenting showed that the cases got well with no medication at all in the same time as those that received it.

Dr. George H. Balleray of Paterson, and Dr. Walter B. Johnson of Paterson discussed the paper. The discussion was closed by Dr. Trout.

A Plea for the Use of the Pharmacopœia vs. Proprietary Preparations.—Dr. H. H. Sherk of Camden presented this paper, which was read by Dr. Emma M. Richardson.

Dr. Daniel Strock of Camden, and Dr. Fred Miller Corwin of Bayonne discussed this paper.

Election of Officers.—*President,* Dr. Henry Marcy, Jr., of Riverton; *First Vice-President,* Dr. Edward J. Ill of Newark; *Second Vice-President,* Dr. David St. John of Hackensack; *Third Vice-President,* Dr. Benjamin A. Waddington of Salem; *Corresponding Secretary,* Dr. Daniel Strock; *Recording Secretary,* Dr. Wm. J. Chandler of South Orange; *Treasurer,* Dr. Archibald Mercer of Newark. Next place of meeting, Cape May, during the last week in June.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held May 24, 1906.

Dr. Charles L. Dana in the Chair.

This meeting was held under the auspices of the section on pediatrics.

Preliminary Report of the Work of the Medical Relief Committee.—Dr. Charles L. Dana announced that committees had been appointed by the counties of Kings, Queens, Nassau, and Richmond and other societies, and it was hoped that they would work with the committee appointed by the academy. When the committee met it was found that King's county had already raised a fund and were working alone. The committees of the Academy of Medicine, the County Medical Society, and Richmond County Medical Society were working together to secure funds for special purposes, the relief of the medical men who had suffered from the recent disaster in San Francisco. Already $6,000 had been raised, and probably $2,000 more, a fairly large sum of money when it was realized what had been done by these men individually. He called attention to the fact that the Association of American Physicians, at its recent meeting in Washington, had appointed a committee who would try to collect books from medical libraries in the different cities, and he said the academy would send 1,000 duplicates of books, besides the duplicates that were to be sold to the Cooper Medical College for the offer made by them, namely, $6,000.

The Health of the New York School Child, from the Point of View of the Department of Health.—Dr. John J. Cronin, Assistant Chief Sanitary Inspector, read this paper. He said that after all the public school child was a very healthy proposition, and just what influence the department might have had in improving living conditions was not always demonstrable. If the rules and regulations of the department were ideally carried out there would necessarily be less contagious illness; and whether it would ever be possible to produce an ideal condition among the inhabitants of this city that self-concern and concern for the members of the family would be paramount to the question of money or business, was a question to be settled before they could determine just what good might really be accomplished. The Department of Education held the Department of Health to the task of preventing as much contagion as was possible from occurring in the children of the public schools; consequently, school inspection was demanded and inaugurated in March, 1897. At the morning inspection the following classes of cases were examined: Those isolated on account of suspected contagion, those who had been absent for several days, and those excluded from schools. The pediculosis cases were easily disposed of by appointing school nurses to treat, advise, and visit the homes of the children to instruct the parents. Now it was rare to find cases with live pediculi in the head. The trachoma cases numbered at first 17,000, and the department was compelled to open an eye hospital and dispensary at Gouverneur Hospital in December, 1902, and also at One Hundred and Eighteenth street and Pleasant avenue. All operations were performed now at the One Hundred and Eighteenth street hospital, only a clinic being run at the other hospital. The number of cases from December, 1902, to March, 1906, treated by operation were 5,039; the number of revisits, 417,184; the number of cases rejected as not contagious, 889, and 74 cases that were not school cases. The number of cases from March, 1904, to May 12, 1906, at One Hundred and Eighteenth street hospital treated by operation, 106 not school cases, 2,955 school cases; the number of revisits, not school cases, 9,161, and 84,953 school cases; number of cases rejected as not contagious, 157 not school cases, 1,188 school cases. The oculists who were assigned to special duty of testing the vision of school children found that about 29 per cent. of them had defects of vision. The following was a brief report on the work performed from March 27, 1905, to March 31, 1906: Number of cases examined, 79,065; cases of bad nutrition, 4,537; of anterior glands, 22,493; of posterior glands, 4,989; of chorea, 1,184; of cardiac disease, 1,332; of pulmonary disease, 885; of skin disease, 1,574; of deformity of spine, 674; of deformity of chest, 500; of deformity of extremities, 663; of defective vision, 24,534; of defective hearing, 1,633; of defective nasal breathing, 8,974; of defective teeth, 29,386; of defective palate, 936; of hypertrophied tonsils,

13,411; of posterior nasal growths, 7,375; of defective mentality, 1,477; of cases where treatment was necessary, 50,913. Dr. Cronin thought that it would be interesting to note whether or not the number of contagious diseases would not diminish if the Department of Health could control the conditions so that adenoids, tonsils, and teeth might be properly attended to before the child was accepted as a member of a school. It would help diphtheria, the mortality of which was now so reduced that its treatment was uninteresting. They should look to reducing the number of cases. He asked why the child population of each tenement house should not be immunized at the time the case reported was attended to; secondary cases in families where there was a case of diphtheria, if the rest of the family were immunized, were so infrequent as to be of no account, .4 per cent. being the actual number. Day after day they found cases of sore throat in classes in which a pupil at home sick with diphtheria had attended; why shouldn't all the children exposed in the schoolroom be immunized? With immunization more generally adopted and faulty throat conditions relieved, the number of cases should be reduced. When it was learned what classroom the sick child attended, fumigation should be performed in this schoolroom on the very day that the knowledge had been obtained.

The Health of School Children.—Dr. Luther H. Gulick, Director of Physical Training, New York Public Schools, read this paper. (See page 121.)

The Physical Care of School Children.—Dr. R. G. Freeman read this paper. (See page 128.)

Mr. William H. Maxwell, Superintendent of Public Schools, said that Dr. Freeman had started out with a somewhat extremely strong statement about the effects of school work upon the health of the children, and he did not attempt to gainsay these statements, but they would have carried stronger conviction if they had been accompanied by the slightest particle of evidence upon which to base them. The Board of Health now excluded children from the public schools if they were the subjects of colds or showed a tendency to eruptions. It was well to mention this in order to emphasize the importance of producing evidence upon which to base criticisms made upon private and public schools. With regard to the matter of loss of sleep, as long as present conditions existed in this city, just so long would the children of New York be deprived of their sleep. He indorsed all that Dr. Freeman had said regarding the food question, and he hoped to see the day when New York City, as Paris now did, would provide a proper meal for these children in the middle of the day. The system of ventilation now in use in the public schools was doing well; no doubt it could be improved upon, and any information would be welcomed that would aid in improving the ventilation. He corrected Dr. Gulick's statement, that 70,000 children could not be accommodated in the schools, and said that these 70,000 children were on part time. As a matter of fact, they had as many seats and desks as children to-day in the schools, but probably on account of the shifting population, the children were not where those seats were, and the seats were not always where the children were. Mr. Maxwell thought it would be a splendid thing if the Academy of Medicine would appoint a committee, the names of the members of which would carry conviction, to investigate the subject of school desks, and tell them the best kind of furniture that would minimize the evil effects which sprang from the furniture now in use. He commended the work the Board of Health was doing, particularly the work done during the past five or six years, but he doubted their ability to do what was now proposed. For instance, the Department of Health proposed to examine every child before it was admitted to school, and no child was to be admitted until it was shown that its physical condition was good. In the fall 75,000 or 100,000 new children were received, many of them just landed from Italy, southern Russia, the Balkan Peninsula, and Asia Minor, and Mr. Maxwell said it would be a good thing to exclude them until they knew they were in good physical condition, but it was very hard to get these children to attend school at all. Their parents were illiterate and had no sense of the value of education. These mothers would welcome nothing more than that their children should be refused schooling. This was one of the small difficulties which the Department of Health would encounter in carrying out the proposition referred to, but Mr. Maxwell assured them that he would aid all he could in the furtherance of their plans to do this. If the health of the school children were to be improved in this city, it required a remedy far more drastic and more radical than anything the Department of Health could do; it meant a radical change in the housing of the population of this great city. Just as long as the tenement houses existed, as at present constructed, just so long would the health of these children suffer, both physically and mentally. No matter how hygienic one made the school premises, the central fact remained, that during the greater part of the twenty-four hours these children were compelled to live under conditions that not only did not foster but precluded good health.

Dr. A. Jacobi believed that plenty of money was to be had. If Mr. Maxwell required 35,000 more seats he could easily obtain them by excluding children under seven years from the schools. No child under this age should be permitted to attend school. He referred to the results of examining 30,000 school children in St. Louis, Mo., by Dr. Potter, where it was found that the best scholars were those with the best physical development, and this applied all over.

Dr. L. Emmett Holt spoke of the vast possibilities that existed in the way of preventive medicine, and the great strides that had been made along this line by Dr. Cronin and Dr. Gulick. The physicians should teach the mothers how to bring up their children in order to produce the best possible physical development. The children should be brought to the physician's office at least twice a year and be subjected to the same careful examination that the children in the public schools of this city received.

Dr. Wm. P. Northrup hoped the Board of Health would take up the matter of teeth examination and give it serious consideration. The department had attended to the eyes, nose, and throats of these children, and equal attention should be paid to the teeth.

Dr. Henry Dwight Chapin said that the physicians of this city agreed that the children in New York City were underdeveloped. This was the fault of bad housing and bad or insufficient food. The bad or insufficient food question could readily be solved, although the question of bad housing could not. The Association for Improving the Condition of the Poor had recently appointed a committee to look into this question and study it carefully. The tenement children were badly fed, and he hoped that this committee would report what proportion of these poorly nourished children was due to actual poverty, and also what proportion was due to ignorance on the part of the parents. Dr. Chapin believed that higher education was also at fault; during the past years the standards of colleges had been greatly raised, and it was in all probability due to the fact that college educators did not distinguish between mere instruction and education. He would like to see all the colleges lower their entrance examination at least one-half. The plan of raising the standards was bad and crowded the children too much during the period of their growth, and did not allow them sufficient time for sleep and meals.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	August 1–6
Arizona*	Ancil Martin, Phoenix.	Phoenix	October 1
Arkansas*	J. P. Runyan, Little Rock.	Little Rock	October 9
California	Chas. L. Tisdale, Alameda.	Los Angeles / San Francisco	Aug. 21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver.	Denver	October 2
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	Nov. 13
Delaware	P. W. Tomlinson, Wilmington.	Dover	Dec. 11
Dis. of Col'bia	W. C. Woodward, Washington.	Washington	October 11
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	October 17
Georgia	E. R. Anthony, Griffin.	Atlanta	October 9
Idaho	J. L. Conant, Jr., Genesee.	Lewiston	October 2
Illinois	J. A. Egan, Springfield.	Chicago	October 17
Indiana	W. T. Gott, 120 State House, Indianapolis.	Indianapolis	October 23
Iowa	J. F. Kennedy, Des Moines.	Des Moines	Sept. —
Kansas	T. E. Raines, Concordia.	Topeka	October 9
Kentucky*	J. N. McCormack, Bowling Green.	Louisville	October 23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans.	New Orleans	October 19
Maine	Wm. J. Maybury, Saco.	Portland	Nov. 13
Maryland	J. McP. Scott, Hagerstown.	Baltimore	Dec. 12
Massachusetts*	E. B. Harvey, State House, Boston.	Boston	Sept. 11
Michigan	B. D. Harison, 205 Whitney Building, Detroit.	Lansing	October 9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis.	St. Paul	October 2
Mississippi	J. F. Hunter, Jackson.	Jackson	October 9
Missouri	J. A. B. Adcock, Warrensburg.	St. Louis	August 8
Montana*	Wm. C. Riddell, Helena.	Helena	October 2
Nebraska	Geo. H. Brash, Beatrice.	Lincoln	August 8
Nevada	S. L. Lee, Carson City.	Carson City	August 6
N. Hamp're*	Henry C. Morrison, State Library, Concord.	Concord	January —
New Jersey	E. L. B. Godfrey, Camden.	Trenton	October 16
New Mexico	B. D. Black, Las Vegas.	Santa Fe	Dec. 3
New York	C. F. Wheelock Univ of State of New York, Albany.	New York, Albany, Syracuse, Buffalo,	Sept. 25
N. Carolina*	G. T. Sikes, Grissom.	Morehead City	May 1907
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks	July 3
Ohio	Geo. H. Matson, Columbus.	Columbus,	Dec. 11
Oklahoma*	J. W. Baker, Enid.	Guthrie	Sept. 25
Oregon*	B. E. Miller, Portland.	Portland	
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	Dec. —
Rhode Island	G. T. Swarts, Providence.	Providence	October 4
S. Carolina	W. M. Lesler, Columbia.	Columbia	June 1907
S. Dakota	H. E. McNutt, Aberdeen.		
Tennessee*	T. J. Happel, Trenton.	Memphis, Nashville, Knoxville,	May, 1907
Texas	T. T. Jackson, San Antonia.	Houston	October 16
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.	October 1
Vermont	W. Scott Nay, Underhill.	Montpelier	January 8
Virginia	R. S. Martin, Stuart.	Richmond	Dec. 11
Washington*	C. W. Sharples, Seattle.	Spokane	January 2
W. Virginia*	H. A. Barbee, Point Pleasant.	Clarksburg	Nov. 13
Wisconsin	J. V. Stevens, Jefferson.	Madison	January 4
Wyoming	S. B. Miller, Laramie.	Cheyenne	Sept. 5

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Requirements of the State Examining Boards.—1. The following States require both a diploma and an examination: Arizona, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

2. The following States require an examination only: Alabama, Arkansas, Massachusetts, Mississippi, Missouri, Oregon, Rhode Island, Tennessee, Texas, and West Virginia.

3. The following States require either a diploma or an examination: Colorado, Indian Territory, Nevada, and New Mexico.

Oregon.—At the examination held in May, there were 41 applicants; of this number only 18 passed.

Illinois.—This State is no longer a member of the American Confederation of Reciprocating Examining and Licensing Boards, having withdrawn at the June meeting. At the same time it decided that after January 1, 1907, it will not reciprocate with any State board which exacts an examination of a candidate who has already passed an examination before another board.

North Carolina still declines to consider the matter of reciprocity. It is of the opinion that is not so much difference between the technical qualifications required by the examining boards of the different States as there is in the minimum standard of the entrance examinations in the different medical schools.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending July 21, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	393	182
Diphtheria	206	28
Measles	268	8
Scarlet Fever	72	6
Smallpox	—	—
Varicella	29	—
Typhoid Fever	60	17
Whooping Cough	59	7
Cerebrospinal Meningitis	3	12
Malarial Fever	.....	.....
Totals	1,090	260

Osteomalacia Cured by Causing Atrophy of the Ovaries by the X-Rays.—Ascarelli, since it has been experimentally established that the ovaries may be made to undergo atrophy by the use of the *x*-rays, has attempted to substitute radiotherapeutics for ovariectomy in the treatment of severe cases of osetomalacia. In one case treated by this method, after two months the patient commenced to improve, while menstruation became abundant, irregular, and painful. After five months the patient was entirely cured and menstruation had disappeared. Five months had elapsed since then and there were no symptoms of the disease, and the menstruation had not reappeared.—*La Riforma Medica.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending July 21, 1906.

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
Illinois, Galesburg	July	7–14	9	..
Louisiana, New Orleans	July	7–14	10	1
Massachusetts, New Bedford	July	7–14	2	..
Montana, General	June	1–30	7	1 imported
New York, New York	July	7–14	2	..
Ohio, Cincinnati	July	6–13	1	..
South Carolina, Camden	July	7–14	1	..
Tennessee, Memphis	July	7–14	1	..
Texas, Hopkins County	To July 12		50	..
West Virginia, Marshall County	April	1–July 14	24	..
Wisconsion, Appleton	July	7–14	3	..
La Crosse	July	7–14	1	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	May	26–June 9	2	..

SMALLPOX—FOREIGN.

Chile, Antofagasta	May	21–June 4	8	4
Great Britain, Hull	June	23–30	1	..
Greece, Athens	June	18–25	..	1
India, Bombay	June	12–19	..	3
Calcutta	June	2–9	..	33
Karachi	June	10–17	7	1
Madras, Madras	June	9–15	..	5
Rangoon	June	2–9	..	8
Siberia, Vladivostok	May	28–June 4	3	..

YELLOW FEVER.

Costa Rica, Limon (Thirty miles from—)			3	..
Mexico, Merida	June	24–July 7	15	12

PLAGUE.

Australia, Brisbane	May	16	..	1
Fremantle	May	31	1	..
Perth	May	15	..	1
Rockhampton	May	13	1	..
Sydney	May	10	..	1
India, Bombay	June	12–19	..	67
Calcutta	June	2–9	..	43
Karachi	June	10–17	51	49
Rangoon	June	2–9	..	74
Chile, Antofagasta	May	20–June 4	10	1
Egypt, Alexandria	June	23	1	..
Minich	June	27	1	..
Peru, Lima	June	9–16	1	1
Paita	June	9–16	1	1
Trujillo	June	9–16	..	1
Japan, Formosa	May	1–31	..	788

CHOLERA—INSULAR.

Philippine Islands, Manila	May	26–June 9	2	2
Provinces	May	26–June 9	6	2

CHOLERA—FOREIGN.

India, Bombay	June	12–19	..	20
Calcutta	June	2–9	..	38
Madras	June	9–15	3	..

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Original Articles.

DIAGNOSTIC FEATURES OF SURGICAL DISEASES ATTENDED WITH ACUTE JAUNDICE.

BY A. A. BERG, M.D.,

NEW YORK.

ADJUNCT SURGEON, MT. SINAI HOSPITAL

THE staining of the skin and mucous membranes with the coloring matter of the bile or its derivatives results either when the bile ducts are obstructed or when there is an excessive destruction of red blood cells in the liver. In the former instance the bile stagnates in the biliary capillaries of the liver, when it is reabsorbed into the blood and so gives rise to obstructive jaundice, and in the latter case the liver elaborates the hemoglobin that is set free by the excessive hemolysis into bile pigments, which, being secreted into the biliary capillaries in greater amount than can be passed on by them into the larger bile ducts, is partly resorbed into the circulation and thus occasions hemohepatogenous jaundice.

It was formerly considered that the presence of the salts of the biliary acids in the urine which occurs with obstructive jaundice distinguished this variety of icterus from the hemohepatogenous type. But as not all the cases of the former are attended with these salts in the urine, this method of their differentiation does not hold good.

Simple as is this pathogenesis of icterus, so complex and varied are the diseases that provoke it. My intent this evening is to consider from a diagnostic standpoint the more important surgical diseases, of which one of the symptoms is an acute jaundice.

It is quite commonly considered that all cases of liver abscess are accompanied by jaundice, and yet in practise this is not found to be the case. The writer is often asked by junior members of the house staff to explain the absence of jaundice in a case that has been diagnosed as one of liver abscess, and only recently he was told in the consulting room by a colleague that liver abscess had been excluded, firstly, because the patient was not jaundiced, and, secondly, because liver suppuration in this climate is very infrequent. Both of these objections fell to the ground when aspiration of the liver yielded pus.

Suppuration within the liver occurs in two forms, the single tropical abscess and the acute single or multiple abscesses. The former is attended with jaundice only when the abscess occludes a large number of the smaller ducts within the liver or compresses the extrahepatic portion of the hepatic or common bils ducts. The latter is attended with jaundice when either of the above conditions prevail or when the bacteria which occasion the hepatic suppuration are very virulent and cause a marked degree of hemolysis. The intensity of the jaundice in any particular case depends upon the amount of compression or occlusion of the bile ducts and upon the degree of hemolysis.

The diagnosis of liver suppuration does not rest upon the presence or absence of icterus. The existence of a cause for this affection such as suppuration or ulceration in the abdomen within the area drained by the portal vein and its tributaries, *e.g.* appendicitis; cholecystitis, gastric, duodenal, intestinal, or colonic ulceration, hemorrhoids or trauma over the liver, together with the physical signs of enlarged liver and pain and tenderness over the liver and temperature elevations are the important data upon which we rely to establish a diagnosis of this condition.

As regards enlargement of the liver, it is to be remembered that enlargement upward and backward with consequent elevation of the diaphragm and more or less compression of the base of the right lung, and enlargement laterally with consequent widening of the lower intercostal spaces and bulging outward of the lower ribs are equally frequent with enlargement directly downward, and yet in our routine physical examination how seldom is it that we determine by percussion and auscultation the upper posterior limits of this organ? Similarly the determination of the size of the left lobe is usually overlooked, and yet this may be the only portion of the organ that is enlarged. In some cases an enlarged left lobe may extend over into the left hypochondrium, where it may be mistaken for an enlarged spleen. The differentiation, however, is readily made if we remember that the latter organ has a deep notch on its anterior border.

It is to be noted that the best way to elicit liver tenderness is to suddenly compress the lower ribs with the flat of the hand. As the greatest tenderness exists at that site at which the abscess is most superficial, it is important in every case to ascertain by pressure with the finger tip the area of most acute tenderness, for it is at this site that exploratory aspiration or incision should be made.

The presence of pus can thus with fair certainty be diagnosticated from the clinical history and the physical signs, but it can only be positively confirmed by aspiration or exploratory incision. When the suspected abscess is in the lateral or posterior portions of the right lobe we may resort to exploratory aspiration, using therefor a fine calibered long needle and making the puncture through the intercostal space at the site of greatest tenderness. But when the suspected abscess is in the median portions of the right lobe or in the left lobe it is better to resort to exploratory incision, because with the needle we may injure some one of the adjoining hollow or vascular organs.

Some months ago I had the privilege of pre-

senting to you a case of acute infectious cholangitis with jaundice. The infrequency of these cases will justify me in rapidly reviewing the clinical history at this time.

Louis S., thirty-four years old, was admitted to the service of Dr. Gerster at Mt. Sinai Hospital on July 27, 1904. His family history was negative. He stated that from his tenth year of life he had had at periods of three to five years attacks that were similar to the present illness. These attacks were characterized by pain in the epigastrium and right hypochondrium; in some he had chills and in some he was jaundiced. Each attack lasted for four or five weeks, and between them he felt perfectly well. His bowels were always constipated and had to be moved by enemata.

His present illness was of seven days' duration. Its onset was sudden with chill and marked by severe pain in the epigastrium and right hypochondrium. He vomited several times. Since then he became jaundiced, his stools being very light, like coagulated milk, and his urine dark brown; he had two or three chills a day, and the pain continued.

On admission he had a severe shaking chill, his temperature was 102°, pulse 98, and respirations 27. He was markedly icteric; his lungs and heart were normal; his abdominal wall was rigid, especially in the right hypochondrium, where there was marked tenderness. The liver was enlarged, the flatness extending from the sixth rib to two fingers' breadth below the costal border. In the gall-bladder region was a tumor that was tender, fused with the liver above, and moved with respiration. The spleen was not enlarged. There was no free fluid in the abdominal cavity. The leucocytes numbered 21,000 to the cubic millimeter.

The previous history of similar attacks of pain and jaundice, though very indefinite and vague, prompted me to diagnosticate biliary lithiasis with acute cholangitis. I immediately opened the abdomen by vertical incision in the right hypochondrium through the fibers of the right rectus muscle. The liver was found to be enlarged. The tumor that was felt prior to operation was found to be an enlarged, distended gall-bladder that was dark red in color, and to it the omentum and intestines were adherent. There were no stones in the gall-bladder or bile ducts. The common bile, cystic and hepatic ducts were considerably thickened and felt like rigid cords of lead-pencil thickness. The contents of the gall-bladder could not be emptied into the ducts by pressure. The gall-bladder was aspirated, about 100 cubic centimeters of black bile being withdrawn. A culture was at once made from it. The viscus was then incised and its interior inspected and palpated; the mucous membrane was dark red in color, and there were no calculi to be felt. The gall-bladder was drained by large-sized tube and the rest of the abdomen closed by layer sutures. The day after the operation the temperature rose to 104°, but thereafter there was a gradual defervescence. The jaundice gradually disappeared, the patient making an uninterrupted recovery. The bile lost its black color after the first week and became golden brown in color. The bile on culture was reported to contain in pure growth the bacillus of Friedlander. A blood culture taken on the third day after operation remained sterile. Widal reaction of the serum was negative.

Another case of somewhat similar character that I operated upon some three years ago I reported in conjunction with my colleague, Dr. Libman, whose excellent bacteriological investigations in connection therewith have given to it a classical place in medical literature. The history of this patient was in brief as follows:

Charles I., thirty-three years of age, I saw with Dr. Hubbard of Boro Park, on August 29, 1901. His previous history was practically negative. Eight days prior to the day I first saw him he was taken suddenly ill with nausea, vomiting, and prostration. His temperature, taken by mouth, at that time was 100°. There was abdominal distention and pain in the epigastrium. He remained in bed only two days, but felt too weak to return to his work. On August 28, 1901, he was suddenly seized with severe colicky pain located in the epigastrium and right hypochondrium, vomiting, and constipation, his mouth temperature rising to 104.2°. The following morning the temperature fell to 101°, but in the evening it rose again to 103°.

On admission to the hospital August 3, 1902, his skin was subicteric, the temperature was 105.4°, pulse 112, respiration 26. The abdominal wall was rigid, particularly on the right side. The liver was slightly enlarged, and below the costal margin in the right hypochondrium was to be felt a very tender mass about the size of a lemon, and connected with the liver. The spleen was enlarged to percussion, but there was no roseola, no Widal reaction in the blood serum, and no Ehrlich reaction in the urine. Leucocytes numbered 15,000 to the cubic millimeter.

The case appeared to me to be one of liver abscess or acute suppurative cholecystitis, and, accordingly, on September 1 I opened the abdomen in the right hypochondrium through the fibers of the right rectus muscle. The mass which had been felt was found to represent a tongue-shaped lobe of the liver, *i.e.* the so-called Riedel's lobe, overlying a distended gall-bladder. On the surface of Riedel's lobe there was some inflammatory fibrin. The liver substance was not indurated or softened. The gall-bladder felt moderately tense; its contents could not be expressed through the ducts into the duodenum. The cystic and common bile ducts felt thickened, but contained no stones. The gall-bladder was aspirated and dark, thick bile obtained. The liver was then aspirated in several directions with negative result. As there seemed to me to be no indication for drainage of the gall-bladder and bile ducts I closed the abdominal wound. After the operation the temperature varied between 103°-106°; intense jaundice was established with marked cerebral symptoms. On September 9 incessant vomiting developed, and on the following day the patient died.

The fluid aspirated from the gall-bladder contained in pure culture the paracolon bacillus. The blood and urine likewise contained the same organism in pure culture. On September 8 a positive Widal reaction was reported in a dilution of 1-200. A very limited autopsy showed an acute parenchymatous degeneration of all the viscera, and in the intestines typhoid ulcerations, some healed and some in the process of healing.

If we summarize these two cases we will find that in both the onset of the symptoms was acute; in one of the cases with repeated chills, with pain in the epigastrium and right hypochondrium, high fever of remittent type, nausea, vomiting, and increasing jaundice. On examination both cases showed an enlarged liver, a tender and enlarged gall-bladder, and a moderately increased

leucocytosis. On opening the abdomen the liver in both cases was found to be enlarged, and in one case it was covered with patches of fibrin; the gall-bladder was distended, its contents could not be expressed through the ducts into the duodenum, and the extrahepatic bile ducts were thickened and rigid and enlarged. The interior of the gall-bladder was dark red and congested in the case in which this viscus was opened, the walls were friable, and the contained bile was black and viscid. There were no stones in the gall-bladder or ducts. Aspiration revealed no pus in the liver. In the fatal case autopsy showed acute degeneration of the viscera and typhoid ulcerations and scars in the intestines. The bile on culture was shown to contain a pure culture of the Friedlander bacillus in the one case and a pure culture of the paracolon bacillus in the other. In the former blood culture was sterile; in the latter it, too, showed a pure growth of the paracolon organism.

The enlarged liver, the distended, tender gall-bladder, the thickened swollen ducts, and the infected dark viscid bile, together with acute onset of high fever, nausea, vomiting, pain in the epigastric and right hypochondriac regions, and jaundice, indicate in both of these cases an acute infectious cholangitis.

How shall we explain the method of this infection of the ducts? The liver, as we know, receives, through the portal vein and its tributaries, the bacteria which are resident in the intestinal tract, and through the hepatic artery bacteria which are resident in the general blood stream. These bacteria it tends to destroy. If, however, they are very numerous or if the liver cells are diseased and therefore fail to dispose of them, then the bacteria escape with the bile into the biliary capillaries, ducts, and gall-bladder; these viscera they infect, and in them they can occasion an acute cholangitis. In one of our two cases the infection of the biliary capillaries, ducts, and gall-bladder followed an acute, systemic infection with the paracolon bacillus, while in the latter the infection of the ducts with the Friedlander bacillus was probably carried to the liver from the intestinal tract by the portal vein.

I regret very much that I did not drain the biliary ducts in the first of the two cases as I did in the second one, for the carrying away of the infected bile might have had a favorable influence toward helping the patient to eliminate the systemic infection. The truth of the matter is that we surgeons did not in those days appreciate that acute infectious cholangitis could occur as a primary infection without the presence of gallstones, and, finding no stones in the ducts or gall-bladder in this case, and no gross pathological changes, I decided not to drain. To-day it is far different. We find, upon opening the abdomen, the changes in the liver and ducts above mentioned, whether or not there are stones in the biliary apparatus, we establish free drainage of the gall-bladder and ducts, to which procedure the happy outcome of my second case was undoubtedly due.

It is to be noted that such acute infective cholangitis can also occur in any of the acute infectious diseases, especially typhoid and pneumonia, and it is still to be decided whether the malignant jaundice that accompanies some of these diseases, especially typhoid, could not be favorably influenced by drainage of the bile ducts and gall-bladder.

Diagnostically these cases of primary acute infectious cholangitis may offer the greatest difficulty, for the pain in the epigastrium and right hypochondrium and the jaundice are thoroughly suggestive of gallstone disease, to which the cholangitis is secondary, while the enlarged tender liver, moderately increased leucocytosis, and fever and chills speak for miliary abscess of the liver.

It will aid us some if we remember that in gallstone disease of long standing, for it is especially the long-standing cases of this affection that are complicated by cholangitis, the gall-bladder is most likely contracted and small and not palpable on account of cicatricial contraction of the viscus from repeated previous attacks of cholecystitis, whereas in the primary acute infectious cholangitis cases the gall-bladder is distended, enlarged, and readily palpable. The history of previous attacks of biliary colic with the passage of stones with the stools of course speaks strongly in favor of the cholangitis being secondary to preexisting gallstone disease. Miliary abscesses of the liver always follow suppuration or ulceration of some one of the intraperitoneal organs, and the history or clinical evidences of such affection is, of course, strongly suggestive of such miliary abscesses in the liver. We must not forget, however, that acute infectious cholangitis may secondarily occasion miliary abscesses of the liver, and, vice versa, that miliary abscesses of the liver may cause an acute infectious cholangitis.

The labors of Kehr, Riedel, Courvoisier, and others have taught us the meaning of acutely developing jaundice in gallstone disease. With an attack of biliary colic jaundice will develop when one or more calculi enter into the common bile duct and more or less completely occlude its lumen. If the calculi do not enter into the choledochus there will be no jaundice. This occurrence of icterus after an attack of colicky pain which is located in the right hypochrondrium, and radiates to the back and right shoulder at once enables us in the vast majority of cases to diagnosticate biliary lithiasis. But how different it is when, because the stones do not leave the gall-bladder, the patient suffers the pain, but does not become jaundiced. In such cases we often experience the greatest difficulty in determining the cause of the pain; for pyloric and duodenal ulcer, pancreatic stone, aseptic renal stone, unilateral chronic nephritis, and even chronic appendicitis, all can provoke pain that is located and referred to the same regions as is that which attends biliary lithiasis.

A man whom I saw some two years ago with my friend Dr. Rieser affords an instance of the difficulty that is sometimes experienced by even the most expert in making a diagnosis in such cases. Max L., a barber twenty-seven years old, with an entirely negative family and previous personal history, was suddenly taken with pain in the right iliac region. The pain was severe and a few days after its onset it moved upward to the liver region. Subsequently the pain came on in attacks; it started in the region of the liver and passed upward to the sternum, also around the side to the back and upward, to the left shoulder. With the pain the patient felt nauseated, but did not vomit. The conjunctivæ, he says, were yellow, but this had passed away. There was no change in the stools or skin. He had lost ten pounds in weight and considerable strength during the nine weeks of his illness.

On physical examination there was a very slight subjunctival icterus. His lungs, heart, and

liver were normal. There was no abdominal rigidity; no abdominal tenderness except on deep palpation in the right iliac region. There was no mass in the gall-bladder region.

The only symptom, then, was the pain, and, in spite of most careful observation by his family physician, who summoned to his aid some of the best and most expert diagnosticians in the city, the cause of the pain remained in doubt. Exploratory laparotomy revealed an open pyloric ulcer, for the relief of which I established a posterior gastroenterostomy with complete relief of the patient's suffering and entire cure of the ulcer.

In such cases we will be most successful in diagnosis if in a systematic fashion we set about excluding one thing after the other. An examination of the chemical composition of the gastric juice and a determination of the gastric motility will afford valuable data as to the presence of pyloric or duodenal ulcer; for if there is a constant hyperacidity, and if the pain is worse immediately after eating, and if there is a cutaneous head zone of pain corresponding to that provoked by pyloric or duodenal ulcer, and if there are eructations of acid material, we have considerable evidence in favor of this condition. The occurrence of slight subconpunctival icterus, as in the case just narrated, is no argument against gastric ulcer, for this may be due to peripyloritic adhesions which kink the common bile duct, or, in the case of duodenal ulcer, to catarrhal swelling of the papilla of Vater.

Cystoscopic examination of the vesical ureteral orifices and separation of the urines with the ureteral catheters with careful chemical and microscopical examinations of the individual urines combined with *x*-ray examination will throw considerable light upon those obscure diseases of the kidney, such as aseptic stone, chonic unilateral nephritis, and early tuberculosis, that provoke pain in the right hypochondrium and back.

How we welcome in these doubtful cases an acute jaundice developing after an attack of pain! The uncertainty and doubt in which we have been groping are at once replaced by a flood of light. The diagnosis is now readily established, and if later on stones are found in the stools the diagnosis is only made more certain.

But, after all, our uncertainty of diagnosis in such cases need not weigh upon us too heavily. As Wm. Mayo has said, "The essential point to determine in these cases is whether they are to be treated medically or surgically." And if a patient with continuous or colicky pain in the right hypochondrium is not relieved by a well-instituted and carefully conducted internal treatment with dietary regulations, and is rendered unable to attend to his customary duties by such pain, it becomes the imperative duty of his attendant to advise exploratory diagnostic laparotomy.

Acute inflammations and distention of the gall-bladder secondary to calculous disease is attended with jaundice when the distended enlarged viscus compresses the common bile duct, or when there is also present a complicating cholangitis. The icterus in these cases is rarely deep. The distended enlarged gall-bladder, without any enlargement of the liver and spleen, distinguishes most of the cases of jaundice due to compression of the choledochus by the gall-bladder from the cases of jaundice due to obstruction of the common bile duct by a calculus; for, according to Courvoisier's law, the gall-bladder in these latter cases is contracted and nonpalpable, and the liver and spleen are enlarged. And similarly the presence of an enlarged tender gall-bladder distinguishes the cases of acute jaundice due to cholangitis that originates from a cholecystitis, from those cases of cholangitis that take their starting point from an impacted stone in the choledochus.

We are often called upon to decide in a case of acute jaundice following an attack of biliary colic whether the stone has passed or has remained impacted in the duct. The finding of stones in the stools does not answer the query, for a number of stones may have passed out of the gall-bladder into the common duct, some of which may have passed through it, and some of which may have become impacted in the duct. There is no way in which we can tell, off hand, whether all of the stones have passed. Such cases must always be observed at least for four weeks before we come to any conclusion. If, after this period, the jaundice persists, no matter whether it is constant in intensity, we may assume that the stones are impacted in the choledochus. I remember the case of a woman from whom about two years ago I removed about fifty stones from the common bile and hepatic ducts, and from the hepatic ducts of the liver. I established drainage of the common hepatic duct, and for about six weeks small calculi that came down from the hepatic ducts in the liver were continuously discharged through the drainage tube. When for two weeks no further calculi appeared I removed the drainage tube and allowed the wound to heal. She remained well for about a year, and then had an attack of biliary colic, followed by moderate jaundice. She was naturally much concerned as to whether she would have to be reoperated. After a week's time the jaundice entirely disappeared, and, though there have been one or two recurrences of pain, there has been no further jaundice, so that I hope she has at last eliminated all the calculi from her liver.

This case is of deep interest as showing the possibilities of a primary formation of calculi in the biliary ducts of the liver, for though her gall-bladder was absolutely free of calculi and was in every respect normal, her intra- and extrahepatic biliary ducts were simply choked with stones.

Syphiloma or gumma of the liver when they break down are sometimes attended with acutely developing jaundice. This, together with fever and the presence of a painful tumor in the gall-bladder region, are strongly suggestive of biliary lithiasis with acute cholecystitis. Careful examination, however, will reveal that there are multiple nodules in the liver, that the liver edge is thick and rounded, that there are other evidences of syphilis in the skin, mucous membranes, and bones, and a little cross-questioning will usually elicit the history of the initial primary lesion of syphilitic disease.

I have thus far entered into the clinical aspects and diagnostic features of the more important acute surgical affections of the liver and gall-bladder and adjoining organs that have as one of their symptoms an acutely developing icterus. It was stated at the beginning of this paper that icterus also follows when from any cause there is an increased hemolysis. Probably the most frequent surgical causes of such an increased destruction of the red blood cells are bacterial infections and the administration of ether or chloroform. This explains the jaundice that occurs in acute osteomyelitis, in diffuse septic peritonitis,

in acute appendicitis, etc. The clinical evidences afforded by the primary malady usually enable us to recognize it, and to account for the jaundice. Such icterus may be of the deepest grade. Clinically it has significance only in so far as it bears evidence of the severity of the infectious process.

The statement I made at the beginning of this paper, that the pathogenesis of jaundice is simple, but that the diseases that provoke it are varied and multiple is seen to be true from the remarks I have made. And yet I have considered only the most common of the surgical diseases that are attended with this symptom. What a number of possible diseases enter our mind as we approach the bedside of an acutely jaundiced patient!

If we are to differentiate successfully between them and establish the correct diagnosis, we must elicit a careful anamnesis, make a thorough physical examination, and then carefully analyze the data we have obtained.

923 Madison Avenue.

THE THERAPEUTIC ACTION OF SPLENIC EXTRACT IN MALARIAL INFECTIONS.

By CHARLES RAYMOND CARPENTER, M.D.,

Leavenworth, Kansas

Something over six years ago an article was published by the writer in the Medical Record,* in which attention was called to the therapeutic effects of the substance or the extract of the spleen. It was particularly recommended in typhoid fever, although it was stated that the number of cases treated to that date had been too small to warrant a final conclusion as to its value. During the time intervening between that date and the present, the writer has used the remedy spoken of almost constantly, with two results.

The first of these is to prove that given internally in typhoid fever, while it seems to influence the temperature favorably, it more than offsets this by increasing the diarrhea, and its final effect is therefore not favorable. This fact is the more notable when we take into consideration the other fact brought out by some of the cases cited below, that the remedy frequently controls diarrhea from other causes.

But its evident control over temperature led to its use in malarial infections, and, with the second of the two results already mentioned, the most surprising and complete success. In more than six-years' continuous experience, and the treatment of hundreds of cases of malarial infections of all types, both simple and complicated by all sorts of conditions, not a single case has been met with which did not yield to this remedy.

Every physician who has practised in the malarial districts of the United States knows what this means. There is not a pathological condition known to afflict the human race in these same localities that may not be, and is not, continually liable to be complicated by this ever-present pest; and always with the result of exaggerating the difficulties of the case, and the instant demand that quinine, or some equally effective remedy, be administered.

Many substitutes have been recommended and used, but we have always come back to quinine. And many will say immediately, as they see or hear the title of this paper, "What, another? Excuse me, I do not care to try any more substitutes!" Indeed they cannot well be blamed, for it must be admitted that they have some excuse for their prejudice. There are many others, however, who recognize that quinine is at all times a disagreeable remedy to take, owing to its profound influence upon the nervous system when given in doses large enough to destroy the life cycle of the plasmodium. And they also recognize the fact that its effect upon the organism is not always of a transitory character. Many have claimed that its effect was transitory, but the evidence of accumulated cases has now piled up so high that it would seem difficult for anyone now to deny that the deleterious effect of quinine is frequently permanent, or difficult to remove.

But even when this effect is of such a character that it may properly be called transitory, it is frequently so disagreeable, not to say alarming, that it is far better eliminated when possible. What is the use of producing disturbances of vision, or blindness, or deafness, or even tinnitus aurium, or vertigo, or headache, in order to cure your patient, if you can just as easily and as certainly do so without those inconveniences?

Quinine is an absolutely reliable remedy for malarial infections. No one will ever deny that; and it has occupied a position in the history of medicine, the importance of which is perhaps not exceeded by any other single remedy in the pharmacopœia. But it is here affirmed, on the warrant of six and a half years' continuous use in hundreds of cases in every phase of general practice, that the extract of the spleen is an equally reliable remedy in the treatment of malarial infections. And furthermore, that in all but excessive doses, it is devoid of all the unpleasant and injurious effects that have been attributed to quinine, whether rightly so or not.

This is a broad statement; but if a remedy cannot show what it is worth in six and a half years of continuous use by one in active general practice, in a locality where malarial infections are always in evidence and to be reckoned with, it seems reasonable to infer that there is small probability of its ever doing so. Splenic extract, in the hands of the writer, has shown itself to be a real remedy for malarial infections.

Of course there are certain conditions, as in the case of perhaps all remedies to a greater or less extent, that make for success, and which if neglected may as easily contribute to failure in its use. Being an organic preparation, care is necessary that it do not spoil in the hands of either the druggist or the patient. This difficulty is very easily overcome if the condition which contributes most to its deterioration is borne in mind. This is the absorption of moisture, even in a slight degree. Careful laboratory methods have enabled manufacturers now to produce a preparation that will keep in almost any ordinary temperature. But after the original package has been opened, care is necessary in handling the remedy to see that it is not allowed to remain long in contact with the air.

Some druggists are strangely indifferent, and need to be admonished that it is necessary to keep the bottle tightly corked while it is sitting on their shelves, or it soon loses its therapeutic value.

Physicians should never prescribe it without keeping this practical point in mind. Be sure in the first place that your druggist understands how to preserve the therapeutic properties of the extract, and in the second place, be sure to see that it is dispensed in such a manner that those properties will be preserved while in the hands of the patient.

The best and safest way to prescribe it is in powdered form, enclosed in capsules. Even when pre-

*"Splenic Extract and the Splenic Function," Medical Record, February 17, 1900.

scribed for a patient who cannot swallow capsules, as in the case of babies or small children, it is best so to prescribe it, for it can always be removed from the capsule when given, if necessary, or poured directly from the capsule upon the tongue of the patient. When prescribed in this manner, the gelatine coating is practically a guarantee that no moisture will be absorbed by the remedy from the atmosphere.

Tablets are very convenient, and so long as they are dispensed in the original package, and the patient understands the importance of keeping the bottle tightly corked, no trouble need be anticipated. But if, as is frequently the case, it is desired to dispense them in small quantities, the druggist puts them in the usual loosely closed pill box, they are kept in the sick room for a day or two, absorb moisture, and turn dark. The patient continues to take them, but does not improve or gets worse. The doctor loses patience, prescribes quinine, and says organotherapy is merely a fad anyhow, if not a fraud.

The preparation should always retain its light brownish-gray color, and should have a faint, sweetish, not unpleasant odor. The taste is also sweetish, not unpleasant, and children do not object to it. Any preparation which has a disgusting, or in any degree unpleasant odor, cannot be said to fulfill the conditions which contribute to success in its use.

The only other condition which, provided the preparation used is of proper quality, blocks the way to success in the treatment of malarial infections with splenic extract, is the one which not infrequently prevents good effects also from the administration of quinine. This is a reduced proportion of hemoglobin in the blood.

This is easy to understand, if we consider that, as seems likely, the leucocytes produced in the spleen, and which constitute, together with those produced by the glandular systems, the defensive element of the blood against disease, are elaborated from materials furnished by the red corpuscles, which are found in the spleen in all stages of disintegration and destruction. The findings of experimental physiology all point very suggestively to the probability that the spleen is one of the most important heating plants of the body, with the red corpuscles acting as the fuel. And now we have presented to us from the therapeutic side of the subject a corroboration not only of this, but also of the theory that the red corpuscles are the building materials from which are made the leucocytes that come from the spleen. For one of the most essential ingredients of the red corpuscles, that upon which depends, we are told, their oxygen-carrying power, is the hemoglobin. But we find that when this hemoglobin is very much reduced, the spleen is powerless to produce the usual output of leucocytes, and fails to do so, no matter how much we stimulate it by supplying its own elements and active principles. That is to say, it fails to produce its known therapeutic effect under these circumstances. On the contrary, as soon as we begin to reproduce the hemoglobin by giving hematinics, the usual therapeutic dose of splenic extract produces the desired effect. The spleen responds; the malarial infection disappears, quietly, without shock or disturbance of any kind.

Many have thought that the therapeutic effects of glandular extracts were due to a common principle found in them all, in short to nuclein, or nucleinic acid, and have advocated giving a preparation of nuclein made from some easily procurable substance, such as yeast.

The chemistry of the nucleins is not well understood, but it is a vital mistake to suppose that any one of them can do the work of all. If organotherapy has shown anything, it has shown that the substance or extracts of the different glands of the animal body differ as sharply in their therapeutic action as do the extracts made from the different plants of the vegetable world. This fact leads naturally up to some strange and far-reaching questions.

How far may we account for the physiological and therapeutic effect of some drugs by the fact that they stimulate, or depress, or restore, or modify, the functions of those organs of the body which we are just now discovering have the power when given internally to produce similar effects on the organism? Is it possible that the developments of modern organotherapy have unveiled to our eyes that mysterious *vis medicatrix naturæ,* of which the writers of a century gone by had much to say, and which, in all times, the true physician has been obliged to admit is his last and greatest resource?

We are in the habit of saying that quinine has a specific action in malarial infections. How much of that action is due to its power of restoring simply the function of the spleen, which the familiar symptoms of the disease indicate must be impaired? True, it has a certain germicidal action, which may easily be demonstrated outside the body, but if its specific effect in malarial infections was dependent on this action alone, would it not be reasonable to suppose that other germicides of equal or greater power would have at least as good an effect in the same class of infections? Certainly it would seem so. But we know that they do not.

You may saturate the body with mercury, or iodine, or sulphur, or carbolic acid, or alcohol, or any of their compounds or derivatives; you may saturate the body to the last degree with any known antiseptic, no matter what its power, but you cannot produce the well-known specific effect of quinine in malarial infections. The best substitutes we have had for quinine, such as berberine, arsenic, and iodine, while they undoubtedly have more or less germicidal power, are not, with the exception of the last, usually classed as germicides. And this there is good reason for believing produces its effect in malarial infections more by its powerfully stimulating action on the lymphatic glands of the body than by any directly germicidal action. This, by the way, should be borne in mind while considering some of the remarks further on, relative to glandular extracts. Germicides, as such, are not notable for their beneficial action in malarial infections. On the contrary, splenic extract, which has no proved germicidal action outside the body, produces identically the beneficial effects of quinine in these infections, and without any of its bad effects.

One of the most notable things that follow the administration of quinine is the rapid reduction in the size of the spleen. We say habitually that this is one of the effects of quinine; and so it is in a way, but the same result follows the administration of splenic extract.

Does it not seem probable, therefore, that the effect of the plasmodium upon gaining entrance to the circulation, is to inhibit the function of the spleen? At the same time, it rapidly destroys the red corpuscles, which constitute the blood fuel, as well as the material necessary for building the leucocytes. The organ seems paralyzed. A steady stream of materials is pouring into it which it is not able to use. Its contractile tissues relax; it becomes

turgid and swollen. It is powerless to produce fresh leucocytes, and the old ones are exhausted, or dying, or dead. Examine the blood under the microscope at this time, and the leucocytes will be found spread out into ragged irregular sheets, or masses, filled with detritus, and disintegrating.

But the oxidizing power of the spleen does not seem to be inhibited; and the inhibition of the corpuscle-building function leaves a large quantity of oxidizable material on hand, which is constantly increasing. Oxidation goes on with far greater rapidity than before, in spite of the presence of the plasmodium. The blood, heated to an unusual degree, carries its high temperature to every part of the body, raising its temperature also to a corresponding degree. Is it possible we have here the true pathology of the fever temperature? The question is worth considering.

Let us carry the theory through to its legitimate conclusion. Suddenly a new influence is felt in the blood. It may be quinine, or it may be splenic extract. As it passes into the spleen, that organ is quickened into new life. Its activity returns. It begins to pour into the blood stream a volume of fresh, active leucocytes, and like a reinforcement of fresh troops on a field of battle, it results in saving the day. The enemy is driven back from the citadel of the body. But this is not all. The contractile fibers which have been relaxed and powerless, are renewed in strength and the organ begins to contract upon itself; its size is steadily reduced. The renewed activity in the cell-making function produces immediate inroads upon the oxidizable material which the organ has been struggling to dispose of. The fuel being reduced in quantity, the conflagration is checked. Hyperoxidation ceases; the temperature of the blood falls, and therefore the temperature of the body returns to the normal. Whether the true pathology of the fever temperature is here given or not, the extract of the spleen therapeutically controls almost absolutely the body temperature during the febrile condition.

If it be true that the important function of the spleen is to furnish the blood with elements which constitute a physiological defense of the body against infection by the malarial plasmodium, then it is but a logical step to inquire, "Why will it not furnish the same protection against other infections?"

As a matter of fact, investigation is showing that it is of decided benefit in other conditions having an infectious origin. Time alone can tell in how many. The natural inference from what has gone before would be that it should actively combat all infections. But we find that this is not the case; and that infections from the standpoint from which we are now viewing them, are divided into at least two quite distinct classes. Those that attack the life forces through the circulation, and those that do so through the various glandular systems. In the former class splenic extract is a sovereign remedy; in the latter its effect is not so marked, though in many cases beneficial. These things seem to argue that the glandular organs of the body exercise a supplementary function to the spleen in its defense of the life forces. Probably none of the glands are more important in this regard than those of the lymphatic system. It will be remembered that these glands, although of small size, multiply in number, and widely scattered through the body, occupy a position upon the lymph channels relatively the same as that the spleen occupies upon the blood stream. Or if not the same, they are closely analogous.

The writer has made many observations upon this supplementary action of the glandular systems, and hopes at a future time to report some of the clinical evidence which substantiates the view here given, as well as that showing the wider application of the therapeutic principles of the spleen. All of this evidence seems to point very directly to two important conclusions.

The first of these is that it is gradually being forced upon our understanding that nature, or nature's God, to go back a little farther, has provided the normal animal body with all of the elements necessary to defend it against the invasion of infectious disease. It is a well-known fact that some people appear to be naturally immune to all, or many infectious diseases. Others habitually have infectious diseases in a mild or trivial form, when those around them are having the same disease in a more or less virulent form.

The second conclusion is that we are now standing on the borderland of an undiscovered country in therapeutics, the exploration of which will unfold to us things quite as important as any that have astounded the medical world in modern times.

It is best to state at this point that splenic extract does not give equally brilliant results in all types of malarial infection; and here again it parallels in its action that of quinine. Its most brilliant effect is seen, as with quinine, in the acute tertian and quotidian types. Here it acts in the same specific manner, but it can be given at any time, without reference to chill or fever, and without any inconvenience to the patient. In the quartan and estivoautumnal types it more frequently requires the assistance of the hematinic; but even here its action is quite as prompt and reliable as that of quinine. Some recent observations of the writer have shown that the combination of lymphatic extract with the splenic extract greatly increases its beneficial effect in these more stubborn types of the disease, so that the results compare quite favorably with those in the tertian forms. Not only this, but the combination with lymphatic extract makes it possible to secure good results with a much smaller dose than when it is used alone. In the acute forms of all types, as might be expected, the most rapid results are seen, and the hematinic is seldom needed, unless the hemoglobin has been previously reduced by other causes.

A few typical cases will be selected from the great mass of the past six and a half years' work, and a few atypical or complicated cases. The microscope has not been relied upon entirely for diagnosis in these cases, although it has been used wherever the circumstances of the case made it necessary. The physician who attempts to rely wholly on the microscope for the diagnosis of malarial infections in general practice will find himself beset with many and grievous difficulties.

Case I.—Male, white, aged thirty-two, clerk. Has had fever continuously for two days, ushered in with a slight chill. Not feeling well for several days before; may have had some fever then, but does not know. No diarrhea; headache, aching of limbs, lassitude, slightly delirious. Temperature 105°, with slight morning remission. Diagnosis, estivoautumnal fever. Prescribed splenic extract, 5 gr. every two hours. Temperature fell steadily. At the end of the fifth day after the chill, the third after beginning the treatment, temperature was normal. No recurrence.

Case II.—Male, white, aged fifty, railroad engineer. Has been having a chill and fever every other day, with an exhausting diarrhea. Complains more of the diarrhea than of the chill and fever. Tongue

broad, flabby, frothy, pale, notched around the edges. No iliac tenderness. Prescribed splenic extract, 5 gr. every two hours the first day, and then three times a day. Diarrhea and chills stopped immediately. Rapid recovery.

Case III.—Male, white, aged twenty-five, barber. Gives a history of a severe chill two days before examination, followed by high fever. Sick all day and most of the night. Next day better. No chill, and went to work, but weak and not able to do much. On the day of examination had another hard chill, and temperature went to 105°. Diagnosis, tertian infection. Splenic extract, 5 gr. every two hours. Next day he went to work at his chair. There was no recurrence of chill or fever.

Case IV.—Male, white, aged forty-four, carpenter. Had severe sciatica of right leg. Not able to walk at all. Patient known to be susceptible to malarial infection. Diagnosed malarial origin. Gave splenic extract, 5 gr. every two hours. Third day he walked with a cane comfortably. Fourth day discarded the cane.

Case V.—Male, white, aged twenty-eight, barber. Had severe chill, followed by fever. Temperature now 104°. Was feeling fairly well until the night before. I did not wait for intermission, diagnosed malarial infection, probably tertian, and prescribed splenic extract, 5 gr. every four hours. The patient went to work at his chair next day and had no recurrence of chill or fever.

Case VI.—Male, white, aged forty-five. Chronic malarial poisoning. Microscope shows crescents and atypical forms of plasmodium, pigmented bodies, normoblasts, many lymphocytes; red cells show poikilocytosis. Blood plates few and scattered. No chills, but intense malaise and weakness. Prescribed splenic extract, 5 gr. every three hours, also extract of red bone marrow three times a day. Immediate improvement, rapid convalescence.

Case VII.—Male, white, aged twenty-eight, lawyer. Has been having quotidian chills, with continued fever, for several days. This morning did not get up. Aching of body and limbs. Temperature 104° when first seen. October 15 began to give splenic extract, 5 gr. every four hours. October 16 no chill; morning temperature 101°, evening temperature 103.4°. Increased dose of extract to 5 gr. every two hours. October 17 and 18 no improvement. Increased dose to 10 gr. every two hours. October 19 no improvement in fever; intense photophobia. Added extract of red bone marrow, tablespoonful three times a day. Temperature began to fall at once, but photophobia continued. Reduced splenic extract to 5 gr. every four hours, continuing the bone marrow. Photophobia ceased; temperature continued to fall until October 25, when it became normal.

Case VIII.—Female, white, aged thirty. Pregnant three months. October 14 and 15 had two chills each day. October 16, temperature 105°. Mucous membranes very pale, showing reduced hemoglobin. Double quotidian infection. Prescribed splenic extract, 5 gr. every four hours, and extract of red bone marrow, tablespoonful three times a day. No recurrence of chills.

Case IX.—Male, white, aged thirty, clergyman. Had a severe chill, followed by fever, aching of head, back, and extremities. Began with sore throat hoarseness, and a "cold," simulating influenza, but entire subsidence of fever the next morning betrayed the malarial infection. Did not wait for interval to pass, but gave splenic extract, 5 gr. every two hours. No recurrence of chill or fever.

Case X.—Male, white, aged sixty, farmer. Has had "fever 'n' agur" for two weeks. Sometimes two chills a day, but at least one every day. Has taken quinine, sarsaparilla, and several ague cures, without effect. Double quotidian infection, partially interrupted by the so-called "ague cures" the patient has taken. Gave splenic extract, 5 gr. every two hours the first day, and then four times a day. No more chills. Patient made a good recovery.

Case XI.—Male, white, aged five years. Has fever every night with nausea and vomiting. Fever subsides in the daytime, but has headache all the time. No chills, but seems to chill easily; shivers with the least change of temperature. Mild quotidian infection. Gave splenic extract, 3 gr. three times a day. Rapid recovery.

Case XII.—Male, white, aged thirty-five, coal miner. Has been feeling bad for several days. Today had a severe chill, during which he fainted before his wife could get him into bed; this was followed by high fever and delirium. Did not wait for interval to pass, but diagnosing malarial infection, prescribed splenic extract, 5 gr. every two hours the first day, and then four times a day. The man went to work in the mine the fourth day.

Case XIII.—Female, white, aged seventeen, schoolgirl. Had a chill and fever on two days with a day between on which no chill or fever occurred. Has aching of bones, back, and head, with coryza, and some cough. Tertian infection. Gave splenic extract, 5 gr. four times a day. The child went to school on the third day of treatment, but not feeling quite well. Added red bone marrow, teaspoonful three times a day. Symptoms disappeared.

Case XIV.—Male, white, aged seventy-three, clergyman. Continued fever with quartan exacerbation. Temperature runs from 101° to 103°, every fourth day going to 105°. Much pain and aching, especially in the back. Pulse weak and irregular. Urine heavily loaded with albumin. Diagnosis, quartan infection complicated with acute nephritis, or vice versa; difficult to say which is the primary disease. Gave splenic extract, 5 gr. every four hours, alternated with 5 gr. of gallic acid every four hours, and applied an osmotic poultice to the lumbar region. The gallic acid was stopped as soon as the albumin disappeared from the urine. In this case the gallic acid acted in a very happy manner, and it was not long until red bone marrow was substituted for it, the splenic extract being increased to 5 gr. every two hours. Recovery was slow but steady. It was fifteen days before the temperature ceased to rise in the evening, and show the quartan exacerbation.

Case XV.—Male, white, aged thirty, bookbinder. Has "winter cholera;" worse every other day. No distinct chill or fever; no iliac tenderness. Mild tertian infection, complicated with diarrhea. Gave splenic extract, 5 gr. every two hours. Next day reported himself much better. Bowels checking, and digestion improved, appetite returning. Uneventful recovery.

These fifteen cases give a fair idea of the rest. Many were typical, and many were not. Many were complicated with the widely varying conditions met with in general practice. It may be objected that cases should have been selected that were more typical, since so small a number was to be given. This may be true, but it was thought that a selection of general cases from every-day practice would give a better idea of the application of the remedy to all forms of infections than a list of perfectly typical cases.

It will be noted that in the cases cited the red bone marrow was given the preference as a hematinic. In the writer's article previously referred to the remark was made that theoretically a preparation of the red bone marrow would be the ideal hematinic to use with splenic extract, since it was the physiological remedy *par excellence* to supplement its action. At that time it had never been used in this connection, but subsequent experience showed that the opinion then expressed was well founded. Its effects begin very soon after its administration is commenced, and the splenic extract which before was powerless to do its work, immediately begins to act.

The thought may occur to some that possibly the red bone marrow would so revive the physical forces if it was pushed that it would enable the body to throw off the infection without the assistance of the splenic extract, but this is not so. The red bone marrow, as well as other hematinics, in themselves simply produce more and better food for the plasmodium; and its cyclical existence goes on with the same rhythm, although the resistance of the body is increased for the time being. The moment, however, the splenic extract is added, the miracle of physiological resistance, or cure of disease in the truest sense, appears.

In Case No. 7 it will be noted that photophobia was produced by a dose amounting to ten grains of splenic extract every two hours. This case is given for the purpose of calling attention to the fact that there may be a point beyond which the dose should not be carried. No efforts have been made to ascertain the toxic dose, if there be such. This can be done later by experiments on lower animals. For the present the therapeutic dose is all we need to discuss, and it is only necessary to note the physiological warning of the organism.

Wulfekuhler Bank Building.

TUBERCULIN IN THE TREATMENT OF TUBERCULOSIS. WITH THE REPORT OF 167 CASES.

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In presenting this series of cases for consideration as having been treated with tuberculin, it is understood that the drug was not used exclusively as a specific, but only as an adjuvant to other necessary therapeutic agents—fresh air, rest or graduated exercise, diet, hygiene, etc. It has not always been possible to carry out these latter measures satisfactorily, on account of the well-known difficulties of controlling the actions of patients in private practice. In sanatoria, where the patients are governed by the set rules of the institutions and are also under the direct supervision of the medical officers, such measures are much more effectively carried out, and the patient, therefore, has a better chance for the arrest of the disease, all things being equal. But since only such a small percentage of the vast army of tuberculous persons in this country can possibly be treated in sanatoria, we must make the best possible use of such other means as may be at our disposal, even though conditions are not always ideal, to combat the disease in such cases as may come to us for professional advice and treatment. Good results may be had if we give proper attention, not only to therapeutics, but also to the problem of educating the individual patient along proper lines. It is not sufficient that we simply inform our patients as to the proper course to follow, but we must educate them in the laws of prophylaxis, the value of fresh air, the dangers of overexertion or exercise, the proper diet, and the absolute necessity of following instructions laid down by their medical adviser.

The cases included in this report belong to a series treated between July 1, 1901, and January 1, 1905, covering a period of three and one-half years, with a lapse of one year and three months since the last cases were discharged, a sufficient time to observe results. The greater number of these cases have continued under observation for one or more years after discharge, some of them up to the present time. The report is based on the present condition of the patients as far as can be learned. Eight cases of Class I passed from under observation shortly after treatment, and, while they apparently, when last seen, should be placed with the arrested cases, the time for observation was too short to pass judgment, and therefore they are placed in the improved column. Those who received no permanent improvement are classed with those who died, in the "negative" column. The line of treatment followed has been fresh air, day and night, good nourishing diet, rest or exercise properly graduated, tonics and stimulants as required, together with tuberculin in small doses, repeated as often as necessary to suit the individual case. To the use of tuberculin is attributed the small percentage of relapses referred to below.

Of the 167 cases, 108 had been in Colorado for one to five or more years, taking the so-called climate cure, with no permanent results. They had all the advantages of climate and fresh air, and most of them the disadvantage of exercise when they required absolute rest. The most of them gave histories of apparent arrests followed by recurrences, acute attacks of pleurisy, and some of them long sieges of what was called pneumonia. None of them reported any permanent improvement similar to their improvement as is herein reported. One very noticeable trouble that they all complained of was "taking cold" on slight exposure, a trouble that very few have had to contend with since taking tuberculin.

The fifty-nine other cases were placed under treatment shortly after coming to Colorado, and about half of the negative results occurred among these fifty-nine. The 108 patients who had been in Colorado for a number of years previous to taking treatment did better, as a whole, than those who were put under treatment soon after arrival. Time had eliminated the "weaklings," or those who had a more virulent infection. They represented what might be called a better selected class of cases; but some few of these had been gradually losing ground. For instance, Case No. 118, Class II, came to Colorado in 1898 and after three years was allowed to return home; as usual, after three months' sojourn in the East, she relapsed and returned to Colorado, where she remained two years, with little or no improvement. Since 1904 she has been living in the East and enjoying perfect health.

Those patients who were put under treatment shortly after their arrival in Colorado and were really desirable cases did just as well as any other desirable class of cases. As the majority of them came here for the purpose of taking treatment, it was almost impossible to eliminate the undesirable cases, an unpleasant duty which the "admitting" physician has to perform for the sanatorium.

From the following table it will be seen that 64 per cent. of all cases treated had their disease arrested, and if we eliminate the sixteen advanced cases of Class III, we have 70.2 per cent. of arrests. Classified according to sex—103 males and 64 females—of the females, 32 were married and 8 have borne 11 living children since being discharged from treatment. In only one case was there any evidence of the disease following labor. Case 127, Class III, advanced, had, besides extensive pulmonary involvement, a severe tuberculosis of the larynx, was five months pregnant when first seen, and was put under treatment only at the earnest solicitation of her mother. Improvement was slight; she gave birth to a healthy male child about May 1, 1904, and died four weeks later. The child was immediately removed from all chance of infection from the mother and shows no signs of disease or inherited deficiencies. In the other seven women there was no evidence of recurrences. One woman has given birth to three, and one to two children since arrest of the disease.

The series will be considered as a whole, also in classes. The classification given below is that laid down by Durban of Davos.

Class I.—Disease of slight severity, affecting at most one lobe or two half lobes.

Class II.—Disease of slight severity, more extensive than Class I, but affecting at most two lobes; or severe and affecting at most one lobe.

Class III.—All cases of greater extent and severity than Class II.

Class	No. of Patients	Average Length of Treatment	Disease Arrested	Per cent.	Disease Improved	Per cent.	Negative or Dead	Per cent.
I.....	74	95 days	66	89.2	8	10.8	.....	....
II.....	42	109 days	32	76.2	9	21.4	1 Neg.....	2.4
III.....	51	97 days	9	17.6	17	33.3	5 Neg. } 20 died.. }	49.1
Total....	167	99 days	107	64.0	34	20.0	6 Neg., 3.6 20 died 12%	16

Class III. Subdivided.

Class	No. of patients	Average length of treatment	Disease arrested	Per cent	Disease Improved	Per cent.	Negative or Dead	Per cent.
Class III. Fair.....	35	114 days	9	25.7	14	40.0	12	34.3
Class III. Advanc'd	10	58 days			3	18.9	13 died....	81.1
Total less "Cl. III. Adv'd"..	151	109 days	107	70.9	31	20.5	6 Neg 4% 7 d'd 46%	8.6

Since the treatment of tuberculosis has for its object the arrest of the process, and that arrest is practically fibrous encapsulation, it is all-important that the arrest should be so perfect that under proper living and hygienic surroundings there would be little or no chance for a relapse of the disease. As to the time required after arrest of the disease before we can say our patient is "cured" there is no stated period; it depends upon many factors, such as the extent of the lesion, the organ or organs involved, the virulence of the invading bacilli, the recuperative powers of the patient, together with the mode of life and general surroundings of the individual patient. So far, we prefer to say that the disease is arrested, and if possible prevent a relapse. Whether some cases become reinfected after the lapse of years of apparent good health is an unsolved problem, but we do know that a great many of the so-called "climate-cured" cases relapse if they return to their homes in the East, while up to the present none of the cases herein reported, who are living or have lived in the East since taking tuberculin, have relapsed. To be sure, the number is not large enough to be of any great value in statistics, but several of them have visited in the East for three to six months without any ill effects, except the one case reported below. She returned to her former home and mode of life, disobeying all instructions as to exercise, fresh air, etc.

In the whole series of 167 cases, eleven patients relapsed, so far as is known at the present time (7.5 per cent.). Of these eleven, six improved again or later had an arrest of the disease. There were eight relapses in Class III, four patients died, two improved, and two are negative. In Class II there were two relapses, one took treatment for thirty days with evident improvement, when she stopped and resumed her former occupation as housewife (negative). The second later improved and is still living and in fair health, two years and three months after taking treatment.

In Class I there was only one relapse. This patient was under treatment only sixty days, when she returned East, where she remained for five months. The relapse was mild, and after three months' further treatment her disease was again arrested and has remained so—two years and seven months.

While the length of the treatment averaged ninety-nine days, the patients were kept under observation afterwards for from one to four and a half years, except the eight cases of Class I as mentioned above. The advantages of keeping arrested cases under observation for a considerable period after treatment are many. The most important advantage is to the patient, in that he can be advised and counseled at different times, and in this way prevented from depending on the false security, that he feels perfectly well and can again resume his old habits of life. By this after-supervision many cases can be guided back to perfect health who would, if left to themselves, very probably again break down. Often supervision also gives an opportunity to observe the results of treatment much better than can be done by correspondence or personal reports from the patients.

The diagnosis presented no difficulties in Classes II and III, except as for classification or ascertaining the extent of the lesions present. In Class I the tuberculin test was required in twenty-one cases to confirm the diagnosis, sometimes to convince the patient and sometimes to satisfy the examiner. The diagnosis was made in the other fifty-three cases of Class I by the ordinary method of examination and confirmed in forty-seven by the microscope.

I shall not attempt to consider all the complications met with. The most serious complication was tuberculosis of the larynx. There were nine cases in all, seven of which occurred in Class III; of these, five patients died and two are much improved. Two cases were seen in Class I (not primary), and in both cases the disease was arrested and 5 mg. of tuberculin given more than a year later gave no local or systemic reaction. There were eight cases of laryngeal paralysis from pressure on the recurrent laryngeal nerve; of these, two were negative, four were much improved, but are still hoarse, and two have complete restoration of voice.

There were three cases of purulent otitis media, one of five years' standing dried up after sixty

days' treatment, with fair return of hearing (1902) and the patient has had no recurrence since (December, 1905). One patient had complete loss of hearing, but no return of discharge, and one, Class III, had fair hearing, but has had occasional discharges of pus, but not nearly so troublesome as formerly.

Mixed infection was present in a great number of the cases, and when streptococcus infection was the chief factor good results were had from the use of antistreptococcus serum, as reported in *Colorado Medicine*, May, 1905.

There were nine cases with cervical adenitis present as a complication. All recovered, leaving little or no trace of the enlarged glands. One case in particular deserves special mention. Case No. 146, Class II, male, age thirty-four years, and weight 135 pounds. Family history negative. Has lived in Colorado most of the time for the last twenty years. First noticed enlargement of the cervical glands in 1897, since which time they grew gradually worse, had been discharging for over two years. Seen first, March, 1904. Glands, especially on the left, were broken down and discharging freely, with large open wound at upper border of clavicle. The upper lobe of the left lung involved. Sputum (washed) contained tubercle bacilli and streptococci; the pus from the suppurating glands contained streptococci; temperature, P.M., 38° to 39° C., chills and night sweats. Was given seven doses of antistreptococcus serum of 10 c.c. each, after which he was put on tuberculin, together with rest, fresh air, good diet, etc. In forty days he had gained twenty-three pounds, the ulcers were all healed, and cough and expectoration had ceased. Disease arrested and no signs of any recurrence since. On treatment three months.

That tuberculin was a failure, generally speaking, when first introduced by Koch, is a matter of medical history, and was due to several causes. It was then a crude product, its toxic, physiological, and therapeutic actions were unknown or not properly understood. It was administered to all classes of cases, with no regard to the extent of the lesions, temperature of the patient, or complicating infections. The idea had been given that it was a specific for tuberculosis, and it was expected to work wonders in regard to curing the disease. The dose was usually large and rapidly increased, and was repeated at short intervals, regardless of reactions or results produced. It is no wonder that it fell into disrepute, as no system could withstand such a continued course of poisoning, added to the already overburdened organism. The opinions held by many physicians to-day are those that were formed fifteen years ago. Disappointed with a drug that had promised so much to suffering humanity, they discarded it completely, and have paid little or no attention to it since except to condemn it whenever mentioned. Compare the doses and frequency of administration of the early investigators, or the doses recommended in the literature sent out with Koch's "T. R." (up to 10 and 20 mg.), with the doses advocated by Wright of London (0.001 to 0.004 mg.), and these small doses given only at long intervals and under the control of the "opsonic index." Whether Wright's opsonic index will prove successful in general practice remains to be seen. In the past, the only index we have had to guide us was the clinical, and those who are not supplied with the requisite laboratory facilities will be forced to depend on the clinical index in the future, as a guide to the dosage of tuberculin or other bacterial products.

My first experience with tuberculin was in September, 1900. It was given first 0.5 mg. every second day, and the dose increased 0.5 mg. at each dose until 3.5 mg. was reached, when it was evident that it was time to call a halt. As the experience was "personal," I am very familiar with the results. They were, to say the least, very unsatisfactory. After resuming the use of tuberculin in July, 1901, the dose was small—0.005 mg. to 0.1 mg., and in some few cases as high as 0.5 mg. have been given. It was never given when the patient's temperature went above 37.5° C. in the afternoon or evening. By keeping the dose down no systemic reaction was produced, and if a systemic reaction did occur from a given dose in a certain patient, the dose was always reduced to one-tenth or less of the previous dose, according to the severity of the reaction. In this way the patient was not exposed to what, to him, might prove to be a toxic dose, if repeated regularly.

The first step in the cure of tuberculosis that is recognized at present is that of encapsulation of the invading microorganisms. "If the tubercle is successfully isolated by fibrous encapsulation, there arises no consequence of moment to the organism, but if the attempt to wall it off be insufficient, the bacilli multiply rapidly, and some migrate radially into the surrounding tissues, spreading infection on every side." (Cornet.) If the capsule be sufficiently dense, there is less probability of its rupture during the stages of resolution. It must, therefore, be our aim to apply such therapeutic measures as will aid in thickening the fibrous capsule of the tubercle. It is a well-known physiological law that where there is a tendency to the formation of new tissue—the growing tubercle—an added blood supply or hyperemia aids greatly in its development. The action of tuberculin as observed in visible tubercles, is to cause a dilatation of the blood-vessels around the tubercle, thus bringing more blood to the seat of the disease. This hyperemia aids in the formation and thickening of the fibrous encapsulation. What rôle the hyperemia plays in the subsequent absorption or in the absorption of the tubercles already undergoing resolution, is a question as yet not fully explained. There is reason to believe that its action is similar to that described as "Bier's method" in the treatment of tuberculous joints and other localized infections by passive hyperemia. This local congestive action of tuberculin (active hyperemia) can be observed with the naked eye, in tubercles of the larynx, iris, mucous membrane, and skin, a few hours after a small dose of tuberculin. It is often noticeable that such tubercles disappear after a course of tuberculin, and a local reaction can no longer be produced even by diagnostic doses of the drug. In using tuberculin as a therapeutic agent, the object is to cause an intermittent—not a continuous—hyperemia around the tuberculous area, and at the same time not expose the patient to the dangers of excessive doses. From experience it has been learned that small doses produce hyperemia, while at the same time the tissues do not become immunized to the action of tuberculin. By this method we not only get encapsulation, but get absorption of small foci and single tubercles. Large doses have been seen to cause degeneration, if often repeated, of the new, susceptible granulating tissue, hence probably the cause of failure when large doses are used early in the course of treatment.

From a study of the histology of the tubercle it is evident that remedies directed at the destruction of the encapsulated bacilli must prove useless and disappointing. Antitoxic or bacteriolytic sera, no matter how potent, can be of no effect in the treatment of encapsulated tuberculosis. Such sera would be very valuable at such times as excessive toxins or bacilli were found free in the tissues, as the flooding of the lymph or blood stream by the rupture of a focus into the vessel, or in caseous pneumonia following the aspiration of a focus rupturing into a bronchus. Bacilli imprisoned in the tubercle are safe from the action of such sera, as the tubercle proper contains no blood vessels; besides, the internal pressure is greater than the external, thus preventing absorption of the serum into the tubercle. The myriads of tubercles in a given case, their different ages, and varied degrees of encapsulation, prevent all possibility of foretelling when an accident in the form of a rupture might occur, and if the focus were small, recognizing the condition until new areas are involved and show signs of disease. By that time it would probably be too late for the use of serum if we expected it to get its antitoxic or bacteriolytic action.

If such reasoning be at all correct, we cannot expect much from the serum treatment, even if we had one of the greatest potency, and the treatment of tuberculosis must depend either on thorough encapsulation of tuberculous foci, or the production of immunity, or on both. Wright's vaccination theory, and von Ruck's theory of producing immunity by the administration of increasing and often-repeated doses of "watery extract of tubercle bacilli," look feasible. Von Behring's new theory, which he does not even attempt to explain, appears to be on the line of production of immunity. How long an immunity will last is an unsolved question also. In both Wright's and von Ruck's cases recurrences took place, and it is fair to surmise that there was either insufficient immunity, or the immunity was not lasting. In the light of our present knowledge of the action of bacterial products, it would seem good practice to use tuberculin, for its local congestive action, in conjunction with the toxins used for production of immunity. Owing to the peculiar pathological changes produced in the tissues by the tubercle bacillus, tuberculosis will always be a slow disease to conquer, no matter what the line of treatment, and the line of therapy that gives the best and most lasting results should be followed without prejudice.

There has been no reference made to the authorities on the subject of tuberculin, as the literature of tuberculosis gives both sides of the question in full, but those who take the negative side seem often to have jumped at conclusions from the clinical results of a small number of cases, a review of which shows that the remedy was given in large and increasing doses, and their clinical material was generally of the "advanced class," already overburdened with the products of infection and retrograde tissue changes, and often complicated by associated infections. Tuberculin was given with the expectation that its specific action would result in the rapid destruction of the tubercle bacilli or a resolution of the tuberculous tissue, with little or no regard to the extent of the lesions. The work that has been done, during the last ten years, on the subject of bacterial products, by men whose standing in the profession must give weight to their statements, is very encouraging, and it would seem that the future treatment of tuberculosis must be by some of these bacterial products, plus the other necessary measures of fresh air, supervision, diet, etc.

The following cases are reported more fully on account of their special interest to the writer, and because none of the four patients was a favorable subject for treatment, they having exhausted all other sources then known to them.

Case 1, Class III, male, age thirty-nine years, weight 122 pounds. Family history negative. Had pneumonia (?) in February, 1899, hemoptysis in May, 1899. Came to Colorado August, 1899, weight 147 pounds. During the following twenty-two months had various quiescences and recurrences. By July 1, 1901, had large cavity formation in the upper lobe of the right lung, weight 122 pounds. Began the use of tuberculin July 8, 1901; improvement was slow but satisfactory, and at the end of six months, weight 135 pounds. The tuberculin treatment lasted over a period of two years (ten months in all). Present condition, disease arrested, no cough, no expectoration, and no tubercle bacilli in sputum for eighteen months; weight 157 pounds. During the course of treatment and since, he has continued to follow his occupation without any loss of time, except three days in February, 1904, when he contracted streptococcus infection, apparently in cavity in right lung, which infection rapidly yielded to the use of antistreptococcus serum, leaving apparently no bad results.

Case No. 16, Class I. Although a first-stage patient as far as the extent of the lesions were concerned, he seemed an unfavorable subject for treatment on account of his emaciated condition, family history, and years of exposure to infection. Male, age twenty-three years, weight 132 pounds. Seen first August 29, 1901, weight three years previous 156 pounds. He had been in Colorado for two years, but at none of the time showed any signs of improvement; on the contrary, he was losing ground. Father, mother, one brother, and two sisters had died of tuberculosis, during the last ten years prior to his coming West. He had morning cough, with expectoration, tubercle bacilli in sputum. Temperature P.M., 37.3° to 38.6° C., pulse, 90 to 110. Began tuberculin September 3, 1901, followed in short time by rapid improvement; in three and one-half months he had gained 30 pounds. During the treatment he did light work on a farm. January 1, 1906, weight 186 pounds, disease arrested.

Case No. 19, Class II, male, aged sixteen years, weight 81 pounds. Family history negative. Has had asthma for ten years, tried various climates and altitudes for three years before coming to Colorado in September, 1899, since which time improvement has been spasmodic. January, 1900, and March, 1901, had pneumonia (?), followed in each case by tardy recovery. Examination September 29, 1901, showed infiltration of upper lobe of left lung, tubercle bacilli in sputum, temperature 37.2° to 37.5° C., pulse 100 to 120. Under hygienic and dietetic treatment, with the addition of tuberculin, he gained rapidly, with increase in weight. He received tuberculin injections for six months out of the year. The disease was arrested, and since December, 1902, he has had no return of his asthma. Had croupous pneumonia of upper lobe of right lung November, 1903, crisis on the ninth day, convalescence complete and uneventful.

Case No. 154, Class II, male, age thirty-two years, weight 112 pounds. Came to Colorado

July, 1902. For one year he tried climate cure. No results; June, July, and August, 1903, he was given tuberculin in increasing doses, his physician claiming that if a little was good, more was better. The first two months his improvement was satisfactory, then the dose of tuberculin was increased to 5 mg., and later to 10 mg. every day, and the last week twice a day; at the same time he was ordered to take exercise. The results, as may well be imagined, were disastrous, rapid breaking down and severe hemoptysis. Seen first May 4, 1904. He began taking small doses of tuberculin, improvement was rapid and permanent up to the present. Weight, December 1, 1905, 137 pounds. Disease arrested. He has followed his trade as a barber since October 1, 1904.

From a study of the foregoing series of cases, the following conclusions have been drawn:

1. An early diagnosis is the most important step to the successful treatment of tuberculosis.

2. Tuberculosis may be arrested by proper treatment, with a fair certainty of a permanent cure.

3. Tuberculin is a valuable adjuvant in the treatment of tuberculosis, as evidenced by the recovery of twenty-eight out of thirty cases that were treated with practically nothing but tuberculin, while they continued to follow their ordinary occupations during the treatment.

4. Cases of tuberculosis treated with the addition of tuberculin show a much less tendency to recur than similar cases treated without tuberculin.

5. Tuberculin in small doses (0.01 to 0.5 mg.) seems to have a more curative action than when given in large and increasing doses.

6. No ill effects follow the administration of small doses of tuberculin.

7. Purely incipient cases improve very rapidly under the use of small doses of tuberculin, both as to the arrest of the disease and the clearing up of the diseased area.

8. Tuberculin should never be given to a patient who has fever or who is suffering from mixed infection.

9. Third stage cases, especially advanced cases, receive little or no benefit from the use of tuberculin.

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PATHOLOGY, ETIOLOGY, AND TREATMENT OF PUERPERAL ECLAMPSIA, WITH A PLEA FOR THE KIDNEYS.*

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Eclampsia is an acute morbid condition which may occur in the pregnant or puerperal woman, and is characterized by tonic and often clonic convulsions, of first the voluntary and later the involuntary muscles of the whole system, with more or less contraction of the arterial system, which is constant, with loss of consciousness ending in coma or sleep.

To consider any disease or decide upon its treatment, it is even more necessary to know its pathology than its specific cause; for often its specific cause, if there exists such, is the cause of the pathology, while the pathological lesions are the cause of the symptoms manifested in the disease, and the question arises in every disease whether it is more important to treat the disease or treat the pathology. In eclampsia the question arises as to what is the real disease, the pathological lesions or that which causes these lesions; thus it devolves upon us to seek out all the pathology and gather together all the suspected causes and study them in relation to each other and in relation to the symptoms manifested in the disease.

The time-honored theory that nephritis is at the bottom of this trouble must be considered, for it is so often present, and the close study of its functioning power and pathology give us a chance to know somewhat the condition of our patient, though, as Prutz says, "We cannot consider renal lesions as the anatomical substratum of eclampsia, for in many cases they would seem secondary," and as Bouffe de Saint Blaise says, "The kidney is often normal," or what is still more true, the kidney is generally normal until arterial contraction sets in, and even when pathological lesions are present in this organ its function is often not impaired, says Guénard.

I have seen kidneys throwing off hyalin and granular casts, and losing albumen, do their work well as long as the blood vessels in these organs were free from spasm. Edgar says that when the kidneys are diseased there is present an acute congestion; others say an acute nephritis or acute inflammation manifests itself, while others state that it is neither a congestion nor a true inflammation, but that the pathological lesion consists in a parenchymatous degeneration together with a slight inflammation and a tonic contraction of the local vessels, their state of tonicity depending upon the intensity of the cause. It must be admitted that in some cases inflammation has the upper hand, while in simple and true eclamptic cases the degeneration is the chief lesion. Because after death the vessels of the kidneys are congested, is no reason for saying that this was the condition when the disease was at its height. The cause of kidney impairment we must suppose bears some relation to the cause of the attack, for they are too often associated to leave any doubt that they are related. Many say that the kidneys become diseased, because of the elimination by them and the irritation caused in them by poisonous substances from the blood, either as the result of faulty maternal metabolism or toxic fetal metabolism. Against this theory is the fact that children of eclamptic mothers show in many cases similar degeneration to those found in the woman's kidneys, and it could hardly be supposed that a fetus excretes enough urine to do this damage. Some claim that the smaller vessels may be blocked by thrombotic formations caused by parenchymatous cells or giant cells supposed to be from the syncytium, or because of fibrin ferment set free by the placental cells. Massen has discovered an increase in leucomaines, and Kallman an increase in globulins, in the blood serum. Others believe that the general anemia which is very often present has something to do with a departure from the normal here, and still others that the local anemia caused by contraction of the blood-vessels in the kidney deprives the part of the already not overnutritious blood, and thus starves the tissues which become poisoned by self-waste and secreta. Certain it is that the maternal blood is not up to par, and there is no wonder that the kidneys are diseased, as they have to handle more material of an inferior character, poisoned by

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inferior maternal catabolism (leucomaines and globulins), fetal toxines, and at this perilous time have not only to contend with these substances but are robbed of proper nutrition also, often by general anemia, and cutting off of their own blood supply. In this connection it is not out of place to say, in proof of the above, that a parenchymatous kidney whose epithelium is necrosed because of improper blood supply will often do noble work if blood is furnished to it by vasodilation.

As early as 1892 Jürgens, Klebs, Pilliet, and Schmorl showed hemorrhagic lesions in the eclamptic liver in the region of the small vessels particularly, due to thrombotic formations, which were considered diagnostic of eclampsia. Williams has found pathological lesions in the maternal liver without exception in all his cases. The causes of these lesions resolve themselves into the same as those causing kidney trouble (bowel, skin, kidney, and lung disturbances), together with toxic materials thrown off by the placenta or fetus, contraction of local vessels with lowered nutrition resulting in self waste, and consequent increased permeability of vessels, with local exudation. Hematomata beneath the surface of the liver have been reported with rupture of capsule. The vitality of the part already lowered by lessened amount of inferior nutritive material supplied, would give sufficient ground for supposing that when the greatly increased pressure comes that in exactly such places as the liver diapedesis can easily take place, even without blocking by thrombi. Edema, thrombosis, hyperemia, and apoplexy of the brain can be explained as above. Degenerative changes in the heart have been found after prolonged chloroform anesthesia and are supposed to be due to this poison. Congestion and later edema of the lungs can be explained by heart failure, and especially by the fact that the pulmonary vessels possess less strength than vessels in most other organs, and with such high pressure present they give way to relaxation first, and the giant cells supposed to be from the syncytium block the track, and the blood under pressure behind then seeks the tissues. Owing to the constant contraction, which at some times is greater than at others in the blood-vessels, the vasavasorum are constricted, and in this way furnish a diminished amount of nutritive supply to their own walls, causing degeneration. This weakening of the vessels would cause them finally to give way to relaxation, which condition is often seen in the late stages of eclampsia. Constant contraction of the general arterial system, which is at some times greater than at others in eclamptic conditions, is in itself a pathological state if not condition. Some have found the suprarenal glands enlarged and claim that products caused by stimulation of these bodies cause the systemic contraction, but this is unlikely, as the attacks often occur before the uterus rises to contact with them.

Out of one hundred and thirty-three cases examined by Lange for thyroid enlargement, one hundred and eight showed the enlargement and none had eclampsia, and only one was nephritic; in the remaining twenty-two cases in which there was no enlargement, twenty had albuminuria, sixteen with casts, and six of these developed eclampsia. Lange removed one-fifth of the thyroid from ten pregnant cats; two died in coma twenty-three and twenty-eight days after the operation, and three had convulsions twenty-three and twenty-five days after the operation. No changes were noted in the other five cats, but on examination after they were killed similar changes in the organs of these were found. This lends weight to the fact that underaction of the thyroid is a cause. The pulse may present three pathological conditions; it may be of high tension, because of contraction alone, because of arteriosclerotic change, or it may be without tone owing to systemic and general arterial weakening.

Cause.—In considering the causes of this malady we must consider the cause of the pathology and the cause of the symptoms. The causes of the pathology have been spoken of above, therefore, we will now consider the etiology of the disease as a whole. The causes of this not too well understood disease are variously given by the many writers on the subject, amounting in number to about twenty-five different ones. "Like a bolt from a clear sky it sometimes comes," some have said; but in most cases that seem to appear in this way, with careful watching a cloud might have been seen gathering in the distance, such as a gradually increasing arterial pressure when the urea is not cut down and no trace of albumin has yet appeared. So many causes have been assigned that Zweifel has called it "a disease of theories." Twin pregnancy and hydramnios have been given the credit, but in over four thousand deliveries occurring at Columbia Hospital there were forty-eight cases of eclampsia, with only one twin pregnancy in the eclamptic cases and no report of hydramnios—thus eliminating not only these conditions but also the backing up of urine in the ureters supposed to be caused by these conditions. Primiparæ constitute 75 per cent., says Knapp, and a large percentage occur after the fifth month. Casts are more frequent in multiparæ than in primiparæ. Whether heredity has an influence has not been decided. Some have offered good reasons for bacterial origin, but on the whole this cannot stand, as examination of the blood shows a lack in the corpuscles and ready coagulation, but no bacteria. The whole is said to be the outcome of an autointoxication which is from protean decomposition, but no one has ever been able to demonstrate such in urine or blood. For a long time uremia was given the credit, but now it is thought often to indicate only the condition of the kidneys and the extent of arterial contraction. Uremia and eclampsia seem to me to be two entirely different conditions, though they may, as they often do, exist at the same time. Autointoxication was suggested by Bouchard and supposed to be proved by Tarnier and others because of diminished elimination of poisons through the urine at this time, as indicated by the urea passed, which intoxication gave rise to renal and hepatic complications, which complications accentuate the disease. These poisons by direct action on the kidney, etc., through elimination undoubtedly may do harm, but more harm is done by the stimulation of the oversensitive vasoconstrictor nerves, which causes a tonic contraction of the arterioles, being progressive and showing exacerbations. The truth of this statement is strengthened by the fact, often observed, that in a case that shows nephritis with granular and hyalin casts and a small amount of urea, the urea increases and the kidney improves if the vessels are kept relaxed. In a case so treated the kidneys eliminate much more poison and liquids, and at the same time improve; this fact seems to tell

us that the poison does not do the whole harm by local effect on the kidneys, but by some systemic effect.

To say that because hepatic lesions always occur, it is a hepatotoxemia (Bouffe de Saint Blaise), seems hardly fair, for there is some underlying cause which makes these lesions, and, after all, the underlying cause is the important one. Imperfect metabolic processes, such as those caused by constipation, hepatic disorder, etc., are well known to have a tendency towards causing an increase in nervous irritability and high arterial pressure. Thrombosis in the small vessels, caused by increased fibrin ferments from the placenta, syncytium cells, as stated above, some believe help to cause the lesions and thus the symptoms. Williams has found these giant cells away from the placenta in the small arteries in normal cases. Toxic fetal metabolism is supposed to be at the bottom in many cases, and this belief is strengthened by the fact that when the child dies (substances injected into a dead child in utero do not pass to the mother), the attacks often stop suddenly, and again by the fact that eclampsia occurs only in women with child. On the other hand, sudden stopping leans to the nervous theory, for the attacks often stop, even with the same amount of poison in the body, and the same pathology still existing. In the same woman some pregnancies are normal while others are eclamptic. Strumen reports a case in a woman eclamptic at her second and fourth pregnancy, while the others were normal. Such a case is on the side of the nervous theory. It is a well-known fact that country people are much less nervous than city folks, and it is also true that eclampsia occurs proportionately much oftener in the city than in the country. Attacks occurring in the mother after the delivery, and sometimes as late as a week afterward, and the fact that the child after the delivery very seldom has attacks, favor the idea that there is a nervous disturbance in the mother that is prerequisite. Serum and urine taken from an eclamptic mother after being sterilized have been proven by Schumacher to have little or no effect on animals when injected hypodermically. The great irritability of the involuntary muscles explains, in two ways, why expulsive pains in the uterus often come on with eclampsia—the uterus is made up of involuntary muscle and the arterial contraction causes an increase of carbon dioxide in the child, which is the most plausible cause of labor pains being initiated. Involuntary muscles, especially the uterine, become more irritable toward the end of pregnancy, and eclampsia is more frequent toward the end, furnishing another plea for the nervous theory which causes vasoconstriction.

Pathological lesions in the child are in many cases not observed, while in a few cases the child's kidneys and liver show the same lesions as found in the mother (Williams). This is in favor of a systemic poison, but as the kidneys in the fetus are very little active the elimination of poisons through them could scarcely account for the abnormal conditions here. This is a strong point in favor of the theory that in eclamptic cases the toxins (if of bacterial origin) or leucomains (if due to tissue metabolism) act, not by direct contact, but indirectly by their action on the vasoconstrictors and because the blood is deficient in nutritive material. The report of a number of cases of chronic nephritis, treated by means of a vasodilator (aconite) at the Roosevelt Hospital two years ago, was the first, so far as I know, to show that cases thus treated did well—while the aconite was kept up the urea increased and whenever stopped the urea would diminish, thus showing that the extent of arterial contraction can almost wholly control the output of urea through the kidneys. These steps, taken over two years ago, have not only revolutionized our treatment of interstitial nephritis, but have changed our ideas of this disease.

To-day, to pass a rigid physical examination, one's arterial system must be in good condition as well as his kidneys, showing that the physical condition of our little vessels is getting some of the credit it deserves. Underaction of the thyroid very probably exerts an influence in some cases, as explained above.

Sometimes there is only one attack at the end of pregnancy, which lends weight to the overcharged nervous explosion theory, and any manual dilation of the cervix tends to bring on another convulsion, and this dilation can in no way increase the poison nor add to the pathology, but acts simply by irritating the nerve center, which is already wellnigh uncontrollable.

Jaundice coming on suddenly after an attack means capillary contraction rather than acute poisoning. If eclamptic attacks are due directly to a systemic poison, why does the child live with the system in this condition, if the arteries are controlled? Williams says, and we all agree, that under proper treatment the subjective symptoms disappear, the urine and urea increase in quantity, and the kidneys improve, yet, just when we are congratulating ourselves, a convulsion occurs. Williams also mentions that a case was reported in which the urine was normal until the attack. These things seem to mean that there is a nervous discharge which commands high pressure in the arteries. Who has not noticed that these attacks follow dietetic imprudences, such as eating a lot of dates, and all know the harm at this time of excessive emotion and that if an attack has once occurred, the slightest shock, internal or external, may cause renewed paroxysms. Does not this mean nervous disturbance? Statistics show that two-thirds of the cases only have albumin, but at each attack there is an increase of albumin and decrease of urea, while after the attack the albumin diminishes rapidly and the urea rises fast, if arterial tension lessens. This is the condition, although even more poison is present in the circulation and passes the kidneys after an attack than before.

Increase in urea eliminated by the kidneys means the falling off in number of attacks, and it is also indicative of lessened arterial contraction. All the authorities admit that chloroform and morphine decrease the mortality, but who would say they do so by removing poisons from the system? These remedies must work by dilating the vessels and allaying nervous irritation. As the patient becomes worse and the coma deepens, then the pulse of course weakens, but the convulsions are also less severe.

Summing it all up, then, it seems reasonable to say that eclampsia, with its pathological conditions, is due to the presence of leucomains and globulins in the mother's blood, or if the parasitic theory be true, to toxins; to the formation of fetal toxic materials, both of which act slightly by direct action on the body parenchyma, but chiefly on the overcharged nervous system. If eclampsia is due to the presence of poisons in the body or to pathological kidneys, why do we not meet with it more often in such conditions as tuberculosis,

where the functioning powers of the tissues are already overtaxed? If the kidneys are to blame, why do we not find eclampsia oftener in multiparæ than in primiparæ? It is possible that in some cases eclampsia is a purely nervous disturbance without any anatomical substratum preceding the attack. It must also be remembered that the formation of poisons by disturbed body metabolism means necessarily some waste of the food supply. In 184 nephropexies done by Goelet of New York, the kidneys in many instances showing albumin and both granular and hyaline casts, the symptoms have entirely cleared up when the prolapsed organs were returned and fixed in their normal high position, showing conclusively that the kidney pathology was due almost entirely to a disturbance of the circulation. It is true that in such cases it is a passive congestion, while in eclampsia it is an active anemia, but in the end they amount to the same thing, for both act by diminishing nutrition, and kidney cells, as other cells, must consume themselves if they perform a function when the food supply is cut off. The convulsive symptoms of the attack cannot be explained by brain anemia, and it must be that the irritation caused in different ways amounts to a nervous explosion which causes an intense arterial contraction, this in turn causing brain and cord anemia which, for the time being at least, is a precaution on the part of nature.

Lobenstein and Welch, at the Lying-In Hospital, New York, report a neuroglioma of the right cerebral hemisphere during pregnancy, with symptoms of eclampsia. Rise of blood pressure takes place in the recumbent position. Over 3,500 feet above the sea level is what Oliver has shown is needed to raise the blood pressure considerably. The nearer our patients are to the sea level, the lower becomes the blood pressure. As a rule, over 160 m. of Hg. is necessary to produce symptoms.

Treatment, then, consists in prevention of the cause, treatment of the underlying causes when existing before the attack, treatment of the pathology, and treatment to meet the symptoms when they arise.

Prevention of the cause consists in keeping the pregnant woman in the best physical and mental condition possible, by looking after the input, output, rest and exercise, fresh air and sunshine. We should strive to remove any causes of indigestion and anorexia in any pregnant woman, for it is important that the woman at this time should have a full and liberal supply of nutritious food especially should she be able to digest and assimilate that all-important building material whose end product should be made to consist mostly of urea. The feeding of this nitrogenous food material should be given accordingly as its products are used and neutralized in the body. The kidneys may be doing their work by throwing off all the urea formed, but this is not enough, for the urea thrown off should be commensurate with the nitrogenous destruction in the system. The bowels should be made to do their work well, and the liver should be kept active, its secretion of bile free, for if these are not given the closest watch, products of decomposition will be absorbed, destruction and the necessary changes of the food in the liver will not occur. Diminution of bile in the intestines leaves the acid already present unneutralized, and allows the formation of others. The normal alkalinity of the blood in pregnancy should always be striven after, for this is the *sine qua non* in handling nitrogenous food, which food is greatly needed at this time. The skin must be active, and the kidneys should be kept washed with plenty of water, the reaction of which must be determined by the urinary reaction. Crofton says that kidneys which are inflamed should not be flushed even with water, as there is practically nothing to flush out, but with the arteries dilated we may dilute the castoff products. Moderate indulgence in fluids and care against overindulgence is the rule, as the arterial pressure is raised thereby and the mchanical burden of both heart and vessels is taxed. The amount of work to be done should be suited to the capacity, or, in other words, avoid hyperfunction. A mercurial purge, if needed, at intervals of ten days, removes the poison in the intestines, dilates the peripheral vessels, and increases the toxin-destroying power of the liver. It should be the rule to give a purgative and irrigate the colon in the pregnant woman, if the arterial pressure is rising, every time the patient complains of headache, dizziness, mental hebetude, dyspnea, etc. Dizziness is the first sign of disturbed cerebral arterial circulation. Increased oxidation and reduction necessary in the pregnant woman shows plainly that the lungs, too, must do their work well. if the best results are wished for. Rest of the body, which is a necessity, is no less important than rest to the mind and general nervous system; on the other hand, exercise is all-important, and while it of course should fall short of depressing, it should be taken much more than it often is. A cold bath in the morning, a walk after breakfast, a drive in the afternoon, and light dumbbells before retiring, regulated according to circumstances, are to be recommended. The habit some women have of staying indoors toward the end of pregnancy cannot be too strongly condemned, and the loose costume somewhat like a silk kimono now adopted as a fashionable style, is truly a Godsend. Fresh air and sunshine must always be sought. Violence of any kind is to be avoided, sudden cooling and other such imprudences must be guarded against.

The system at this time is prepared for increased work, and a departure from the normal in any way is more serious if not immediately repaired. The underlying cause, if a toxemia, from disturbed maternal metabolism or altered fetal metabolism, the poisons acting on an oversensitive nervous system, should be removed. The only way to remove these disturbances is to get the organs of the patient as nearly normal as possible, and in the meantime, while accomplishing this end, to counteract the effect of poisons as much as we can, especially by allaying nervous irritation with bromides, chloral, etc., and not let the irritation from these products keep the arterial tension up, by using the nitrites, aconite, veratrum, etc., as indicated. In the treatment of the pathological lesions, all we can do is to remove the causes as much as possible, and make the other organs (such as the skin) compensate and meet the effects of the poisons.

After marked symptoms arise the diet must, of course, be limited, but before this time it must always be remembered that the mother needs as much food as she can handle, the nitrogenous need increases more proportionately than the others, the input of which can only be regulated by a knowledge of the internal conditions. Gauge the intake by the output. The kidneys should not be imposed on at this time by being stimulated

to do more work, for if the system be made to supply the blood to the action of the kidneys, they will invariably do their work, even though badly crippled. Water taken at intervals and not too much at a time, to dilute, and a vasodilator to furnish the material, is all the kidneys ask. Alkalies enough to neutralize the abnormal acids are all that are needed, as an excess of them irritate the kidney, and any superadded irritation at this time should be especially avoided.

In proof of the fact that the kidneys will do their work if furnished the material to work on, even though diseased, I will cite the following case: Mrs. D. was sent into the hospital at 2 A.M., after having had two severe convulsions of eclamptic nature, brought on by bowel irritation caused by eating a lot of figs. Her pulse on admission was 96 and of quite high tension and bounding (this meaning plenty of blood with a *vis a tergo* and a *vis a fronte*). This patient's urea ran not quite one-half grain to the ounce of urine, which was scanty. She was given a vasodilator (veratrum viride ♏x) by hypodermic; almost immediately her pulse dropped to 55 and loosened considerably. Her arteries were kept relaxed, her bowels were moved well, and the skin made to sweat at every pore. At 9 A. M. the urea had gone up to two grains to the ounce of urine, the amount of which was considerably increased; at 2 P. M. the urea was five grains to the ounce of urine, and at 7 P. M. she was excreting 12 grains of urea to every ounce of urine, which was steadily increasing in amount. The urine throughout the day showed that the granular and hyaline casts were plentiful and had not lessened in number, thus proving that the much-improved excretory condition was not due to an improvement in the pathological lesions, but simply from a change in the blood supply to the kidneys.

The suggestion of splitting the kidney capsule, when these conditions start in midpregnancy, is, I think, an erroneous one, for it is not pressure of the capsule that does the harm. To tell when any disturbance begins to take place we must watch the working of every organ in the body. When the woman suffers dizziness, headache, and mental hebetude, the blood pressure should be carefully and systematically taken, not only with the finger, but with the sphygmomanometer. Diminished amount of urea is a sign in the infancy of disturbance, and simply states the amount of nitrogenous material that is destroyed and successfully neutralized in the body, if there is no circulatory disturbance in the kidney, but if the latter trouble is present it shows the condition of the connections at this safety valve as well. It should be borne in mind that while the pregnant woman throws off normally more urea than the non-pregnant, she also uses more building material, and the conditions are so variable that each woman is a law unto herself. Therefore urea estimation is not a safe guide to show what the system is doing, but other things being considered, it is a great help. The pulse is the first to give warning, and must always be carefully watched; it is the surest indicator of internal conditions that nature has. A steadily-increasing arterial tension must be combated by giving vasodilators and nerve sedatives, until the causes can be removed, for in itself it can do great damage. We do not have to wait for subjective symptoms to arise and note them to say whether the patient is improving, but the pulse and general observation will show us every time.

After convulsions arise we must first meet the conditions and then as well as possible remove the causes. In controlling the convulsions, chloroform, morphine, chloral, bromides, veratrum etc., are useful, and immediate delivery is often thought of, by vaginal or abdominal cesarean section, and dilating the cervix with rubber bags, steel dilators, or manual dilatation (Hay's method), followed by accouchement forcé. Whether or not immediate delivery is necessary should be decided by the condition of the patient when we first see her. A patient whose arterial tone is good and responds to treatment should be given a chance, for bringing on of the onset of labor is a dangerous thing, not only to the mother, but also to the child. Olshausen records a mortality of 25 per cent. in cases occurring after labor, in favor of the view that interference with labor is not necessary and, indeed, may be harmful in some cases. Of course if when we first see the mother the arteries have worn themselves out or she will not respond to treatment, then the only chance consists in immediate delivery, with blood-letting, injection of salt solution, and stimulation. Venesection is only transient, and while it is the quickest way to reduce the blood pressure, in prolonged cases it is not by any means the safest.

If the convulsions are controlled by sedatives and vasodilators, and drowsiness, unconsciousness, and coma disappear after the attacks, the expectant plan can be followed, but if the pulse gives way to the extent of depression, and convulsions recur, even though less severe, and coma deepens, there is no time to lose, and delivery must be accomplished. In cases where vascular paralysis, due to the arteries being tired and worn out, is present, of course to use vasodilators with such a condition is criminal, but blood-letting, followed by infusions of salt solution, with stimulation and immediate removal of the child (vaginal cesarean, if possible), is in urgent need. In cases where acute nephritis exists, some are inclined to say that chlorides should not be used in the infusions, as they take fluids off into the tissues, but chlorides are active in helping to remove the fatigue stuffs and stimulate the individual tissue cells, which is more important than a little edema. When high arterial tension is present, it is well to give fluids cautiously or according to their elimination, at no time allowing the irritable vessels to become over-full or even full. Crofton aptly says that there is as much sense in trying to cure typhoid fever by amputating the rose spots as to cure a systemic disease (modern Bright's) by attention to the kidneys. Williams says that after convulsions have once occurred, then the woman must be delivered, but it seems more reasonable to decide what is best to do by the response to treatment and the present condition. Veit and Charpentier advocate morphine until the cervix is dilated, and then forceps. Zweifel says that convulsions cease in 66 per cent. after delivery, and that 28.5 per cent. die as result of expectant treatment. In a list of 4,000 cases of labor at Columbia Hospital, Washington, D. C., there were 48 eclamptic cases, with 12 maternal deaths, giving a mortality of 25 per cent., and all these cases were treated in an expectant manner, chiefly by vasodilators (veratrum) and sedatives (chloroform, morphine, chloral, etc.).

This expectant treatment is 3 per cent. ahead of Zweifel (who advocates immediate delivery), and most of these cases were not seen until the convulsions started or a short while before. In a

patient seen from the beginning of the attacks, who persistently grows worse and in whom all we can do does not restore normal arterial tension, then after one convulsion, or even before a convulsion, we should think of delivery. In all cases we are almost safe in acting according to the condition of the patient and the readiness with which she responds to treatment. I have seen patients who responded to treatment do well after two convulsions, carry the child to full term, and be delivered in good condition. After delivery is decided upon, vaginal cesarean section seems best indicated if we want quick work and the child is small, but on account of a bad-looking cervix and the urinary fistula that results in many cases from this procedure, if time will allow, rubber bags combined with Harris' dilatation and forceps are better. When the cervix is cartilaginous, abdominal cesarean section is sometimes advised, as Hillman gives 0.5 per cent. mortality from this operation. Hygienic treatment, the results of which are closely studied by the effect on arterial tension, will in a number of cases give the careful observer due notice of coming trouble, and although Blumreich has shown eclampsia to be of nervous origin in animals, the nerves cannot act without the arteries giving signs. Thyroid extract and milk diet have made edema, albumin, and other signs disappear. This, coupled with the fact that underaction of the thyroid is a most suspicious cause, justifies us in always observing this organ. Sweating, which in many instances is excellent treatment, if persisted in for too long a time, may become a harmful influence. Hot packs, now so much used, certainly allay nervous irritation a good deal, they dilate the blood vessels of the skin and help elimination, but if continued for too long time they pass the depressant stage and become very exhausting.

THE GALVANIC AND OTHER TREATMENT OF THE PROSTATE.

By JOHN V. SHOEMAKER, M.D., LL.D.,

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In revising for publication my late clinical lecture on prostatitis, I here present it anew with the mention, then omitted, of my employing the galvanic current which has been my mainstay for several years in the treatment of that affection. I do not by this statement imply any more than I say, that, in my treatment, constitutional means are not also employed, and that laxative medicines, diluent drinks, buchu, belladona, opium suppositories, and hot baths are not effective; but merely wish to say that, above all other means that I have found for reduction of hypertrophy of the gland, the galvanic current stands, in my estimation, first.

Its employment has also a remarkable incidental advantage. In all persons the flow of electricity in the rectum from the negative pole increases the caliber of the rectum, as though it had been inflated, and causes a simultaneous downpour of mucus. In some persons, additionally, these effects from the galvanic stimulus are followed immediately by urgency for defecation, which, of course, affords great relief from pressure on the congested and tender gland. In both instances, therefore, the congested areas are sensibly relieved. The administration is of the simplest character. All that the patient has to do is to make sure that it is to the *negative* pole of his battery that he attaches the reophore belonging to the metallic bulb of the prostatic electrolyzer before inserting it in the rectum. Should he, through carelessness, attach the reophore of the positive pole to the bulb to be inserted in the rectum, he would, by the hardening of the prostate, receive an injurious instead of a beneficial effect from the flow of the electrical current.

The prostatic electrolyzer, with a small wet-battery, has given instantaneous and immense relief to many sufferers. If my readers could only see some of the letters that have been received from patients, expressing a grateful sense of relief from gnawing or shooting pains, if they could have seen the reductions of hypertrophied glands, from the administration of the current, that I have witnessed, they would be entirely satisfied of the efficacy of the treatment.

I wish it to be particularly noted that I have here recommended a wet-battery. The manufacturers of the prostatic electrolyzer took a notion not long since

to sell it with a box of dry-cells instead of wet-cells. Thereupon I wholly withheld my recommendation to patients to purchase the prostatic electrolyzer unless they could procure with them wet-batteries. I am perfectly well aware that if a man gets a box containing enough dry-cells he may, for a time, have a battery adequate for the small amount of electric current needed for treatment of the prostate, which amount, however, let me say in passing, although never great, varies with the idiosyncrasy of the individual and the condition of the prostate. But, after all, what has a man really in the way of efficiency in owning a box with a number of dry-cells in it? A mere receptacle for holding the cells. The patient does not know to what degree they may have run down. Of course wet-cells also run down in the course of use, but, with a box of wet-cells and a bottle of exciting fluid, the patient can keep his bat-

tery always at the same strength of current. For the purpose of prostatic treatment a battery of dry-cells is like having a box of torpedoes. Set them off, and one has only the box left. Having a battery of wet-cells and a bottle of exciting fluid is like having a gun and powder; one can indefinitely load and fire the gun with the same force as at first. A wet-battery capable of producing thirty volts affords a margin for the range between the least sensitive and the most sensitive prostate. The Keystone Electric Company of Philadelphia, as a consequence of my remonstrance, has discarded the dry-battery and now supplies the electrolyzer with wet-cell batteries. A cut of the electrolyzer is presented on page 178.

Hypertrophy of the prostate does not usually appear until after forty years of age. In some instances, however, superinduced by masturbation or by excessive venery, it has occurred as early as thirty, and with all the usual senile characteristics. The morbid condition is not so much hypertrophy of the muscular stroma as of enlargement of the whole gland in the form of chronic inflammation. Usually, when there is only enlargement of the third lobe, the affection is glandular in character. In hypertrophy of the lateral lobes, with the formation of a bar, the morbid condition is nearly always fibromatous. There may be present in the tissue of the gland small fibromatous tumors, or they may be glandular and fibromyomatous. In most cases of prostatic hypertrophy there is also involvement of the deep urethra. Especially is this the case when there has been indulgence in masturbation or in excessive venery. Introduction of instruments by unskilled hands is a source of aggravated evil.

In the progress of the disease, the mucous membrane becomes much swollen and edematous; in consequence of which difficulty is experienced in micturition, tending, on account of retention and decomposition of urine, to produce the complication of cystitis. If hypertrophic changes occur chiefly in the lateral lobes, the firmness of the triangular ligament prevents enlargement at the apex. Hence comes about bulk towards the vesical orifice, which, being pushed upward and forward into the bladder, forms a large pouch posteriorly and a small one anteriorly. The posterior pouch becomes a reservoir for residual urine; and since the muscular wall of the bladder in this area is weaker than that of the other portion of the bladder, every time the viscus contracts in its function of emptying the bladder the pouch is stretched more and more, and thus, besides obstructing the urinary flow, becoming larger, receives and retains more and more residual urine. The mucous membrane over the trigonum becomes affected, and this still further obstructs the flow of urine. Should the hyperplastic process develop mainly towards the rectum, defecation is hindered and chronic constipation ensues. With the formation of a bar at the neck of the bladder, due to hypertrophy of the mucous membrane at the apex of the trigonum, between the lateral lobes, accompanied with the development of small tumors around the vesical orifice, a great obstruction is presented to micturition.

The normal structure of the bladder-wall may become much changed from the onset of prostatitis. Owing to distention and irritation from the residual urine, its muscular layer may become thin, inelastic, and atrophic, and produce an enormously enlarged viscus. On the contrary, the mucous membrane and the muscular fibers may become hypertrophied, so that the viscus may be able to hold only a few fluid-ounces. Often vesical calculi form and lie in the pouch described posteriorly to the orifice, but these may not give rise to symptoms of uneasiness. Should small tumors be present, they may become encysted by the condensed phosphatic salts present in the residual urine.

The symptoms of prostatic hypertrophy are seldom, if ever, confined to the prostate gland alone. The functions of the parts adjacent are also impaired by hypertrophic changes. With most patients, frequent micturition, especially at night and in the early morning, is the first symptoms noted by them. The recumbent position causes congestion in both bladder and prostate. As the disease progresses, however, more frequently repeated urgency to micturition takes place. Among the first symptoms is also that of increasing difficulty of micturition and an accompanying dribbling of urine. Seldom, at first, does the sufferer regard these symptoms as of much moment, ascribing them to natural changes arriving with advance of age. But soon, from increasing congestion in it and in the prostatic urethra, the bladder becomes perceptibly irritable even to his observation. Micturition becomes intolerably frequent and painful, with gradual decrease in the velocity and in the volume of the stream passed. A large amount of residual urine supervenes, accompanied by pyuria and decomposition of the urine.

The symptoms that usually next arise are either mild or severe pain radiating along the urethra and reaching the glans penis. This pain is aroused at the beginning of micturition, leaving a scalding or burning sensation when the operation is finished. On suddenly-cold, or on damp, chilly days, this pain is intensified. In some cases enlargement is uniform throughout the gland, but not sufficient to manifest itself to the patient until he happens to catch cold or to neglect to empty his bladder at proper intervals of time. Then it may be so congested as to prevent him from producing a drop. This complete retention of urine may, indeed, be the very first symptom to call the attention of the sufferer to his ill condition. Acute prostatitis varies in individuals; and even, at different times, in the same individual. There are sufferers with prostatitis who become apprehensive long before this stage of the affection is reached. In some patients there is a dull, aching pain in the scrotum, testicles, or rectum. A more rare symptom is incontinence of urine. The complications that may arise are hemorrhoids, prolapse of the rectum, inflammation of the testicles, tunica vaginalis, and epididymis. Should there be much cystitis, and of long standing, the sufferer experiences urinary poisoning and his general health is much impaired. He is liable to have headache, nervousness, insomnia, general malaise. He is usually constipated, with tongue heavily coated and with breath of urinous odor.

The diagnosis of hypertrophied prostate is easily made from its symptoms, and from digital examination, per rectum, of both gland and bladder. Instrumental examination of the prostatic urethra and of the bladder is obtained with bougies, coudé catheters, and stone-crushers. Thus can the caliber of the prostatic urethra and the condition of the bladder-wall be ascertained. The last information is acquired by passing the instrument gently over the bladder-walls. Then we readily detect, through tactile sensibility, whether or not the surface is rough, smooth, or tuberculated. Soft bougies should be employed to detect stricture of the urethra, which is often a complication of the disease.

Case I.—Mr. A. M., aged seventy-one years, mar-

ried. Occupation, lawyer. For a year before consultation with me he had had a slight dribbling toward the end of micturition. He next noticed that the stream was becoming smaller, and was projected with less force than normal; and then that it gradually became decidedly feeble and halting. At night he was obliged to get up two or three times to urinate. During the day micturition became more and more frequent. Upon digital examination I found that the prostate was enlarged in all directions, and was quite painful to the touch. The urine was negative and free from pus.

Case II.—Mr. J. B. S., aged fifty-six years, married. Occupation, superintendent of ironworks. He had had, up to the time he consulted me, a history of perfect health, except for the two previous days. Two days before he had taken cold, and on the following morning was unable to urinate. His family physician had catheterized him twice during the second day. When I digitally examined him I found the prostate so enlarged that I could not sweep my finger over the whole area of the gland, the attempt giving him exquisite pain. He was able to void his urine soon after treatment began.

Case III.—Mr. H. G. F., aged forty-nine years, married. Occupation, clerk. When eighteen years of age he had had gonorrhea, but, following three weeks' treatment, had been apparently cured. He recognized that he had always been excessive in venery. A year and a half before he called upon me he had noticed that in urinating the stream was becoming smaller and smaller in volume. Finally the flow had become difficult to start. Two months before he saw me he had begun to feel a burning sensation along the urethra after micturition, and he had been obliged to rise two or three times every night to empty his bladder of its irritating contents. In the daytime micturition was also more frequent than it usually is. Digital examination revealed enlargement of the third lobe, the urine was alkaline and, microscopically, showed the presence of pus and of broken-down blood cells.

Case IV.—Mr. W. K., aged sixty-four years, married. Retired merchant. Five months ago he was first obliged to rise once during the night to relieve his bladder. Soon he was obliged to rise for the same purpose twice during the night, especially toward morning. His next symptom was slight tenesmus after micturition. Later, urgency to urinate increased in frequency during the day. When he first called upon me he was obliged to urinate every hour. His urine had an ammoniacal odor, was alkaline, looked cloudy, and contained pus and broken-down red and white corpuscles. Digital and instrumental examination revealed a vesical bar and hypertrophy of the lateral lobes of the prostate.

Case V.—Mr. J. H. B., aged fifty-one years, married. Occupation, traveling salesman. At first he had noticed a slight pain in the glans penis before and after micturition. Soon after that he became unable to sleep all night without voiding his urine, pain, and urgency to make water increasing, especially at night; the urgency becoming still greater, pain correspondingly increased, radiating into the left testicle and the rectum, producing desire for defecation. On damp, cold, rainy days, if neglecting to wear overshoes, or in otherwise feeling or catching cold, the disease was aggravated. Examination for stone was negative. Digital examination revealed a large, painful prostate. Examination with bougies proved that he had a stricture. His urine was alkaline, and contained pus and broken-down red and white blood cells and albumin, perhaps derived from the blood. The insertion of bougies produced a severe attack of catheter fever.

Case VI.—Mr. H. A. D., aged fifty-two years. Had been a sufferer for the past fifteen or sixteen years from severe gout. He had had many attacks of it, involving both feet and hands. His secretions were all characteristically gouty, especially his urine. His bladder had become irritable, and he had been obliged to rise several times a night to urinate. The irritation had finally become so great that he had been obliged to rise from ten to twelve times during the night. During the day he had been obliged to leave his duties every now and then to empty his bladder. The gouty characteristic of the urine was immediately corrected by me, but the irritability of the bladder remained for a while. On digital examination I found the prostate much hypertrophied, especially as to the middle lobe. Galvanic treatment was employed morning and evening, with the prostatic electrolyzer, for from ten to twenty minutes at a time. The patient took the dosage of from ten to twenty milliampères in strength. The prostate, at the end of three months, exhibited a more contracted and a softer constitution of body than at first. The excruciating pain that had been experienced before treatment began had long since disappeared. In the daytime the patient could easily retain his urine from three to four hours, and was obliged to rise only once or twice during the night. His bowels had been constipated before the treatment began. This was incidentally corrected by the use of the prostatic electrolyzer. The patient now regards himself cured of his ailment.

This last may justly be regarded as quite a severe case, and it shows how amenable to treatment prostatitis is, if only this be instituted within a reasonable time.

It may be thought that I am prejudiced against dry cells under all circumstances. They have their uses. What I object to is the employment of dry cells for the purpose of electrolyzation, because patients generally have no means of ascertaining the value, if any, of the electromotive force that they are using. And, lest the present reader should doubt my ability to judge of such a matter, I append a few lines of opinion from the Edison Manufacturing Company, which quotes from Cooper's book, "Primary Batteries," as follows:

"Speaking of dry cells, Cooper says: 'Certain defects are frequently observed. Deterioration takes place if the cells are kept in stock, even if no current is taken from them, and is shown chiefly by loss of electromotive force and increase of internal resistance. Another defect is that known as bursting. This bursting generally takes place in cells which are on circuit, but it is also liable to occur in cells which have never been used. A dry cell has the disadvantage that, when it is exhausted, it is of no further use, and must be thrown away.' "

So much for what the Edison company quotes. But it begins its own statement by speaking of the disadvantage which people have who do not possess volt meters, ammeters, or other instruments for testing electromotive force. The average user of the prostatic electrolyzer is not so equipped. With a dry-cell battery he is at the mercy of his ignorance of what his battery is doing for him. That is the single point at which I am driving. I wish, in prescribing batteries to go with the prostatic electrolyzer, to have them such (wet batteries) that the dosage, which I have also prescribed, shall be secured to the patient; not something less, or, perhaps, virtually nothing.

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APPENDICITIS AND MUCOUS COLITIS.

THE increased attention which has been accorded to appendicitis as a surgical disease, to be treated by operative measures at the earliest possible opportunity, has, no doubt, resulted in the performance of an operation in many instances in which the subsequent course of events showed that such a radical method of treatment was not indicated. This haste to operate is favored by an experience which has shown that the uncertainties connected with an acute attack of this disease make surgical interference the procedure of choice; but the haste which is often manifested also stands in the way of an accurate and careful diagnosis, and when a closely simulating condition is the cause of the patient's symptoms the removal of the appendix naturally fails to accomplish the desired end. One of these conditions is mucous colitis. This was discussed in a recent address by Prof. Dieulafoy, who showed that it was a disease likely to be confused with typical appendicitis. The patients have usually had one or more attacks of colitis, they are constipated, they may have from time to time evacuations of slimy, bloody stools, and complain of pain in the region of the cecum or the ascending, transverse, or descending colon. As appendicitis is often traced to a previous enterocolitis, the other clinical features of the case may be overlooked or underestimated, and the diagnosis of appendicitis given to the patient and operation advised. When the latter is done no evidence of peritonitis is to be found, there are no adhesions, and the appendix is entirely normal, as is proved by later histological examination. Furthermore, the attacks to which the patient has been subjected come on again after the operation, and the other symptoms of the colitis continue as before.

Dieulafoy is not inclined to attribute to the histological diagnosis of appendicitis the usual amount of faith with which this is ordinarily received. It has been found that in many cases when the gross appearance of the appendix was apparently normal the microscope showed bands of fibrous tissue, hypertrophy of some of the crypts, and a hemorrhagic follicilitis. Dieulafoy claims that if the appendix of an adult be examined after death, no matter what the cause of the latter, such changes will always be found, particularly in the distal portion of the organ, and they are of no especial importance. The effusions of blood and the follicular hemorrhages are not, it seems, evidences of appendical inflammation, but are due to trauma produced during the operation.

Such diagnostic errors will not occur if greater weight is given to the clinical picture of appendicitis as a whole rather than to any one symptom. The presence of pain in the right iliac fossa does not necessarily point to appendicitis, particularly if it is associated with an enterocolitis. Dieulafoy does not believe that appendicitis is one of the results of an enterocolitis, and it has been his experience that the presence of pain in the right iliac fossa in such cases points rather to a typhlitis than an appendicitis. The term typhlitis has not found much favor on this side of the water heretofore, but there are evidences that the necessity of the distinction is being recognized. Appendicitis, particularly that variety which is likely to be confused with an attack of colitis, affords a well-marked, characteristic clinical picture. The patient is suddenly seized with the pain, and there are no prodromal symptoms, whereas the individual suffering from colitis will give a history of intestinal disturbances extending over months and years. In both conditions there is tenderness in the right iliac fossa, but in the latter it is never so closely identified with McBurney's point; moreover the muscular rigidity, the hyperesthesia of the skin, nausea, vomiting, and a rise of temperature associated wtih true appendicitis are absent in mucous colitis.

There is no doubt that the feverish haste to operate in every suspected case of appendicitis is gradually abating and greater efforts are made to establish the diagnosis firmly before subjecting the patient to a procedure with which there must always be associated an element of risk. Dieulafoy's warning as regards the confusion of appendicitis with certain forms of colitis is in line with the conservative views regarding appendicitis which are being more universally adopted. This constitutes, however, in no way a restriction to the axiom that when we have to deal with an actual case of this disease early operation is the best possible procedure for the welfare of the patient.

PREMATURE ANNOUNCEMENTS OF MEDICAL DISCOVERIES.

IT used to be urged as a reproach to scientific medicine that it surrounded itself with mystery and refused to take the public into its confidence, working along behind closed doors and jealously guarding its secrets from the laity. And pity 'tis that in these latter days such a reproach can no longer be made. Now the consumption cures and the cancer cures are published to the world in the lay press before they are definitely formulated in the minds of their discoverers, and long before they have been put to the test of actual experience. It is impossible to calculate the misery of disillusion that followed the false hopes created by the premature publication of the tuberculin discovery. The wretched failures of the early experiments with this substance not only dashed the hopes of thousands of the tuberculous, but threw discredit upon scientific medicine, and brought a really valuable remedy into such disrepute that it was years before its subordinate but definite position as a therapeutic measure was established. We hope that the recent publication of an alleged cure for cancer will not have an equally sad and deplorable outcome.

In *McClure's Magazine* for August is an enthusiastic account of the value of trypsin injections in the treatment of this disease. The author, Dr. C. W. Saleeby, describes the researches made by Beard of Edinburgh which led him to the employment of this remedy, and on the strength of two inconclusive experiments on mice and two incomplete trials of trypsin injections in man, proclaims that at last a definite cancer cure has been found. "The giving of the widest and most immediate publicity to these facts," he says in conclusion, "seems to be a proceeding from which it would be cruel and cowardly to refrain." And what are the facts which it would be cruel and cowardly longer to keep from a suffering world? Two cases are reported, in neither of which an absolute disappearance of the tumor has occurred, and in one of which it is acknowledged that the patient is yet in danger of his life, "by reason of the poisonous action of the disintegration products of the growth;" and two cases of Jensen mouse tumor are related, in neither of which had the tumor disappeared when one animal died and the other was killed, but was only in process of "degeneration." A report such as this might be published in a professional journal, with an apology from the author for the paucity of his cases, without great harm, for it would stimulate to a trial of the remedy by others, and so lead to the collection of sufficient data upon which to base an intelligent opinion of the value of the treatment. The medical reader, knowing the uncertainties of diagnosis, and familiar with the erratic course of malignant growths, would accept the report with reserve and await the results of further experimentation before abandoning the knife and committing his patients to the peril of an untried, or at least unproved, remedy. But the layman who had been told that a cancerous tumor had been seen to melt away under the influence of trypsin injections would naturally believe that an absolutely certain remedy had been discovered, and would refuse the knife in his own case, possibly and probably with fatal result.

It may be that in trypsin a true remedy for malignant disease has been discovered, and the cases of Beard and of Shaw-Mackenzie, as related in the latter's work on cancer,* raise the hope that this may be true; but these cases are by no means conclusive, and merely offer encouragement for further trials. When, as Gaylord said in his paper read before the Medical Society of the County of Kings, reported in another column of this journal, a spontaneous cure of cancer in mice took place in 22 per cent. of his laboratory cases, it is unpardonable to announce to the world that trypsin is a certain cure for the disease, because in two mice which had received the injections the tumors were found in a condition of regression, even when this evidence is strengthened by two unconvincing cases in man. Even in the happy event of the discovery of an actual cure for cancer, the premature announcement of the fact in a lay magazine, before the remedy has become familiar to the profession and the proper method of its application has been established, must be deplored. At the best it exposes the remedy to the fate of tuberculin, and at the worst it raises false hopes in the minds of many sufferers from operable cancer which will lead them to reject the surgical measures which are as yet the only ones which the conscientious physician can advise.

*The Nature and Treatment of Cancer, by John A. Shaw-Mackenzie, M.D.; New York: Wm. Wood & Co.

CIGARETTE SMOKING IN GREAT BRITAIN.

THE MEDICAL RECORD has on several occasions commented editorially on the subject of cigarette smoking; in fact, the question has obtruded itself so frequently in press discussions, and has been made the subject of so much debate in the various State legislatures, that no self-respecting medical journal could do otherwise than refer to the matter with more or less frequency. In all these discussions by the press and the legislative debates the assertion is made with the utmost confidence that every kind of cigarette is harmful in the highest degree, and that perhaps the majority of lunatics in the country become so on account of their addition to the cigarette habit. Most sensational tales of the evil results of this form of smoking were playfully bandied about, and the general public was taught to believe, and many persons did believe, that cigarette smoking is quite the quickest road to perdition, and is responsible for the ruin, body and soul, of countless individuals. In this vigorous crusade against the cigarette some States have even gone so far as to invoke the aid of legislation to stay the progress of the cigarette habit, and a strong prejudice has been created against cigarette smoking under any conditions.

Both the MEDICAL RECORD and the London *Lancet* took up the question some few years ago and decided that cigarette smoking *per se* was no more harmful than other forms of smoking; in fact, investigations went to show that cigarette smoking under certain conditions is the least noxious form of tobacco indulgence. These conditions are that the tobacco and paper used in the manufacture of cigarettes must be pure, that smoking must not be indulged in until adult age, and that the smoke of cigarettes must not be inhaled. When these conditions are fulfilled the cigar and pipe are more hurtful than the cigarette. Of course it cannot be denied that young boys, and even children, do smoke cigarettes, that the tobacco used in their manufacture is not always of the best quality, that cigarette smokers do frequently inhale the smoke, and that the convenience of the little paper roll tempts to overindulgence. It is the abuse of cigarette smoking and not its use that works evil.

The above homily is suggested by reading of the wave of indignation which has recently swept over Great Britain with regard to the matter. An American, the cause of this spasm of virtue on the part of the British public, was assisted by the ever-ready yellow press. Mr. Gaston, the American in question, is reported to have said: "You ought to prohibit the sale of cigarettes imported from America. The American cigarette is the worst thing our country sends you—worse than Chicago tinned meat." He furthermore went on to say: "Cheap cigarettes are drugged. Cigarettes are noxious articles, because of the cheap quality of the tobacco used, the filthy conditions under which they are produced, and the drugs used." This indictment is a sweeping

one, and only to a slight degree justified by the facts of the case. Moreover, it must be borne in mind that cheap cigarettes are by no means peculiar to America; indeed, cigarettes are sold at a cheaper rate in Great Britain—manufactured, too, in that country—than in the United States. When it is understood that cigarettes are retailed in shops of all kinds, in every part of London at least, at the price of a packet of six for one penny (two cents), it will be obvious to all that America has not a monopoly of cheap cigarettes. In truth, the patronage of children and young boys is especially catered to by certain tobacco manufacturers in England; perhaps to a greater extent than in any portion of America. As regards the purity or otherwise of cheap cigarettes in Great Britain, although we do not recollect to have seen an authorized analysis of the same, it would seem reasonable to assume, from the price at which they are sold, that inferior qualities of tobacco are used in their manufacture.

Undoubtedly cigarette smoking by the young is an evil, and one that should be scotched as soon as possible. Discreet legislation should aid in preventing cigarette smoking by children and youths. Also the point that both tobacco and paper are pure should be absolutely insisted upon. Parents, too, in the case of the young, might use their influence to good effect. Of course it would be well if no one smoked at all until he had arrived at the age of twenty-one, or even more; but to pass a law with such a provision would be interfering too greatly with the liberty of the individual.

It is probable that legislation with regard to cigarette smoking will be introduced into England ere long, as it is evident, from all the signs, that a strenuous crusade is to be undertaken there against the paper-wrapped cylinder.

The Diagnosis of Joint Affections.

Although the diagnosis of joint affections has been much facilitated by the application of radiography to this use, the interpretation of the negatives obtained is not always easy. The close apposition of the various structures concerned, and their lack of contrast in density, make the problem of securing ideal depictions of joint conditions one of the most exacting that the radiographer is called upon to solve, and innovations intended to diminish its intricacies are to be viewed with interest. A suggestion that seems promising is that made some time ago by Werndorff and Robinson of distending the synovial cavity of the joint with oxygen before taking the radiograph in order to secure better differentation of the soft parts. The idea has been taken up with enthusiasm by Wollenberg (*Medizinische Klinik*, No. 20, 1906), who has devised an apparatus for the generation of oxygen by the catalysis of hydrogen peroxide with potassium permanganate; and Hofia (*Berliner klinische Wochenschrift*, No. 28, 1906), presents a series of twelve radiographs, showing what may be accomplished in this way in obtaining radiographs of the knee joint. The synovial pouches of the normal joint are strikingly demonstrated, and it needs but a little study of the pictures, showing dislocated cartilages, floating bodies, rheumatic and other forms of arthritis, proliferations of the synovial fringes, tuberculous disease of bone and synovia, etc., to convince one of the clearness with which intra- and periarticular changes are revealed by using this technique. The injections are said to be painless, or nearly so, and the absorption tion of the injected oxygen usually takes place in from twenty-four to forty-eight hours. It ought not to be very difficult, by allowing oxygen to flow from one of the commercial tanks into the smaller reducing chamber provided with an improvised manometer, to obtain the gas under the pressure of one-half to three-quarters of an atmosphere, which is said to be most suitable for the purpose, without resorting to the somewhat cumbersome and expensive apparatus of Wollenberg. Apparently there is no danger connected with the maneuver. Aside from the diagnostic uses of the method, it is not inconceivable that under some conditions it might prove of therapeutic value also.

The Serum Treatment of Cancer.

Much has been said in the papers recently of a publication by Dr. Bashford of the British cancer fund laboratory regarding the serum treatment of cancer in mice. He is quoted to the effect that "We are now able to produce at will all the features of spontaneous cancer in mice, and to protect healthy mice from all consequences of inoculation with experimental cancer. This having been achieved, it is not too much to hope that further development of the experimental study of cancer will ultimately yield results having a direct bearing on the nature and treatment of the disease." This is apparently no more than was announced by Dr. Gaylord of the Buffalo laboratory a year or so ago, but it is significant coming from the British cancer fund commission, which has until now regarded the subject of the cause and prevention of malignant diseases with absolute agnosticism.

News of the Week.

The "Pacific Medical Journal."—The first issue of this journal since the San Francisco disaster appears as a double number for May and June. It is devoted entirely to the medical aspects of that catastrophe, and is full of matter of absorbing interest. The entire plant of the *Journal* was destroyed by the fire, and with it went Dr. Winslow Anderson's large medical library, all the files of the *Journal*, and many manuscripts. The nucleus of a new library has been supplied by a number of the medical publishing houses, and the genius of the editor has revived his always interesting journal. Friends who have back numbers of the *Pacific Medical Journal* are asked to send them to Dr. Anderson, 1914 Pacific avenue, San Francisco, in order that the files may be reconstructed so far as possible.

Board of Health Exhibition.—On July 30 the Board of Health began its series of open-air stereopticon exhibitions intended to educate the masses in matters of hygiene and to discourage the use of patent medicines. The chief efforts at present are being directed against tuberculosis, and the views shown are photographs of sanatoria, diagrams of healthy and diseased lungs, etc., and a series of slides, each giving some hygienic direction tersely expressed, such as warnings against spitting in public places or using patent medicines, and directions as to the manner in which the consumptive poor can increase their chances of cure. These directions are written in both English and Yiddish,

and later on it is the intention to add other languages. Other exhibitions will be given at intervals of a few days in the various small parks of the lower East and West sides, the last one being scheduled for October 1.

Foreign Regulations Concerning Meat Importation.—The health officers of London have formulated regulations regarding the importation of canned goods, which provide that the name and address of the manufacturer and the date of canning be impressed on all tins; that 1 per cent. of each consignment shall be opened on importation and examined before the goods are marketed, and that food intended for canning shall be inspected by an independent official prior to being canned. The use of preservatives is strictly prohibited. The Bundesrath of Germany has voted to prohibit the importation of pickled meats unless lymphatic glands are present to make trustworthy examination of the meat possible.

Food Adulteration in Germany.—According to a consular report received by the Bureau of Manufactures, food adulteration has been carried to an extreme degree in Germany, and it is stated that trained chemists are regularly employed by large and supposedly reputable firms for the purpose of performing the sophistications scientifically. The report states that there were in Germany in 1888 1,400 prosecutions for adulterating food products; in 1898 the number had increased to 3,000; in 1901 to 3,586, and in 1903 to 6,000. Butter, sausage, wines, chocolate, cocoa, brandy, and medicines have been found to contain absolutely dangerous substances used for adulteration.

Enforcing the Free Alcohol Act.—A new department of the Bureau of Internal Revenue has been established for the purpose of carrying out the provisions of the denatured alcohol act passed a short time ago, and Dr. A. L. Crampton of Maryland has been made chief of the division. The regulations governing the administration of this law will not be completed until the return to this country of Internal Revenue Commissioner Yerkes, who is in Europe making an inquiry into the operations of denatured alcohol laws in England, Germany, and Holland.

Infant Mortality in Chicago.—Twenty years ago, out of every thousand infants in Chicago, under one year of age, 220 died annually. Last year, 1905, only 5,831 infants died out of 42,005 living under one year of age, a proportion of less than 139 in every thousand, and a decrease of considerably more than one-third (37 per cent.). Twenty years ago, of the total yearly deaths of infants in this city, one-third occurred in July and August, and the average of the July and August deaths of infants for the last decade was nearly one-fourth (24 per cent.) of the yearly total. Last year, out of the total 5,831 infant deaths, 1,317 occurred in July and August, a proportion of 22.5 per cent. of the total, and a decrease of nearly one-third (32.4 per cent.) in the midsummer mortality of infants, from the rate of twenty years ago.

Infant Mortality from Diarrheal Diseases.—The mortality statistics of this city show that, while between May 28 and July 22, 1905, there were 2,070 deaths from intestinal disorders among children less than five years of age, this year only 1,475 children succumbed during the same period.

Operation on Prof. v. Eiselsberg.—It is reported that Prof. v. Eiselsberg of the University of Vienna, who has advocated early operation in appendicitis rather more warmly than most European surgeons, was himself operated on for this condition on July 27. It is stated that he said nothing of his illness to his assistants until, after having performed two appendectomies himself, he ordered the room prepared for a third operation and announced himself as the patient.

An Appendicitis Epidemic.—Three members of a household in Flushing have recently suffered from appendicitis, and it is stated that in June, in the Flushing Hospital alone, twenty-nine operations for appendicitis were performed, while there were many such operations at the homes of the patients.

Dr. Frank Billings of Chicago is reported in the papers to have presented to the Marshall Field estate a bill of $25,000 for one week's attendance during the late millionaire's fatal illness in this city. If this report is correct, Dr. Billings probably holds the record for big charges by an internist—$25,000 for seven days, or $3,571.43 a day, at the rate of $1,300,000 a year.

Disapproval of Newspaper Notoriety.—At a meeting held June 14, the Montgomery County Medical Society, of Illinois, adopted a resolution censuring physicians who allowed reports of their cases to appear in the daily press.

Roosevelt Hospital.—Improvements to cost $12,000 are being projected for this hospital, and the plans have been filed with the Building Department. It is intended to enlarge the hospital by making over the present two-story amphitheatre at the south end of the administration building on Fifty-ninth street into a four-story building. Double floors are to be introduced in the additional stories, and a large lecture hall will be built on the new second story. The two new upper floors will be fitted as dormitories for the hospital employees. A new amphitheatre will be erected on another part of the hospital grounds to replace the abandoned one.

Immigration Statistics.—The revised figures of the Bureau of Immigration show that during the fiscal year ending June 30 the number of immigrants admitted to this country was 1,100,073, as against 1,026,499 for the previous twelve months, a gain of 73,574. It is stated that most of the newcomers were from Austria-Hungary, Russia, and Italy, and that they were somewhat inferior in type to those of previous years. During the year 12,433 applicants for admission to the ports of the United States were debarred, for various causes, principally disease of some sort. Seventeen aliens were arrested and deported, on the ground that they had been brought to America for immoral purposes. Thirteen criminal proceedings were instituted against those who were responsible for the importation of these people, and ten of the defendants were convicted.

Death at Advanced Age.—The death is reported from Laporte, Ind., of the oldest woman in the State, and possibly in the country, who died on July 30, at the age of one hundred and twelve years. She was born in Volgravitz, Poland, and came to this country in 1870. One of her claims to distinction was that she had seen Napoleon on the occasion of his invasion of Russia in 1812.

A Day Without Accident.—On July 30 twelve hours passed without a single death being reported at the Coroner's office, the time running from 10 o'clock Sunday night to the same hour on the following morning. It is stated that this is the first time that such an interval has occurred in many years.

The Meat Question in Germany.—According to the official statistics 43,421 horses and 2,151 dogs

were slaughtered in Germany for food under Government inspection during the first three months of 1906. This was an increase of 7,522 horses and 366 dogs over the number slaughtered during the same time in 1905. It is estimated that among the poorer classes the consumption of this sort of meat was much larger than the official records show.

The New Jersey State Board of Medical Examiners.—At the annual meeting of this board, held in Trenton on July 5, the following officers were elected: *President,* Dr. W. H. Shipp, Bordentown; *Treasurer,* Dr. C. A. Groves, East Orange; *Secretary,* Dr. John W. Bennett, Long Branch.

Organization of the Medical Society of the Southwest.—An association, having this title, was organized on July 16 at Kansas City, Mo., subject to ratification at the initial meeting, to be held at Oklahoma City in the latter part of October. Delegates from the State societies of Missouri, Kansas, Oklahoma, Indian Territory, Arkansas, and Texas effected the organization and elected the following as officers of the new body: *President,* Dr. Frank Lutz of St. Louis; *Vice-Presidents,* Drs. J. T. Wilson of Sherman, Tex., Marion King of Texarkana, Ark., P. S. Mitchell of Iola, Kan., and C. S. Bobo of Norman, O. T.; *Secretary and Treasurer,* Dr. F. H. Clark of El Reno, O. T.

Medical Society of the Missouri Valley.—The nineteenth annual meeting of this society will be held at Council Bluffs, Ia., on Thursday and Friday, September 6 and 7. Special railroad rates will be in effect at this time within a radius of one hundred miles of Council Bluffs. Papers must be in the hands of the secretary, Dr. Chas. Wood Fassett of St. Joseph, Mo., before August 10, in order to secure a place.

Central Iowa Homeopathic Medical Association.—At the meeting of this society, held in Cedar Rapids on July 19, these officers were elected: *President,* Dr. Chas. H. Cogswell, Jr., Cedar Rapids; *Vice-President,* Dr. A. E. Crew, Marion; *Secretary,* Dr. H. C. Parsons, Anamosa; *Treasurer,* Dr. Struble, West Liberty.

Quarterly Journal of Inebriety.—The summer number of this publication has been considerably enlarged and improved in typography, and the table of contents includes several contributions of more than ordinary interest. The front cover contains an excellent portrait of the late Dr. N. S. Davis.

Minnesota State Tuberculosis Sanatorium.—The first building of the Minnesota State Tuberculosis Sanatorium, which is to be located at Walker, will be erected at once at a projected cost of about $59,000, including the construction of outdoor sleeping shacks.

Obituary Notes.—Dr. G. J. CAMPBELL of Halifax, N. S., son of Dr. D. A. Campbell, died on July 19 of pneumonia, at the age of twenty-six years. Dr. Campbell was graduated from Dalhousie Medical School two years ago, and, after taking a post-graduate course at Johns Hopkins University, had begun practice at Halifax. He was married on July 10, and his illness began on his wedding trip.

Dr. E. M. MCQUESTEN of Nashua, N. H., died suddenly of heart failure at Squirrel Island, Me., on July 19, at the age of sixty-two years.

Dr. GEORGE W. JONES of Colfax, Ia., died on July 14, at the age of fifty years as the result of a fall in getting into his carriage.

Dr. THOMAS JEFFERSON EATON of Kansas City, Mo., died on July 18, at the age of sixty-six years. He was born in Circleville, O., and after serving as hospital steward in the Civil War, he was graduated from the Ann Arbor Medical School in the class of 1867. He practised in Dalton, Ind., Baldwin, Kan., and in 1871 he settled permanently in Kansas City. He was well known as a chemist and toxicologist, and was a member of the first faculty of Kansas City Medical College.

Dr. ROBERT R. LIVINGSTON of Plattsmouth, Neb., died on July 20 in Lincoln, Neb., at the age of forty years. He was graduated from the Omaha Medical College.

Dr. A. A. MCWHORTER of Burkeville, Tex., died on July 15, at the age of eighty-one years. He was born in Alabama, and began the practice of medicine in 1849.

Dr. WILLIAM P. BRANDEGEE of this city died on July 30 of apoplexy, at the age of forty-two years. He was a native of Brooklyn, and after being graduated from Yale University received his medical degree from the College of Physicians and Surgeons in 1889. He was visiting surgeon to the New York Eye and Ear Infirmary.

Dr. ALEXANDER HUTCHINS of Brooklyn died on July 30 in his seventy-first year. He was born in this city and was graduated from Williams College in 1857. He received his professional education at Harvard Medical School and the New York Medical College, from which he received his degree in 1860. During the Civil War he served as assistant surgeon in the navy and later began practice in Brooklyn. He was for three terms president of the Medical Society of Kings County, and was also President of the Medical Society of the State of New York, in 1883. Dr. Hutchins was for twenty-five years a visiting physician at the Brooklyn Hospital, and was also consulting physician at St. Mary's and St. John's hospitals.

Correspondence.

QUININE IN CHOLERA.

To the Editor of the Medical Record:

SIR:—Referring to the letter in the MEDICAL RECORD of February 17, 1906, page 269, of Erskine B. Fullerton, M.D., of Columbus, O., with regard to the treatment of cholera with quinine, in which he invites particular attention to the results obtained by Dr. Ussher, at Van, Asiatic Turkey, and cites his experience as fully verifying his prediction that the mortality from cholera should fall somewhere between two and twenty-five per cent., it will no doubt interest Dr. Fullerton, as well as your readers, to learn the results obtained in the following cases which were consecutively treated at the San Lazaro Cholera Hospital, by the quinine method which he advocates:

CASE I.—J. A., aged 24; male; Filipino. Admitted 6.35 P.M., May 10, 1906. Constant vomiting made administration of quinine impossible until 11.30 P.M., when ten grains of quinine sulphate were given by the mouth; vomited before one hour had passed. 1.30 A.M., high enema of five hundred c.c. of a 1-1,000 quinine sulphate solution was given and retained. Several attempts made afterward to administer quinine by the mouth, but the drug was always promptly vomited. 5.30 A.M., 500 c.c. of a 1-1,000 quinine sulphate enema given. At 8.15 A.M., 10 grains of quinine sulphate given per mouth and retained about one hour. 10.15 A.M., high enema consisting of 500 c.c. of a 1-1000 quinine solution given and retained. At noon, 10 grains of quinine were given by mouth. Patient comatose. Died at 3.10 P.M.

CASE II.—J. S.; aged 36; male; Filipino. Admitted 9.30 P.M., May 13, 1906. 9.45 P.M., 2 capsules of five grains each quinine sulphate, given per mouth; same vomited about 10.15 P.M. 10.30 P.M., high enema consisting of 500 c.c. of a 1-1000 quinine solution given and retained. 11.30 P.M., 10 grains quinine given per mouth. 12.30 P.M., 10 grains quinine given per mouth. Patient comatose. Died 1.30 A.M., May 14, 1906.

CASE III.—C. M.; aged 18; female; Filipina. Admitted 4.20 P.M., May 15, 1906. Ten grains quinine given per mouth at once; promptly vomited. Five grains quinine solution given hypodermically 5.30 P.M. High enema con-

sisting of 500 c.c. of a 1-1000 quinine solution. Died 6.05 P.M., May 15, 1906.

CASE IV.—A. M.; aged 19; female; Filipina. Admitted 12.10 P.M., May 23, 1906. 12.30 P.M., ten grains quinine sulphate given by mouth; vomited ten minutes later. 12.50 P.M., high enema consisting of 500 c.c. of a 1-1000 quinine solution. 1.30 A.M., 10 grains quinine given by mouth; vomited 2 P.M. 2.30 P.M., 10 grains of quinine given per mouth, and retained. 3.30 A.M., 10 grains quinine given per mouth and retained. 4.30 A.M., 10 grains quinine given per mouth and retained. 5.30 A.M., patient in comatose condition. Died 7.20 A.M.

CASE V.—S. C., aged 26 (?); male; Russian. Admitted 8.30 P.M., June 2, 1906, in fairly good condition. 8.45 P.M., 10 grains quinine given per mouth; promptly vomited. 9 P.M., high enema consisting of 500 c.c. of a 1-1000 quinine solution, given and retained. 11 P.M., 10 grains quinine given per mouth; promptly vomited. June 3, 1 A.M., 10 grains quinine given per mouth and promptly vomited. The same dose was repeated at 3, 5, 8 and 9 A.M., with similar results. 12 o'clock noon, high enema, consisting of 500 c.c. of a 1-1000 solution of quinine. 10.45 P.M., 10 grains quinine given per mouth; impossible to retain. Patient continued to vomit everything which was given during the remainder of June 4 and 5. Morning of June 6 was able to retain small amount of food. Ten grains quinine given per mouth every hour until five doses had been taken. Same treatment repeated June 7. Morning of June 8, two doses, 10 grains each, of quinine, given. Patient died 8 P.M. June 8.

From the foregoing cases it will be seen that for the five cases, treated in the order in which they arrived at the hospital, the mortality was one hundred per cent. In addition to the quinine given in capsules, pills, and solution, stimulation with strychnine, hypodermically, was used, artificial heat was applied, and saline enemas were given as indicated. In the last case reported, it will be seen that the patient remained in the hospital from June 2 until June 8, and that during a considerable portion of this time he was able to retain the quinine, but without effect.

In this connection it will probably be interesting to record that in the treatment of cholera in the Philippine Islands it has been the experience of physicians who have treated many cases, often several hundred, that during the active stage of the disease the vomiting is so continuous that it is impossible to administer quinine, and that patients who pass successfully through the vomiting stage usually recover without further treatment. During the vomiting stage, the use of physiological saline solutions by transfusion, and the maintenance of the body temperature by the application of artificial heat to the extremities, etc., offer a better chance for success than any other form of treatment that has been tried.

VICTOR G. HEISER, M. D.

P. A. SURGEON, U. S. P. H. and M. H. SERVICE, DIRECTOR OF HEALTH for the PHILIPPINE ISLANDS; CHIEF QUARANTINE OFFICER for the PHILIPPINE ISLANDS.

MANILA, June 20, 1906.

INFANT FEEDING.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—There is an error in your report of my remarks on Dr. H. L. Coit's paper read before the Medical Society of New Jersey, in that I am made to express an opinion which is exactly contrary to my beliefs. The main points of my remarks were that a baby's digestive organs cannot always digest the same amount of the same kind of food in the same number of minutes. Therefore, I do not believe in exact regularity of feeding. The old-fashioned way of feeding the baby a little every time it cries is about as bad as anything could be. Scientific regularity of feeding is a great improvement on this, but I think there is room for further improvement. Do not feed the baby until its stomach is absolutely empty and it is really hungry, whether the interval be three hours or eight hours. Then feed it until its stomach is full and distended. Do not feed again until there has been ample time for digestion, evacuation, contraction, and rest. It is feeding too frequently that dilates the infant's stomach, not feeding too much at one time.

D. E. ENGLISH, M.D.

MILBURN, N. J.

The Immortality of Dogs.—Prof. Howison, head of the department of philosophy at the University of California, has asserted his belief in the immortality of dogs and some other of the lower animals, on the ground of their intelligence, as evidenced by their power to reflect and to overcome hindrances to their intellectual faculties.

OUR LONDON LETTER.

(From Our Special Correspondent.)

NEWCASTLE ROYAL HOSPITAL—TWO HEALTH CONGRESSES—DILATED VEINS IN CHILDREN—BULLET IN BRAIN—INSPECTION OF SCHOOL CHILDRFN—FOOD QUESTION—ROYAL COLLEGE OF SURGEONS ELECTION—TROPICAL SCHOOL—OBITUARY.

LONDON, July 13, 1906.

ON Wednesday the King and Queen went to Newcastle and opened the Armstrong College and the new Royal Victoria Infirmary. Of the latter the King, then Prince of Wales, laid the foundation stone on June 20, 1900, on behalf of Queen Victoria. This new hospital has cost £300,000, the late Mr. John Hall giving one-third of this sum and Lord and Lady Armstrong another third. The building is on the pavilion system and provides 450 beds—200 more than were available in the old infirmary. The ward pavilions are two-storied, the ground floor being intended for surgical cases, and the operating theaters being also here. The upper floor is for medical cases. The administrative block is the center. The site is described as the best possible, and the buildings as a whole are a credit to the great city of Newcastle-on-Tyne, the chief magistrate of which the King has directed to have the title of Lord Mayor in commemoration of their majesties' visit. A statue of Queen Victoria in front of the hospital was also unveiled by the King.

The twenty-third annual meeting of the Royal Sanitary Institute was opened on Monday at Bristol, and the proceedings will close to-morrow. The Lord Mayor opened an exhibition in connection with the congress, the High Sheriff gave a reception, and Bristol gave entertainments on the usual liberal scale. There were conferences of municipal representatives, of medical officers of health, of engineers and surveyors to sanitary authorities, veterinary inspectors, sanitary inspectors, and so on.

Sir Edward Fry in his presidential address defined science as the exact knowledge of subjects which admitted exact knowledge, and said our increase of scientific knowledge had seriously added to our duties as individuals and citizens. In former years, on the appearance of scarlet fever or smallpox, the head of the family called in a doctor, possibly a nurse, and kept the bedroom door shut. His drains he let alone, unless some horrible odors called upon him to throw down a few bucketfuls of water, having done which he felt he had done the whole duty of man. Now all this is changed, nurse and patient are secluded, and disinfection reigns. The medical officer of health has to be notified, drains are looked into, and every new drain-doctor finds his predecessor was wrong, his system faulty, and now only perfection in sight. Even then the householder may doubt whether he or the bacilli will win the day. As is the fate of the individual, so, declared the president, is that of the municipality or other group of citizens responsible. The State requires due provision for public health, at any rate a proper state of drains, and here the local authority finds itself in a dilemma. If it uses the nearest stream, it is obnoxious to the attacks of riparian proprietors; if it puts its refuse on land adjoining, tenants and landlords object to the nuisance. From conflicts thus brought about a mass of litigation has accumulated, and the labors of an army of experts contending for opposite opinions have not yet presented us with an exact sanitary science.

After an interesting review of the periods of advance and retrogression from the time of the ordinances of Mena to our own age, Sir Edward Fry dated our serious work on sanitation to the earlier reign of Queen Victoria. In 1847 several acts were passed, containing codes or collections of provisions as to cemeteries, gas works, and town improvements. The next year, 1848, the first general public health act was passed, constituting a central controlling authority, the Board of Health, and providing for the creation of local Boards of Health. In the early seventies so great interest had grown up in sanitation that the brilliant leader of the Conservative party in 1871 propounded as the watchword for his followers the maxim: "Sanitas sanitatum et omnia sanitas." The act of 1872 divided all England and Wales into sanitary districts, urban and rural, with a local body in each to secure the due administration of the laws regarding public health. In 1875 a further act gathered into one the whole body of legislation on the subject, and so formed an important epoch in our sanitary history. In the next year this Institute was founded, it had done much, and he trusted the labors on which they were now entering would be very fruitful.

Another Health Congress was opened on the 27th ult., viz., the Royal Institute of Public Health. This was at Cork, and Dr. Windle presided. In his address he pointed out the great need of Ireland in respect to sanitation. The people were decimated by tuberculosis, which had been steadily increasing, while in England and Scotland it was just as steadily diminishing, as shown in the death rates. In 1864 it was 3.3 in England and 2.4 in Ireland, and slowly

the two lines converged, until in 1881 they met at 2.6. Then they began to diverge again, Ireland taking the worse direction, reaching 2.9 in 1904, while England was 1.7. With this advancing rate from tuberculosis there was also an increase of lunacy. Of every 10,000 persons in Ireland, 52.6 are registered as lunatics or idiots. There is also an increase of this rate in England and Wales, the figures being 34.71, nearly 11½ less than in Ireland.

The cause of these scourges in a country so favorably situated for health had puzzled many. Some attributed the calamity to alcohol, but though the people drank more than was good for them, his knowledge of both countries led him to conclude that in the country parts they were less given to this vice than in rural England. But there was room for more improvement. He thought overdrinking of tea, especially tea that had stood long, had much to do with a low state of health in both countries. The housing problem was considered the chief cause by others, but that was equally acute in England, both in cities and rural districts. He did not think the two causes named afforded a satisfactory explanation of the state of affairs. In Ireland there was another factor—not nearly so extensive in England—viz., the emigration curse, which drew away the best blood of the race in its youngest and most promising members.

The decline of the population is an old story, said the president. During the awful time of the famine and fever Ireland lost 2,000,000 of her population. Following that came emigration, which in sixty years took away 4,000,000, mostly in the prime of life, leaving the oldest and least healthy at home and resulting in a birth rate the lowest in the world. After referring to what some expected England to do for her sister, the president asked whether full advantage had been taken of the Public Health Acts, Housing Acts, and other enactments. Are the public keeping an eye on the health committees and seeing that they do their duty? Are they promoting temperance, better housing, native industries? Are they helping the medical profession in their efforts to improve the health of the community? It is for want of knowledge that many things are neglected, and for that reason these congresses should be welcomed as opportunities of stirring up public opinion on points of vital importance to the public welfare.

At a meeting of the Society for Studying Disease in Children, held last month at Oxford, Dr. A. G. Gibson drew attention to enlarged veins in various positions met with in out-patients suffering from wasting anorexia and general debility. The commonest situation is on the front of the chest, but they are often seen on the back between the shoulders, under the chin, and on the temples. The veins are quite small and flush with the surface. They are not seen in all thin children, *e.g.* in those wasted with cerebral tumors, so probably they are dilated. In some there is obstruction, shown by dilated external jugulars, even in the upright position, which do not collapse on deep inspiration. Fourteen cases were recorded showing this sign, seven male and seven female, aged from four to ten years. In eight cases there was tubercle in the family. The left jugular was enlarged in fourteen, the right in twelve. Veins on the chest were seen in thirteen, on the back in two, on the temples in seven, under the chin in two. Downy hair on the back was found in six. The retraction murmur of Eustace Smith in ten. Small glands in nine. Tuberculous peritonitis was present in two cases and suggested in a third. In only one case was an anatomical explanation traced—that was in tuberculous peritonitis, in which a dilated left jugular had been noticed some time before death. At post-mortem a ring of small fleshy glands surrounded the left innominate vein, and sections of one of them showed tubercle bacilli. Other glands, caseating and with many bacilli, were found in the mediastinum. The cases seem to be such as Eustace Smith ascribed to tuberculosis of the mediastinal lymph glands, and it was suggested that in the absence of syphilis, lymphadenoma, or sarcoma, enlarged jugular veins which do not collapse on inspiration might, in conjunction with other signs, be of value in the diagnosis of early tuberculosis.

Very curious cases turn up at inquests, but rarely anything like one at Wolverhampton, on the 29th ult., which the coroner declared the most remarkable he had had before him in his fourteen years' office. It appeared that in April the deceased was found "smothered with blood," and said he had had a fall. The next day he had fits, and called in a doctor. Later he lost the sight of one eye and went to the eye infirmary. Afterward he was in the general hospital, and still later an out-patient. After death a small scar in the right temple was observed and a bullet in two fragments. There was fracture of the base of the skull and an abscess in the brain. The optic nerve was injured. It transpired that a revolver was found in his bed on the morning when he was found bleeding, and that he was a heavy drinker. A verdict of suicide while temporarily insane was returned. The curiosity is that this man had received severe injury to the brain and was under hospital and other treatment for weeks, but no one seems to have suspected the origin of his symptoms.

Yesterday the education minister received a deputation of medical men and others, headed by Sir V. Horsley and Sir L. Brunton, to urge the importance of all school children being examined by medical men, with a view of preventing consumption and other maladies, which might by careful inspections, they said, be ultimately as rare as leprosy. The minister promised to consider the matter, but referred to the cost as a difficulty. On Monday next the executive of the British Medical Association will wait on the minister, with the same object.

Yesterday at the Court of Common Council there was further discussion on the importation of food. The Chairman of the County Council attended and was welcomed by the Lord Mayor. The subject concerned all the metropolitan boroughs. One member deprecated any attempt to secure hasty legislation, and reminded the Council that on the previous evening the President of the Local Government Board had introduced a bill on the subject into the House of Commons. The debate was adjourned. In reference to milk supply, it was reported that in the city the adulteration was 7.5 per cent., as compared with 12.5 per cent. for all London. It might be well to take milk in the city rather than outside.

Mr. Henry Morris was yesterday elected president of the Royal College of Surgeons. Mr. Edmund Owen and Rickman Godlee were elected vice-presidents.

Dr. Henry Fraser goes to the Malay Straits as director of the Institute of Medical Research. He succeeds Dr. C. W. Daniels, who has returned to England to take an official post in the School of Tropical Medicine.

The death is announced of Dr. Wm. Robinson Hill, J.P., at the age of seventy, who practised for many years at Lymington, where he also took a great interest in the municipal affairs, for which borough he was a justice of the peace. He was physician to the local convalescent home. In earlier days he had served resident offices at Brompton Consumption Hospital and elsewhere. He was M.R.C.S., 1856, M.D.Edin., 1857.

OUR LETTER FROM CONSTANTINOPLE.

(From Our Special Correspondent.)

A NEW BACTERIOLOGICAL INSTITUTE—THE INDUSTRY OF PRODUCTION OF ROSE ESSENCE—A REMARKABLE CASE OF FECUNDITY—A MATERNITY HOSPITAL—SEA BATHS.

CONSTANTINOPLE, July 5, 1906.

THIS week the foundation has been laid for a new bacteriological institute in the Turkish metropolis. This institute is being elevated on the grounds of the Civil Veterinary College. It is intended to provide it with all the necessary materials and instruments for the production, in large quantities, of different kinds of antitoxic sera, sufficient in amount for the needs of the entire Ottoman Empire. The Sultan himself and his right hand in these matters, the present Minister of Agriculture, Selim Melhamé Pasha, take a very active interest in the new establishment. It is said that Abdul-Hamid offered out of his private purse a considerable sum for its construction.

The industry of rose essence production in the vilayet (province) of Hudavendighiar, in Asia Minor, an industry which brings in considerable sums annually into the State revenue and which inspired the Turkish Government with great hopes, has lately suffered very much from the fraudulent practices of the provincial distillers. It has been found out that the latter used to add to the pure essence of roses, in order to increase the bulk of the material sold, all sorts of extraneous matter. In consequence of this falsification, the ancient productive industry has lost much of its former reputation on the European markets. To remedy this state of affairs the competent authorities have taken energetic measures. Further frauds will be rendered almost impossible. The Governor of the named vilayet has received strict injunctions to watch over the practices of the distillers. Besides, a special commission has been sent to the place, with instructions to visit all the distilleries and to introduce the necessary improvements.

From the town Ipsala, near Dédéagatch, comes the news of a remarkable case of fecundity. A Turkish lady, who in May, 1904, was delivered of quadruplets, gave birth, last week, to two sons and a daughter. Mother and all the children are enjoying perfect health.

The Sultan has authorized the opening of subscriptions in order to gather the necessary funds for the construction of a maternity hospital in the Ottoman capital. Already over 1,000 Turkish liras have been subscribed by different officials, and the Padishah himself heads the list with a generous donation of several hundred pounds. This maternity hospital will be a real boon to the poorer population of

Constantinople, where unscrupulous and ignorant midwives hold their almost unlimited sway. These midwives have very frequently not the slightest notions of even the primitive rules of cleanliness and disinfection. The mischief that results is, of course, great. This will soon be remedied, as the maternity hospital which is to be constructed in the near future will be provided with all the necessary accommodations and a sufficient staff of medical men, as well as trained and qualified "*sages femmes.*"

The sea-bathing season has begun on the banks of the Bosphorus. The water of the latter being always clean, fresh, and cool, a bath in it is invigorating and acts beneficially on the whole system. The Ottoman Government has ordered this year that the pavilions constructed on the shores of the Bosphorus and the Marmora Sea for bathing purposes should be removed as far as possible from every source of contamination, and should be equipped with all the requirements of modern hygiene.

Progress of Medical Science.

Boston Medical and Surgical Journal, July 26, 1906.

The Diagnostic Significance of Decidual Tissue.—W. P. Graves cites several cases in which the microscopical examination of decidual tissue has been of importance or interest from a diagnostic standpoint, and concludes as follows: (1) The passage of a decidual membrane in a patient with symptoms of pregnancy and with a mass on one side, together with a history of flowing, is extremely significant of an extrauterine pregnancy, but cases do occur where this seemingly conclusive chain of evidence is not proof of an extrauterine gestation. (2) An ordinary miscarriage may be preceded by the exfoliation of a part or the whole of the decidua vera. (3) The pathologist who receives a specimen of decidual tissue should make his report with extreme reservation, to avoid the commission of a serious surgical blunder. (4) It may be impossible to differentiate, even with the greatest microscopical care, between an exfoliated dysmenorrheic membrane and the decidua of an extrauterine pregnancy, and the pathologist before committing himself to a diagnosis should insist on knowing accurately the history of the patient.

New York Medical Journal, July 21, 1906.

The Early Diagnostic Signs of Tabes Dorsalis.—C. S. Potts gives a general description of the early symptoms of tabes, without presenting, however, anything new. Various writers are quoted with reference to the frequency of different symptoms, but the percentage figures differ considerably. Potts calls attention to the fact that ataxia is not an essential symptom of tabes dorsalis, in many instances the disease being present for a considerable length of time before it appears, and more rarely in others it remaining absent. That persistent pain, especially of the lancinating and girdle types; of paroxysmal attacks of gastric pain, and vomiting, or other symptoms characteristic of the various crises which may occur in the disease; of painless swelling of one or more of the joints; of transient attacks of diplopia; of primary atrophy of the optic nerve, of paræsthesia, such as numbness, tingling, sensations as if walking on velvet, etc.; of difficulties in urination; loss of sexual power without apparent cause; and of physical exhaustion produced by slight cause, or any of the other symptoms above mentioned should arouse our suspicions, and lead us to examine for the presence of some of the symptoms belonging to the second class, viz., condition of the reflexes, pupillary symptoms, sensory paralysis, muscular hypotonia, etc. It may be stated that when not apparent, slight degrees of ataxia may be discovered by using delicate tests, such as standing on one leg, walking backwards, standing on the toes, performing fine movements with the fingers, as buttoning clothes, touching the end of the nose, etc., all being performed with the eyes closed.

Is Neuralgia a Functional Disease?—Based on the pathological findings in eight cases, A. Gordon offers the following conclusions: (1) The occurrence of degeneration of the peripheral nerve is frequent if not constant in neuralgia. (2) This nerve degeneration is very probably a primary condition, which as a neuritis assumes an ascending course and involves secondarily the Gasserian ganglion. Although this contention is still debatable, there is great probability in favor of the above view. (3) The blood-vessels undoubtedly play a certain role in the causation of a degenerative state of the peripheral nerves. (4) It is difficult if not impossible to draw a sharp distinction between neuritis and neuralgia, as accumulated facts show an anatomical basis in the latter affection. (5) In view of these anatomical facts, it is highly important to remove surgically a nerve affected with so called neuralgia as early as possible after a short trial of medical treatment is given.

Journal of the American Medical Association, July 28, 1906.

Generalized Blastomycosis.—C. Christensen and L. Hektoen give detailed histories of two cases of disseminated blastomycosis. In both the onset was sudden and without the presence of any chronic external lesion that might be regarded as the primary localization. In the first case, the cutaneous and subcutaneous lesions developed simultaneously after an acute febrile attack, and suggest the lungs as the portal of entry of the infection. In the second case, the localization of the infection seems to have been in the deeper tissues before the subcutaneous invasion. The authors suggest the advisability of experiments to determine whether the organisms are easily conveyed by air currents when dry, whether they retain their vitality and infectiousness after drying and whether or not they are carried in minute droplets of sputum. The peculiar predilection for the skin possibly indicates an important avenue of escape of the germs, it may be to new hosts. The authors also suggest the possibility of infection of skin lesions by way of the blood current and not always, as seems to have been supposed, by direct implantation from without. No effective treatment has yet been devised. In these cases the authors tried a sterile vaccine prepared from the blastomycetic organism, with the idea of stimulating opsonic action according to the method of Dr. A. E. Wright. Unfortunately, the patients passed from their observation, leaving the hospital before any definite conclusion of value could be drawn as to the result of this treatment. Work is now being done to devolop certain methods by which the effect of the blastomycetic vaccines can be tested *in vitro*, so as to furnish some guidance in the treatment of the disease.

Interstitial Gingivitis Due to Autointoxication.—E. S. Talbot discusses the subject of interstitial gingivitis from intoxication as shown by the blood pressure and urine examinations. The alveolar process, he holds, is supplied by end arteries, and like other organs thus supplied its nutrition is quickly disordered by vascular disturbance. Moreover, on account of the rigid tissues surrounding the arteries, the toxin-containing blood sets up an irritation more quickly and inflammation resulting in bone absorption occurs the earlier. Everybody suffers more or less from interstitial gingivitis, and as the excretory organs fail with age the condition is apt to become more pronounced. From an examination of the urine in fifty cases he finds evidence of renal insufficiency or excessive suboxidation products producing renal strain. Study of the tables shows two conditions present: First, autointoxication due to intestinal fermentation and faulty elimination, as shown by the indican; and second, kidney overstrain and renal insufficiency due to hepatic insufficiency. The liver failing to eliminate toxins, kidney overstrain causes the blood to become surcharged with toxins and acidity. Cardiac and arterial degenerative changes with cardiac hypertrophy and vascular disturbances and insufficient supply of blood are the consequences. Just what these toxins are is not determined, but it is supposed that they are unoxidized products of metabolism, such as poisonous ammonium salts, xanthin, etc., which can, when injected in the blood of small animals, produce kidney disease. They probably act in different ways on the vasomotor nerves, the heart muscle and the end arteries. Talbot has also investigated the blood pressure, in these cases which plays its part in helping to set up the irritation, and he points out that the gums are likely to be first involved in various toxic affections, owing to the peculiar position of the end arteries and bone and their increased liability to be affected after the completion of growth. He enumerates a number of symptoms and conditions, of which interstitial gingivitis may be a significant prodrome, such as hypochondria, neurasthenia and Bright's disease.

Palliatives for Hay Fever.—Solomon Solis-Cohen reviews the present methods of treatment of hay fever. He considers first the suprarenal preparations, and states that for some individuals and in certain seasons the systemic action of these preparations is sufficient to induce and to preserve comparative comfort. He states that they must be absorbed from some mucous membrane to be effective and that they are practically useless when given by the stomach. He discusses the Dunbar serum, which he considers a distinct addition to our therapeutic resources in the treatment of this disease. Both pollatin and suprarenal preparations should be snuffed into the nose or insufflated the first thing in the morning, and if this is thoroughly done and if the individual remains recumbent for ten or fifteen minutes afterward such an application will usually suffice for a whole day. In the internal treatment of this condition he recommends a combination of hyoscine hydrobromate, camphor, and sugar of milk, or a combination of atropine, camphor monobromate, and Peruvian balsam.

When possible patients should go to an immune region. Dark glasses are often useful. The diet must be simple, and on the whole sparing, omitting pastries and sweets.

Routine Urine Examinations.—M. H. Fussell insists on the value of the routine examination of the urine. Even though albumin and casts do not always mean nephritis, their presence in the urine indicates that a vital organ is at fault, and that this fault must be duly considered in the diagnosis, prognosis, and treatment. There are other conditions also to be made note of which are of the greatest importance, such as the presence of glucose, of pus, of blood and persistent or intermittent excessive amount, all of which are to be taken note of in the routine examination. He gives, as illustrating his view, his own experience for the past eighteen months, in which he has examined the urine of 763 patients, and found abnormalities in 15 per cent. He gives abstracts of the case histories of a few of these which prove, he thinks, that it is only by a routine examination that we can make more than a tentative diagnosis in 15 per cent. of all patients treated. To examine the urine only when symptoms point to a genitourinary disease is to miss the diagnosis in many important cases in time to be able to give them benefit by treatment.

American Journal of the Medical Sciences, July, 1906.

Belladonna Poisoning Due to Belladonna Plasters.—C. M. Dolan reports three cases of poisoning due to belladonna plasters. When the writer first saw one of these patients she was in a highly excitable state. The pupils were dilated, the mouth was dry, and a diffuse erythematous rash was noted on the face, shoulders, and chest. The poisoning was due to a small belladonna plaster that had been placed on her chest. The plaster was removed, and in a few hours the symptoms subsided. Atropine is rapidly eliminated, and the removal of the belladonna plaster in these cases will probably be rapidly followed by a cessation of symptoms, as a general rule. Any further treatment would consist in the administration of the physiological antidotes of atropine.

A Bacteriological Study of the Certified Milk of Philadelphia.—A. H. Stewart reports the results of the examination of samples of certified pasteurized milk. Fifty-six per cent. of these samples were found deficient. Fifty-seven and four-tenths per cent. of the samples of certified milk were below the standard. The writer declares that one examination of milk per month is not sufficient. More frequent examination should be made in the summer than in the winter. Examinations for pus and streptococci should be made before the milk is sold. Extra expenses connected with the examination should be abolished at once. Milk should be delivered the same day it is brought to the dealer. Refrigerator cars are necessary. Covered milk buckets should be used in all dairies. A campaign of education should be started at once to teach purchasers of milk that the milk they receive is usually two days old. The milks which are reported here are probably among the best produced in this country.

Hepatoptosis or Floating Liver.—J. F. Binnie says that hepatoptosis may be partial or complete. This condition is commonly associated with ptosis of other abdominal viscera. Various causes are enumerated: Increased weight of the liver, cholelithiasis, laxity and elongation of the hepatic ligaments, trauma, failure of support from below by the intestines and abdominal wall, malnutrition, and neurasthenia. Tight lacing is sometimes cited as a cause, but this is incorrect. A snugly-fitting corset supports the liver. This affection is undoubtedly far more common than is usually supposed. The symptoms of hepatoptosis vary with the degree of the affection. Constipation and tympanites are almost always present. The subjective symptoms are those of neurasthenia. In the treatment of such cases attention should be paid to nutrition, and the muscles should be built up by massage and appropriate exercises. Any increase of the ptosis should be prevented by supporting the abdomen with a well-fitting corset or belt. Operative aid is indicated in severe grades of ptosis.

The Lymphatic Drainage of the Pharyngeal Tonsil.—George Bacon Wood states that the pharyngeal tonsil is essentially an organ of early life. The writer injected the pharyngeal tonsil, using essentially the same technique as that used in injecting the faucial tonsils. The process is very difficult. In about six trials, only two good injections were obtained. The writer describes his work as follows: "In the first injection a small retropharyngeal gland was present and was deeply injected. One gland of the posterior group of upper deep cervical glands was also injected, but the connecting lymph trunk was not found. In the other specimen the lymphatic vessel, after a careful dissection, was traced from its exit at the lower part of the pharyngeal tonsil to its entrance into a little gland of the posterior group of the upper deep cervical glands. The route of this lymph vessel is as follows: Running posteriorly from the lower part of the pharyngeal tonsil, the vessel penetrates through the posterior pharyngeal wall, entering the retropharyngeal space; then it runs downward and outward just below the insertion of the rectus capitis anticus major, and between this muscle and the bodies of the cervical vertebræ: still running obliquely downward and outward, it passes beneath the sheath of the great vessels of the neck until it reaches a position almost opposite the posterior border of the sternocleidomastoid. It then turns directly outward, and enters one of the small glands situated just below the tip of the mastoid, along the posterior border of the sternocleidomastoid muscle. The three most important sources of infection of the cervical lymph glands are the gums, the faucial tonsils, and the pharyngeal tonsil. Infections entering through the pharyngeal tonsil involve the lymph glands just beneath the posterior border of the sternocyldomastoid. Clinically, the enlargement of these glands may be diagnosed by a diffuse swelling of the upper part of this muscle.

Recent Advances in the Physiology of the Digestive Organs Bearing on Medicine and Surgery.—Walter B. Cannon speaks of recent studies which show that neither ether, nor the cooling of the viscera, nor the drying, in abdominal operations, checked to any marked degree the onward passage of food. On the contrary, even the most gentle handling within the peritoneal cavity was followed by absolute cessation of gastric peristalsis. The onward passage of food was retarded by the fingering of the stomach and intestines. These observations were made on normal, vigorous animals. There is a very close relation between the functioning of the alimentary canal and the general state of the body. There also exists an interrelation of different parts of the canal which unites the digestive processes in an orderly series of successively dependent events. In relation to the former statement, it has been proved that depressing emotions not only check the movements of the stomach and intestines, but also inhibit the secretion of the gastric juice. Chewing food that is relished starts the flow of gastric juice. The presence of gastric juice in the duodenum causes the flow of bile and the pancreatic secretion. The pancreatic secretion stimulates the formation of kinase, which activates the trysinogen. On the motor side of digestive activities, the presence of material in the stomach normally starts gastric peristalsis. Acid in the stomach seems to be the cause of the opening of the pylorus through which the food passes. Acid food in the duodenum closes the pylorus and originates segmenting movements to churn together the food, pancreatic juice, and bile. The masses are carried forward by peristalsis, and in new situations their presence occasions segmentation. Many problems are yet unsolved, and, as the writer states, the need is for more men to look for the hidden things.

The Lancet, July 14, 1906.

Microbic Cyanosis.—An unusual case is reported by G. A. Gibson and C. C. Douglass, whose patient was a woman of thirty-six years, subject to headaches with giddiness and faintness and a peculiar change in the complexion. This latter change had been a matter of gradual development during a period of two or three years. Various examinations were made of the bodily secretions and excretions, and it was found that in the blood there was an organism present, either the *Bacillus coli communis* or some very closely allied organism of the colon group which was obtained in pure culture from the blood. It was apparently without the power of producing nitrites *in vitro* in peptone water, but it was impossible to say what the result of its chemical activity within the blood might be. It seemed to the authors very desirable that these observations should not be taken as final, but a provisional reading of the case seemed to be this: That the original source of mischief lay in the bowel, that a systemic infection had taken place, that nitrites were being constantly produced in the body in varying amounts (thus possibly explaining the varying degrees of cyanosis), and, finally, that nitrites acting on the hemoglobin constantly kept a varying amount of it in a state of methemoglobin—a condition in which oxygen was very firmly united to the hemoglobin molecule and would not separate from it for the needs of the body cells. They add that the condition belongs to the group of affections often termed false cyanosis. At the time the case was reported the patient's condition was practically

unchanged. The obvious therapeutic indications were considered to be intestinal antisepsis combined with the abundant use of diluents.

Buboes and Their Significance in Plague.—A series of cases is reported by W. Hunter, who gives also an analysis of the studies (as regards buboes) on 1,000 fatal cases of bubonic plague. He notes that all bubonic swellings show the presence of extraneous microorganisms. The infection with other bacteria would appear to occur early. The microorganisms most frequently found present are staphylococci, streptococci, the bacillus coli, and its varieties. These organisms exert a deleterious action on the *Bacillus pestis,* and in advanced buboes are found present even in greater numbers than the bacillus pestis. It would appear to be of importance to determine what part the *Bacillus pestis* actually takes in the formation of the bubo. In the author's opinion it is extremely doubtful if the plague bacillus can be held responsible for the full development of the bubo; in fact, his own experience leads me to believe that buboes are the result of the local growth of the *Bacillus pestis* plus pyogenic bacteria, and the latter by their more active growth cause a full development of the bubo with all its typical pathological appearances, and eventually crowd out the actual bacillus pestis itself.

Hints to the General Practitioner on Eye Strain and Its Symptoms.—J. Hinshelwood divides the symptoms of eyestrain into local and general. The former include headache, uncomfortable sensations in the head, giddiness, insomnia, congestion of the eye and lids, blinking, and retinal asthenopia. The latter is often met with in neurasthenic conditions of the nervous system, and the treatment must be directed to the improvement of the general condition. There is often an intestinal autointoxication. Local treatment such as rest, protection from bright light, and the use of ocular analgesics such as holocaine and dionine will afford a certain amount of relief, but no permanent benefit is assured until the general system is set right. In general the author says that in treating eyestrain it is important to impress on the patient that more is required than the prescription of suitable glasses. The patient must be instructed to use his eyes in an intelligent way so as to throw a minimum of strain upon them and allow the function of vision to be exercised under the most favorable conditions. Attention must be given to the length of time the eyes are used for near work, to the size of the objects looked at, and to proper illumination. The intelligent cooperation of the patient is necessary in such cases to bring about a satisfactory result. Any local affections of the lids, the passages, or of the eye itself, of course require careful treatment. A patient will not be able to use his eyes with comfort until all pathological conditions of the eye itself, of the lids, and the tear passages have been removed.

British Medical Journal, July 4, 1906.

The Relation of Ulcerative Colitis to Dysentery.—A. E. Carver believes that there is some evidence that the bacillus of Flexner and Shiga occurs in cases of colitis. In three cases of ulcerative colitis, a positive result was obtained in one and a negative in two, with reference to agglutinative power. Flexner has already pointed out that the agglutinative reaction is obtained comparatively early in the course of the disease in dysentery, and that it disappears at an early date. This Carver considers as scarcely to be wondered at when one appreciates how great the chances are of a secondary infection occurring from the large bowel, and it is quite possible that the nature of such secondary infection may determine the clinical variety of the colitis. Reference is made to several epidemics of acute colitis. In some the symptoms were practically identical with those of acute bacillary dysentery, as were also the pathological lesions. The author believes that such articles as infected blankets (from bacillary cases) may be the medium of provoking outbreaks of colitis.

The Effect of the X-Rays Upon the Leucocytes in the Blood and Bone Marrow in the Leukemia.—According to R. J. M. Buchanan the action of the rays is of a twofold nature. First, they inhibit overproduction in the marrow; and second, they exercise a destructive effect on the leucocytes themselves. This is very evident in the blood count. Coincidently the spleen diminishes in size. In the blood the large, finely granular myelocyte, and the large, coarse granuled eosinophile myelocyte, which give the blood in leukemia so distinctive a character by their presence, and which are not usually to be found in normal blood, are rapidly reduced in numbers, and have been said to disappear entirely. The author notes that in examining stained specimens from cases which have not been exposed to the rays the large myelocytes have been present in great numbers. After exposure the polymorphonuclear cells appeared to be the most numerous; then the transitional, and least numerous of all, the myelocytes, large and small. This condition is quite evident, even without a differential count. Moreover, in all the cases in which the myelemia has been marked, nucleated red blood cells have been present and easily detected in stained specimens. After the ray treatment no nucleated red cells have been found. The author's main conclusions are summarized in the two propositions above stated.

Total Laryngectomy for Recurrent Epithelioma of the Larynx.—The patient of S. White was a man of sixty-four years who had been hoarse for a long time. A growth was discovered on the cord and removed after a thyrotomy. Immediate relief was soon succeeded by laryngeal stenosis requiring tracheotomy. Some two and a half years were passed comfortably, a large tube being worn, when bleeding began from the tracheotomy wound. An ulcer was found running upward from the wound. Cuttings from its edge showed typical epithelioma tissue. Laryngectomy was done (operation detailed) and the patient made a fairly prompt recovery. Six months later he could swallow well, was in good health, had no respiratory difficulty, and could carry on conversation in a loud, sibilant whisper by drawing air through his nose into his pharynx and expelling it buccally.

Berliner klinische Wochenschrift, July 9, 1906.

Retrograde Currents in the Esophagus as a Cause of Coating of the Tongue.—Kast, by giving a number of persons capsules containing lycopodium, was able to demonstrate the existence in the esophagus of currents proceeding from the stomach toward the mouth. The persons experimented upon swallowed the capsule in the evening and one or two hours later the mouth was thoroughly rinsed out. The next morning the mouth was again rinsed out and the water used examined microscopically for the presence of lycopodium grains. In six out of eleven cases the test substance was found in the mouth the morning after the dose had been swallowed. The author believes that the rhythmical alterations of pressure in the thorax due to the respiratory movements, the pulsation of the heart and aorta, and the movements of the diaphragm and the body as a whole, cause the walls of the esophagus to rub against each other in such a way as to produce an upward current in the capillary column of fluid existing in the collapsed tube. He then goes on to express the theory that the manifestations of heart burn may be explained by the entrance into the esophagus of portions of hyperacid gastric contents, and to suggest that the phenomena of coating of the tongue and oral fetor that accompany disturbances of gastric digestion are dependent upon this passage upward of material from the stomach.

Münchener medizinische Wochenschrift, July 10, 1906.

Experimental Observations on Framboesia Tropica in Monkeys.—Neisser, Baermann, and Halberstädter while studying syphilis by means of inoculation experiments carried out in Java also took up the matter of the position of frambesia tropica in regard to syphilis. They investigated the possibility of the transmission of the disease from man to monkeys, from monkey to monkey, the result of inoculations with material from the organs of frambesic monkeys, and the inoculation of frambesia and syphilis in the same monkey. These experiments, though not carried out on a very large number of animals, lead the authors to conclude that frambesia is a disease which can be transmitted from man to the higher and the lower monkeys, and that it is transmissible from monkey to monkey. The positive result of inoculations with material from infected glands and organs shows that the poison of frambesia is disseminated generally throughout the entire body. The experimenters also succeeded in obtaining successful inoculations with both syphilitic and frambesic virus in the same animal, and they believe, therefore, that the two diseases are etiologically different, though the similarity in their clinical manifestations suggests the possibility of some fundamental resemblance.

Oral Eczema.—Galewsky states that certain people are especially susceptible to some of the ingredients used in the popular mouth washes and toothpowders, and that in these the use of such preparations is sufficient to evoke more or less severe eczema of the lips, angles of the mouth, and chin. He reports sixteen instances of this sort in which the skin was reddened and scaly, there were painful rhagades in the angles of the mouth, the mucous membrane of the lips was swollen and tender, and all movements of the lips were painful. Those who are susceptible to irritants of this sort are people with very delicate skins, especially if they suffer from a tendency to seborrhea, and in individuals with a general eczematous diathesis. A study of the ingredients in the various mouth washes used showed that oil of peppermint and oil of cloves seemed most likely to be responsible for the condition, though other substances employed, such as tincture of arnica, salol, formaldehyd

etc., might also come into question. It appears that the volatile oils, and especially the terpenes contained in these, are most likely to cause eczema of this variety. The treatment consists in stopping the use of the irritant, and in the application of bland ointments or lotions.

The Origin and Prophylaxis of Chronic Diphtheria.—Grunwald has observed two cases of this affection, which must be distinguished from these instances in which individuals simply serve as chronic bacilli carriers. Previously only six cases of chronic diphtheria have been reported, and the author describes one of his cases in detail. The patient was a man of forty-nine years, who presented a membraneous inflammation of the tonsils and soft palate which had begun four months before. The condition had been considered to be due to syphilis, and had been energetically treated on this basis, but diphtheria bacilli were found in the membrane, and under a nonirritating local treatment recovery finally followed. The author considers that chronic diphtheritic inflammations of this sort may be due to the nonuse of antitoxin during the acute stages of the disease, and to the resort to topical or general remedies, such as mercury, which are likely to keep up a condition of local irritation or to impair an already weakened tendency to recovery.

Deutsche medizinische Wochenschrift, July 5 and July 12, 1906.

The Prevention of Baldness.—Lassar says that in order to combat baldness successfully it is necessary to begin as promptly as possible after it is first noticed that the hair is beginning to fall. Healthy hairs, he says, do not come out, and if hairs are found on the pillow, on the clothing, or in the hairbrush, the indication is given for beginning the treatment. One of the most important, yet very generally neglected prophylactic measures, consists in frequent ablution of the head, a measure that is still considered injurious by many people. On the contrary, frequent shampooing and rubbing of the head is the best preventative of baldness. Another feature on which the author lays much stress is the necessity for cleanliness in all utensils used in the barber shop or in private. Actual baldness cannot be cured, but a great deal can be done to prevent its onset by properly treating the tendency to falling of the hair. A course of treatment is outlined, of which the following are the most important features: Daily shampooing with soap and hot water, followed by drying and the application of a 1-1000 solution of bichloride of mercury. This is allowed to evaporate, and the scalp is then rubbed with a 1-400 solution of thymol or naphthol in alcohol. Finally, an ointment is applied containing one part of salicylic acid, two of tincture of benzoin, and fifty of vaseline. In obstinate case the treatment is begun by the application of tar liniment, which is removed ten minutes later with the soap.

Potato Dishes for Diabetes and Obesity.—Sternberg recommends the following method of preparation of potatoes for use in the dietary of diabetic patients or persons under treatment for obesity. The potatoes are peeled and grated with a coarse grater, the pulp being allowed to fall into a vessel containing water. After standing for a time it will be found that the potato starch has separated from the fibrous material and has settled at the bottom of the receptacle. The fibrous material in the upper layers of the fluid is poured off and is strained through cheesecloth, most of the adhering starch passing through into the filtrate. The solid mass remaining on the cloth can then be utilized as the groundwork for the preparation of a great variety of dishes with which eggs, cream, milk, etc., can be combined. Articles of food prepared in this way contain very little carbohydrate, but retain the taste of potato, which is often a craving among patients who are denied the vegetable, and are also very satisfying, although the nutritive value of the potato fiber itself is, of course, very slight. The author has found this method of preparation very useful, and he gives the recipes for a considerable number of dishes.

The Origin of Pulmonary Tuberculosis.—Schlossmann and St. Engel agree with Behring that pulmonary tuberculosis is usually a late manifestation of an infection contracted during infancy or childhood. They describe the following experiment, undertaken in order to demonstrate the possibility of intestinal infection under conditions which preclude any participation of inhalation in the process. Young guinea pigs were etherized after five or six hours of starvation and their stomachs exposed by a laparotomy. A small amount of a tubercle bacillus emulsion was then injected into the organs under the most rigid precautions to avoid any peritoneal contamination with the organisms. Tubercle bacilli are found in the lungs of such animals a few hours after the bacilli have been injected together with milk or cream, and guinea-pigs in whose abdominal cavities a piece of the lung of such an animal is inserted a few hours after the original inoculation, without exception die of tuberculosis. The authors believe that the bacilli traverse the intestinal wall, and passing through the mesenteric lymph nodes, which are more permeable than the glands in other portions of the body, reach the thoracic duct and together with the chyle are poured into the venous blood stream, from which they readily reach the lungs. They are of the opinion that in most cases tuberculous infection takes place in this way during infancy or childhood.

Further Observations on Spinal Anesthesia.—Freund, who has used this method extensively, speaks highly of it and expresses the view that it not only will not disappear from the operating theatre, but may even become one of the most important means of anesthesia. In the period from May, 1905, to June, 1906, he has employed the method in 209 cases, and he believes that as the experience of operators increases the drawbacks heretofore considered inherent in the method will be found to diminish. One point on which he lays stress is that the injection be made exactly in the middle line of the spinal canal and as high up as possible. If the anesthetic fluid be injected laterally it is apt to enter a series of blind canals in this situation and is prevented from exerting its full potency. For gynecological operations the author recommends that after the injection the patients be placed for twenty minutes flat on the back with the pelvis elevated at an angle of 20 to 25 degrees. By doing this proper distribution of the area of anesthesia is secured, but its extension too high up when the patient is put in the Trendelenburg position is prevented. In making the injection it is preferable not to allow more than 4 c.c. of spinal fluid to escape. Another point on which the author lays stress is that no attempt shall be made by pricking or pinching to determine the extent of the anesthesia before the operation is begun, as he considers that in nervous patients the success of the method may be impaired by such procedures. The patients comprised in this series ranged from eighteen to seventy-three years of age, and the operations performed covered the usual routine of gynecological work. One death is reported, that of a woman of seventy-three, with a fibroid uterus, who died eight minutes after the spinal injection and before the operation had been begun.

The Demonstration of the Spirochaeta Pallida in the Preputial Nerves.—Ehrmann has succeeded in demonstrating this parasite not only in the immediate neighborhood of nerve fibers of the prepuce in cases of chancre, but also in the interior of the fibers themselves. He, therefore, concludes that the spirochetes are able to travel along the lymph spaces of the connective tissue to the neurilemma and through this. It, therefore, appears highly probable that the spirochetes under these circumstances travel centrally along the nerve fibers, and it does not seem impossible that, like the causative agents of other diseases, such as hydrophobia and tetanus, they may be able to ascend along the course of the nerve tracks and later on give rise to the parasyphilitic affections, especially tabes. The fact that the latter disease usually begins in the lumbar cord appears to corroborate this view, since it is well known that the virus may remain latent for decades in localized depots.

Chauffeur's Fracture.—Mühsam reports two instances of this injury, which is the result of backfiring during the act of cranking the motor. In the one instance the fracture was a simple one of the lower end of the radius attended by but little displacement, but in the other there was a very marked degree of deformity owing to longitudinal dislocation of the fragments. The ulna was also somewhat displaced toward the radial side. According to Lucas-Championnière this type of injury may be either direct or indirect, according as the fracture is caused by the impact against the forearm of the crank handle, or is the result of forcible hyperextension of the hand still grasping the handle. In the latter case the severity of the injury and amount of displacement produced depend largely on the point in the circumference of the circle described by the crank at which the sudden recoil takes place, there being less danger of dislocation if the backfiring occurs when the hand has begun the upward movement. The prognosis and treatment are the same as for ordinary fracture of the radius.

Syphilis in the Pathogenesis of Tabes Dorsalis.—Gino de Pascalis believes that syphilis determines a degeneration, more or less rapid, of the nervous elements, and this is the primary fact in the pathogenesis of tabes dorsalis; meningeal alterations and vascular changes come on as a reactive process solely. In the central nervous system reactive processes give increase of connective tissue, and of substitution in the neuroglia. When any morbid cause determines a change such as brings about a slow sclerosis of tissue in an organ, with an increase of interstitial tissue, the pathogenic agent influences at the same time the tissue of the organ itself and its framework.—*Il Policlinico.*

Book Reviews.

HANDBOOK OF SURGERY. By GEORGE BURNSIDE BUCHANAN, B.A.Cantab., M.B., C.M., F.R.C.S. (Glasg.), Assistant Surgeon, Western Infirmary, Glasgow; Assistant Surgeon, Glasgow Cancer Hospital. New York: William Wood & Company, 1906.

FOR some time there has been a demand for a short Handbook of Surgery; a book which, while small in size, should cover the entire subject and at the same time be reliable. The present volume is an attempt to supply this want, and from a careful examination of the book we think the author has been unusually successful. Of course the book is, to a large extent, a compilation, it could not well be otherwise; but the author seems to have chosen his authorities with care and wisdom, and the result is an attractive volume which will be of service to all who wish to revise the subject before presenting themselves for examination. With very few exceptions no attempt has been made to give full descriptions of operations; and the specialties of Eye, Ear, Nose, Throat, and Gynecology have been omitted except in so far as they trench on the domain of General Surgery. We have found a few minor inaccuracies, but they will be readily detected by the student, and in no way interfere with the general value of the work. The book is well arranged and written, clearly printed, attractively gotten up, and is extraordinarily complete. It is what it professes to be—a Handbook of Surgery—and is in no way to be confounded with a Quiz Compend.

UEBER DAS WESEN UND DIE VERBREITUNG DER WURMKRANKHEIT, ETC. Unter Mitwirkung von Dr. LÖBKER und Dr. HUGO BRUNS, bearbeitet im kaiserlichen Gesundheitsamt. Berlin: J. Springer, 1906.

THIS German book presents a complete history and an account of the geographical distribution of ankylostomiasis and is of importance as representing the results of a special governmental investigation into this subject, which was stimulated by the spread of the disease among the coal miners of Germany. Both the biological and clinical features of the infection are discussed in great detail. In attempting to clear up the etiological factors of this disease, it became apparent that the increase in the number of cases seemed to coincide with the greater amount of moisture which prevailed in the mines as the result of more frequent sprinkling in order to reduce the chances of explosion from coal dust. This precaution could, of course, not be stopped, and so other means had to be devised for checking its spread. It was found that the disease could be most efficaciously combated by making frequent examinations of the stools of the suspected individuals, and also by providing proper sanitary receptacles for the reception of fecal matter, so that the latter could not be distributed through the mines. The latter should also be thoroughly disinfected at frequent intervals. The good results obtained by insisting on these prophylactic measures is shown by the fact that in one district alone the number of cases was reduced in two years by 83.14 per cent.

THE DISEASES OF THE NOSE AND ACCESSORY SINUSES. By H. LAMBERT LACK, M.D., F.R.C.S., Surgeon to the Throat Department of the London Hospital and Lecturer on Diseases of the Throat to its Medical College. London: Longmans, Green & Co., 1906.

THIS volume is an elaboration and further studies along the line of the essay by the author on Pathology, Diagnosis, and Treatment of the Inflammatory Affections of the Nose and its Accessory Sinuses and Air-cells, which was awarded the Jacksonian prize in 1899. By this revision the general ground covered has been brought up to date. The author gives a systematic account of those topics on which there has been no recent controversy and upon which no great divergency of opinion exists at the present time. He does not avoid disputed questions, and though very tolerant of the views of other writers, he does not hesitate to express his personal convictions in definite terms. A useful feature of the book is the addition at the end of each chapter of a short bibliography containing references to the more important recent contributions to the several topics considered. Footnotes to minor articles are plentifully scattered throughout the work. On the whole, we regard the book as containing valuable material, well analyzed and put together in an attractive, readable form. Books on rhinology have followed each other so rapidly in recent years that there has necessarily been much duplication. Specialists are naturally curious to note the attitude taken by each new author on the questions of the day. Two of these may be referred to. Concerning the serum treatment of hay fever, the author declares that at present there is not enough evidence to support the claims made for it. In passing, we would especially commend the temperate tone of the chapters on hay fever and asthma. In regard to the submucous resection of the septum nasi, the author says that while the method has the advantage of simplicity of after-treatment and the avoidance of any retention apparatus, it is difficult to perform and requires much time. He does not consider it applicable to every case of septal deflection. These are put forth, however, only as personal opinions. The book is to be commended from every point of view.

GREEN'S ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Vol. I. Aachen to Brain. Edinburgh and London: William Green & Sons, 1906.

THIS is the first volume of what promises to be a very satisfactory encyclopedia of medical science, occupying the place in Great Britain which is filled in this country by the Reference Handbook of the Medical Sciences. It differs from the latter, however, in the general arrangement and treatment of the subjects and also in the dictionary feature. The titles are arranged alphabetically, and interspersed with the longer articles are many terms which are simply defined in words or by a cross reference to a longer article in which the subject is more fully treated. The dictionary feature is, however, limited to definitions, etiology and pronunciation not being indicated, and accepted differences in spelling and form being ignored. The system of cross references is very complete, not only in connection with the dictionary titles but also in the longer articles. In the latter, also, ready reference is facilitated by a short table of contents, indicating the page on which each separate topic is treated. The work is apparently supplementary or complementary to the Encyclopædia Medica, the publication of which was completed two years ago. In some cases the subjects have received new treatment in the present work, in others the article has been transferred from the older treatise to the new one, supplemented, perhaps, by a new section, marked by brackets.

The editor of the Encyclopædia and Dictionary is Dr. J. W. Ballantyne. In addition to the editorial supervision, he is responsible for the dictionary material, has written most of the smaller articles of thirty lines or less, and has added the new matter, where necessary, to the longer articles transferred from the earlier work. The names of the authors are not appended to the articles, but are given in the table of contents. The list is too long to be given here, but it contains the names of many British authorities in the various departments of medicine. Among the important titles treated in the present volume are: Abdomen, Abortion, Accommodation, Acne, Actinomycosis, Adrenal Glands, Air, Alcohol, Alkaloids, Amputations, Anemia, Anesthesia, Aneurysm, Ankle-joint, Anthropology, Appendix Vermiformis, Arteries, Aseptic Treatment, Balneology, Bladder, Blood, Bone Diseases, and Brain. The illustrations are not numerous, but are apt and well made, several being in the form of colored plates. The writers have done their part well, and under the capable editorial supervision of Dr. Ballantyne have contributed to make a work of superior quality and a valuable addition to medical literature. The encyclopedia will be completed, according to an intimation in the preface, in 1908, and will be followed by a supplement to the Encyclopædia Medica, which will also serve as supplementary matter to the Encyclopedia and Dictionary.

INTRODUCTION TO MATERIA MEDICA AND PHARMACOLOGY, including the elements of Medical Pharmacy, Prescription Writing, Medical Latin, Toxicology, and Methods of Local Treatment, by OLIVER T. OSBORNE, M.A., M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the Yale University; ex-President of the American Therapeutic Society; ex-Chairman of the Section on Pharmacology and Therapeutics of the American Medical Association. Philadelphia and New York: Lea Brothers & Co., 1906.

THE title of this little book gives an exact idea of its contents. Medical students will do well to read this volume before beginning the study of Materia Medica and Therapeutics; by so doing they will lighten their future labors and also obtain information on many little points often omitted in the text-books.

CHRISTIANITY AND SEX PROBLEMS. By HUGH NORTHCOTE, M.A. Philadelphia: F. A. Davis Company, 1906.

THERE has been no dearth of literature on sex problems during the past decade. The present volume is an important contribution to this subject, and will prove of real help to physicians and parents. Its semireligious and philosophical tone are liable to lessen its sphere of usefulness, as by the time a man understands and appreciates this style of literature he is generally of an age when he has settled for himself the problems that this book is intended to solve. There are several valuable chapters in the work, and of the various books on this subject written by laymen this is easily the best.

Society Reports.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

Second Annual Meeting, Held at Washington, May 17 and 18, 1906.

(Special Report to the MEDICAL RECORD.)

(Continued from page 118.)

PATHOLOGICAL AND BACTERIOLOGICAL SECTION.

DR. EDWARD R. BALDWIN OF SARANAC LAKE, CHAIRMAN.

Thursday, May 17.

Tuberculous Meningitis.—Dr. D. J. McCARTHY of Philadelphia read this paper. He said the text-books implied there was but one pathological type—that with the miliary tubercles in the meninges. Dr. McCarthy's studies had shown a number of deviations from the normal type. The first deviation was the so-called tuberculosis *en plaques*, a condition in which foci of a chronic proliferative tuberculous process were scattered over the surface of the meninges with fibrous connective tissue present without any tubercle bacilli in this material. Until recently this was thought to be an incurable disease, but his study of these cases showed distinct evidence of previously healed processes in the meninges. In these cases of tuberculosis involving small areas, the healed meninges never showed the presence of the tubercle bacilli except in one case. He called attention to the fact that in cases of miliary tuberculosis, independent of its existence at the base of the brain, hydrocephalus was a factor independent of obstruction of the lymphatic circulation. Its presence depended upon some disturbance of the circulation between the choroid plexus and the cerebral ventricles. Another type he referred to was the mixed septic tuberculous meningitis. He had seen this type develop in lower animals, the cultures showing streptococci in association with the miliary tuberculosis. Subacute leptomeningitis occurred very frequently, in a large number of the cases going on to autopsy. In seventeen out of seventy-eight autopsies, a granular condition over the base of the brain, with distinct evidences of thickening of the meninges was demonstrated. The microscopical examination showed a proliferative condition of the meninges, with an overgrowth of lymphatic elements, and a recent deposit of fibrin. This type did not ordinarily produce symptoms. Again, there was a localized meningitis of the brain from a blood infection, one case in particular, seen at the Phipp's Institute, being of particular interest; here there was a localized tuberculous meningitis in one hemisphere, this localization being along the distribution of the middle cerebral artery. The temperature, which had been but slightly above 100°, went suddenly to 101°, and then developed the first symptoms, convulsions with headache, the convulsions being limited to one side of the body. There were as many as fifteen to twenty convulsions in a day, beginning in the arm and extending over the half of the body, associated with inequality of the pupils and later a complete hemiplegia. The possibility of uremia, of cerebral hemorrhage, or of localized tuberculous meningitis was thought of. Among his collection there were four cases of localized meningoencephalitis, with localized hemorrhagic softening which differed from that following obstructions in the arteries.

Dr. LAWRENCE W. FLICK of Philadelphia believed that with a fuller knowledge of what tuberculosis did to the nervous system we might be able to know more definitely the part which tuberculosis played in the development of insanity, mania, and other nervous conditions.

Dr. WILLIAM H. WELSH of Baltimore said we should be able to recognize the diversity of symptoms which occurred in tuberculous meningitis. It had been pictured too often in the text-books as a uniform disease, both anatomically and clinically. It had been his experience in most cases of diffuse cerebral meningitis to have the spinal form with it, a true case of cerebrospinal meningitis.

Dr. DUNNING WILSON of Louisville, Ky., called attention to the difficulties encountered in diagnosing a meningeal tuberculosis when there was a caseation or breaking down in the lungs without the presence of the tubercle bacilli.

Dr. ADOLF MEYER of New York reported the experiences at Mt. Sinai Hospital, in which lumbar puncture was practised and positive bacteriological proof of the tubercle bacilli was made in every single instance.

Dr. VETO of Boston asked Dr. Welsh how he explained the not infrequent appearance of cerebral symptoms late in cases of pulmonary tuberculosis. Did he say that meningitis was the predominant affection?

Dr. Welsh in reply said that it was well known that tuberculous meningitis occurred chiefly in children and infants without any manifestation of pulmonary tuberculosis. In most cases one had to look a long while before localizing any tuberculous foci in the lungs.

Dr. LOWMAN of Cleveland said that many cases of meningitis had been shown not to be tuberculous and were probably a pneumococcic infection from some activity in the lungs.

Dr. McCarthy said that the main point of his paper was that in children it was likely to be a miliary meningitis while in adults it was of the mixed type. He referred to the frequent occurrence of insanity among tuberculous patients. Again, when headaches developed they were important in the diagnosis of tuberculous meningitis, but more often they were due to some eye condition. He agreed that lumbar puncture was a very important method of diagnosing tuberculous meningitis, but he did not believe it was a positive method. If the cerebrospinal fluid was withdrawn into a test tube and held quiet, a reticulum would quickly form which would engage the tubercle bacilli if present, as they gravitated to the bottom.

The Liver in Tuberculosis.—Dr. JOSEPHUS ULLOM of Philadelphia said that tuberculosis of the liver was considered a very rare manifestation by many observers. In 37 cases he had found tubercles 30 times (81 per cent.). Of these 30 livers containing tubercles, 9 were the seat of atypical lesions. All the livers were stained for tubercle bacilli, and the bacilli were found in 6 cases (16 per cent.). Jaundice was present twice in the 37 cases. In 6 of these cases there was tenderness over the liver. Enlargement of the liver was noted in 12, and in 3 of these moderate congestion and atypical tubercles were found, two showed moderate congestion and a marked degree of fatty change associated with typical tubercles, two showed moderate congestion with atypical tubercles, one showed a marked degree of amyloid change associated with tubercles. From a consideration of the clinical and pathological findings in these cases and from a perusal of the reports of other observers, it must be concluded that a clinical diagnosis of hepatic tuberculosis was rarely if ever justified. In conclusion he said that: (1) Tuberculosis of the liver was found in a large percentage of those dying of pulmonary tuberculosis; (2) its clinical recognition was only rarely if ever possible; (3) the infection probably took place by the blood-vessels, the bacilli being carried to the liver by the portal vein or the hepatic artery; (4) passive congestion of the liver was found in nearly every case of pulmonary tuberculosis, while amyloid and fatty changes were found in a relatively small number of cases; (5) from a study of the cases above referred to it was not certain that a fibrosis or cirrhosis of the liver due to the tubercle bacillus did occur.

Dr. ALFRED MEYER of New York asked Dr. Ullom if auscultation of the liver had been practised to see if there were any perihepatic signs.

Dr. H. R. M. LANDIS of Philadelphia said he had abandoned any attempt at making a clinical diagnosis of tuberculosis of the liver, deeming it impossible.

Dr. Ullom said his experience coincided with that of Dr. Landis; a diagnosis of tuberculosis of the liver by clinical means could be made only in rare instances. Dr. Meyer's suggestion was a good one and might be of value in these cases.

The Kidneys in Tuberculosis.—Dr. Joseph Walsh of Philadelphia came to the following conclusions in regard to the kidneys in cases of tuberculosis of the lungs: *Pathological:* (1) A comparison of 100 kidneys from cases of tuberculosis of the lungs, with 26 kidneys from a variety of other conditions, showed apparently nothing outside of tubercles that could be said to be specific to the tuberculosis. (2) Every form of nephritis was found in tuberculosis except hemorrhagic and glomerulonephritis; the most common forms were acute and chronic degenerative. (3) Positive tubercles were found in the kidneys in 55 per cent. of the cases. (4) The most common abnormalities found were fibrous and cellular areas under the investment or throughout the cortex. The former occurred in 69 per cent. of the cases of tuberculosis and 50 per cent. of the nontuberculous cases. (5) The microscopic appearances of the kidneys frequently failed to correspond with the microscopic diagnosis. *Clinical:* (1) Inoculation experiments showed tubercle bacilli in the urine in 82.5 per cent. of the cases. (2) Tubercle bacilli were found in the urine on microscopical examination in 90 per cent. of the cases. (3) Sometimes the bacilli found in urine, even in cases showing tubercles in the kidney, did not affect the guinea pigs. (4) Sometimes bacilli were found in the urine of infected guinea pigs without tubercles being found in the kidneys. (5) Edema was found in 35 per cent. of the cases; it was most frequent in association with acute parenchymatous nephritis. (6) Albumin was found by the heat and acetic acid test in 47 per cent. of the cases; it was found most commonly in connection with amyloid degeneration, though it occurred under all pathological conditions, even cloudy swelling. (7) The detection of casts and pus cells apparently depended on the carefulness of the observer, varying in his studies from 18 to 66 per cent. (8) The heart was commonly normal, both clinically and pathologically; when abnormal, no relation was found between the heart and kidney condition. (9) The nephritis accompanying tuberculosis might be surmised but could not be assured; with the possible exception of amyloid, the kind of nephritis could not be even surmised. (10) The most common clinical symptoms of nephritis in tuberculosis, according to his own personal studies, were hyaline and granular casts and tubercle bacilli in the urine. Less frequent symptoms were pain or ache in the lumbar region, albumin in the urine, and edema. Still other symptoms appeared to be unusual fatigue upon slight exertion, unaccountable dyspnea, and a rapid pulse.

Dr. Lawrence F. Flick of Philadelphia said he had long looked upon the kidney complications of tuberculosis as among the most serious that could occur, and among the most difficult to treat. Unfortunately, we did not often see clinically these cases, yet he was inclined to think that sometimes we got indications which should place us on guard, even though we could not establish the diagnosis. There were two of importance, namely, the rapid pulse and great fatigue. The accentuation of the second sound should give us warning. He had found that the coincidence of rapid pulse and accentuated second sound which he could not control, were forerunners of an acute nephritis from which the patients died.

Dr. E. G. Janeway of New York suggested that the lesions be looked for in the seminal vesicles, the testicle, the bladder, or elsewhere in the genitourinary tract, when the tubercle bacilli were found in the urine without any evidences of tuberculous disease of the kidney.

Dr. Alfred Meyer of New York asked how Dr. Walsh eliminated that disturbing element in the bacteriological examination for the tubercle bacillus, the smegma bacillus.

Dr. Walsh said that Dr. Janeway's point was well taken. In answer to Dr. Meyer's question, he described the method employed by Dr. Flick and himself to distinguish the tubercle bacillus from the smegma bacillus.

Bacteriological Findings in Cases of Tuberculosis Examined at Autopsy.—Drs. J. W. Irwin and M. P. Ravenel of Philadelphia presented this communication. Seventy-five autopsies were made in a routine way and the study upon these were simple, part and parcel of a study of mixed infection in tuberculosis that they were then engaged in. They referred to the experiments of Dr. Prudden showing that rabbits inoculated with the tubercle bacillus never had formed cavities unless they were subsequently inoculated with the streptococcus. They quoted the saying that "the worst thing that could happen to a tuberculous man was to come in contact with a consumptive." Ordinary bacteriological methods were used in their investigations. Of the 75 cases examined only one proved to be sterile throughout. In another case all the cultures were sterile except the one from the liver. In three cases all were sterile except that from the spleen. In one case they obtained streptococci from every organ. In another case they got a culture from every one taken and in pure form from the kidney, liver, and spleen. The streptococcus was found in diploform in 53 out of the 75 cases; the *Staphylococcus pyogenes albus,* 34 times; *Staphylococcus pyogenes aureus,* 33; the pneumococcus, 17; *Bacillus pyocyaneus,* 4; *Bacillus coli communis,* 51; *Bacillus lactis aërogenes,* 3; pseudodiphtheria, 12; sarcinæ, 13; yeast, 15; spirillum, nature undetermined, 1; small diplococcus, 2; unverified bacilli, 5 times; aspergillus, 1; typhoid bacillus in the kidney, 1.

Dr. George Mannheimmer of New York asked Dr. Ravenel if the influenza bacillus was found.

Dr. Ravenel replied that after the most careful examinations the influenza bacilli were not found. The paper, however, referred only to post-mortem findings.

Clinical and Pathological Comparisons of Cavities.—Dr. H. R. M. Landis of Philadelphia read this paper.

Dr. William H. Welsh of Baltimore, Dr. Alfred Meyer of New York, Dr. Miller of New York, Dr. John H. Pryor of Buffalo, Dr. Abbe of Washington discussed the paper.

Tuberculosis of the Placenta.—Dr. Alfred Scott Warthin of Ann Arbor said that only twenty cases of placental tuberculosis had been described so far in the literature, one observer alone reporting half of these, and Dr. Warthin three. Placental tuberculosis he thought to be more common than generally supposed, and it was a fact that tuberculosis could be transmitted through the placenta. The first case he reported was one of ectopic gestation with tuberculosis of the tubes, fetus, and chorionic villi. The second case was met with by him during a study of a series of fifty autopsies while abroad. The third case showed a tuberculosis of the kidney in the mother with acute miliary tuberculosis at about the fourth or fifth month of pregnancy. Abortion took place and the fetus was discharged. Unmistakable evidences of transmission were offered. The placental tissue he believed to be less resistant to tubercle bacilli than formerly supposed.

Dr. William H. Welsh of Baltimore said this, the subject under consideration, was of fundamental importance in the conception of the etiology of tuberculosis. The evidence which was cumulative since the time of Baumgarten's first statement of his views as to the congenital origin of tuberculosis had been along a road every step of which was ridiculed by pathologists. The evidence of the placental transmission of tuberculosis was becoming stronger and stronger. Dr. Welsh was particularly interested in Dr. Warthin's study of the histological details, and in one class he was reminded of the experimental tuberculosis produced in the lungs by injecting a large number of tubercle bacilli directly into the circulation.

He had never been satisfied with Baumgarten's position, that tubercle bacilli caused primarily a growth of cells, contrary to fundamental ideas. He had been anxious to bring evidence that the tubercle bacilli primarily damaged the parts and the proliferation of cells was secondary to that. He thought that certain of the cases Dr. Warthin described as tuberculous should be put to experimental test. He thought tubercle bacilli could be conveyed from the mother to the fetus *in utero*, and more frequently than it had been customary to believe, and he did not think that it was necessary to have any definite and special lesions in the placenta to permit this. The entrance of the bacilli into the fetal circulation might occur so late in fetal life that tuberculosis did not have time to develop. Experimental data seemed to indicate that the fetus was relatively insusceptible. There was support for both of these views. He thought there was considerable evidence that the fetus could have tubercle bacilli without producing tuberculosis, and that they were present in the blood-vessels at the time of birth, and that after birth they might produce lesions. This was an important line for investigation, and further careful study of the placenta in cases of tuberculosis should be encouraged.

Dr. Lawrence F. Flick of Philadelphia said that clinically it was a remarkable fact that children born of tuberculous mothers often did show a strong immunity to tuberculosis at least for months after birth. He had watched the children of tuberculous mothers for years, and many of them were as healthy children as he had ever seen. He asked if it was possible that intrauterine exposure to the tubercle bacilli might not confer immunity upon such children.

Dr. Welsh said that he had had no experience with the matter, but it would be gratifying to believe that children could be vaccinated *in utero*. Here we found living tubercle bacilli more resistant than in adults or individuals after birth, and the conditions would seem to be favorable for the possible production of an active immunity. He hesitated to make any definite statement without fuller knowledge than he possessed at present.

Dr. Laphan of Highlands, N. C., said that the children of tuberculous mothers certainly seemed to possess an immunity, and it was a question how long the immunity lasted. Children of tuberculous mothers very often lived up to a certain age and then under any extra strain they went down very rapidly. He thought that it was generally admitted that tuberculous children developed tuberculosis in a large percentage of cases as they approached the twentieth year.

Dr. Flick said that he had the histories of a number of children of tuberculous mothers in which the mother died within one year after the birth of the child; these children had grown to be unusually well-developed men. He had not had enough such cases to draw conclusions, but he had made enough observations to raise the question of immunity in this regard.

Dr. Edward L. Trudeau of Saranac Lake said that the difficulty with which the tubercle bacilli passed from mother to fetus was more apparent than real; the bacilli might be dormant for days, months, and even years. He had noted in vaccinating cows with no lesions whatever that at the end of one, two, or seven months the bone marrow was affected, but no tubercle bacilli could be found.

Dr. Herbert Maxon King of Liberty, N. Y., said that in 1901 he had read a paper on this subject at the Congress on Tuberculosis in London. It was merely a study of one hundred cases of tuberculosis occurring in children of tuberculous parents. Unfortunately, he had not distinguished between the fathers and the mothers. He had found that the length of life in one hundred cases of children of tuberculous parents after supposed contraction of the disease was 25 per cent. longer than in one hundred cases of children of nontuberculous parents. This matter had not been sufficiently studied to admit of definite conclusions.

Dr. Lowman of Cleveland said that he had made some observations in Cleveland since last November on tuberculous children. He had 350 children of tuberculous families come to the clinic, and 10 per cent. were found to have tuberculosis, 10 per cent. more were strongly suspicious. If the children in families where there was tuberculosis were examined with greater care it would be found that there was not so much immunity as suggested. These children, as a rule, looked well and were larger than other children of the same age, yet they had well-marked areas of infection. He seriously doubted if there was such immunity conferred as had been suggested.

Dr. Flick said that the statistics confirmed what he had said, namely, that they were so immune that they would not give evidence of the disease, and that they had more resisting power than children born of nontuberculous parents. It remained to be seen whether these children could throw off all evidences of the disease and grow to be strong and healthy men and women.

Dr. Warthin, in reply to Dr. Welsh, said that there was no better demonstration of the primary effects of the tubercle bacilli in the way of necrosis than was found in the placenta.

Common Errors in the Technique of Examining Sputum for Tubercle Bacilli.—Dr. Charles L. Minor of Asheville read this paper.

Dr. Wm. Kraus of Memphis discussed it.

Concerning Bacillus X.—Dr. S. J. Maher of New Haven read this paper, and in conclusion called attention to these easily demonstrable facts: (1) Normal X or *Bacillus mycoides* III, an organism that was obtainable often in pure culture from vaccine, from green grass, from the needles of the pine and the leaves of the balsam firs and hemlocks in the depths of the forests, this bacillus that in its ordinary form might be, with impunity, injected alive into man or brute could, by subjecting it for prolonged periods to the inhibiting effect of its own secretions, and to the nuclear or spore stimulation of weak salt solution, be forced to take on new forms and properties, and these new forms, by careful cultivation, could be made to persist. (2) In one of these new forms this organism became largely acid-fast, could cause the production of caseating masses in injected rabbits. (3) From these caseous nodes, in which were to be found on smears either no bacteria or only acid-fast rods or cocci, might be grown the mixture of acid-fast and non-acid-fast rods and cocci that were injected into the animal weeks before. (4) Cultures in sugar bouillon and physiological salt solution of this partly acid-fast and partly non-acid-fast organism would, on injection into other rabbits, cause the development of caseous nodes in the second series of animals.

Dr. George M. Sternberg, Ex-Surgeon General, U. S. A., thought that these results would have to be controlled before they were accepted by bacteriologists to-day.

Dr. Oertel of Augusta, Ga., reported seventy-three cases in which he had used cultures of the *Bacillus X*, sixty-three of them being crazy negroes in the State institution, and in all stages of tuberculosis except the first. He had nine apparent cures and three were well to-day. One of the institution patients, a glandular case with discharging sinuses, who was an epileptic and a fool, after four injections about three weeks apart in the neighborhood of the enlarged glands, was apparently well to-day, all enlargement of the glands having disappeared.

Serum Diagnosis of Tuberculosis.—Drs. Hugh M. Kinghorn and David C. Twichell, M.D., of Saranac Lake read this paper. The work was done in the Saranac Laboratory under the direction of Dr. E. L. Trudeau. The method used was that of Arloing and Courmont, and the A. homogeneous culture of these French investigators was employed. All the tests were made according to the directions of Paul Courmont. The culture was grown in

a bouillon consisting of peptone, 20 parts; sodium chloride, 10; glycerin, 40; water, 1,000. This was neutralized with normal soda solution. This was Courmont's formula.

Clean, fresh serum was used for the tests. When agglutination took place at 1 to 5 the reaction was considered positive. The tests were made at room temperature, and the time limit given to them was five hours—not more. Agglutination was observed by the naked eye. Results were considered positive only in those tubes which showed well-marked flocculi easily visible to the naked eye, with subsequent sedimentation and clearing. The total number of cases tested was 247. Of these 70 were persons in apparently good health, 155 were patients with pulmonary tuberculosis, 22 were patients with doubtful tuberculosis or with other diseases. Of the 70 healthy persons, 59 reacted, 84.28 per cent.; 11 failed to react, 15.72 per cent. Of the 155 patients with pulmonary tuberculosis 135 reacted, 87.09 per cent. 20 failed to react, 12.91 per cent. Of the 22 patients with suspicious signs of tuberculosis and with other diseases, 18 reacted, 4 failed to react. The 70 healthy persons whose serums were tested were in apparently sound health. Most of them belonged to the better classes of society. Some of them had been exposed to patients who were suffering with pulmonary tuberculosis. The average strength of agglutination in these cases was 1 to 13.67. The 155 patients with pulmonary tuberculosis differed widely as regards the extent and gravity of their disease. They included latent or healed cases, tuberculin test cases, incipient, advanced, and far-advanced cases. Of 17 cases which reacted to the tuberculin test all reacted to the serum test. Of 38 incipient cases 36 reacted, 94.73 per cent.; 2 failed, 5.27 per cent. Of 95 advanced and far-advanced cases 78 reacted, 82.10 per cent.; 17 failed, 17.90 per cent. Of 5 latent or healed cases, 4 reacted, 1 failed to react. In comparing their work with that of Paul Courmont it was to be noted that the tests were all made according to Courmont's directions, and his A. homogeneous culture was used throughout. In clinical cases of tuberculosis Courmont obtained 87.9 per cent. of positive, 12.1 per cent. of negative reactions; Kinghorn and Twichell obtained 87.09 per cent. of positive, 12.91 per cent. of negative reactions. In persons in good health Courmont obtained 26.8 per cent. of positive, 73.2 per cent. of negative reactions; Kinghorn and Twichell obtained 84.28 per cent. of positive, 15.72 per cent. of negative reactions.

It was the opinion of the author of the paper that there was little, if any, difference between the agglutinating power of healthy and tuberculous serums, namely, 84.28 per cent. for healthy and 87.09 per cent. for tuberculous serums. The average agglutination was also practically the same, namely, 14.82 for tuberculous, 13.67 for healthy persons. From their investigations Drs. Kinghorn and Twichell concluded that the serum diagnosis of tuberculosis as used by Arloing and Courmont was not a specific sign of the presence of clinical tuberculosis, since healthy and tuberculous serums had practically the same agglutinating property. They concluded that the serum diagnosis of tuberculosis, especially for the early diagnosis of tuberculosis, was of no value.

Dr. Karl von Ruck of Asheville said that all the cases in his institution had been carefully examined during the past year, and while no results had been gained, he had found a large percentage that failed to react to the agglutination test, although there were distinct evidences of tubercle bacilli in the sputum.

Dr. S. A. Knopf of New York said that Drs. Park and Lambert had tried the agglutination test at Bellevue Hospital and came to the conclusion that it was practically valueless in tuberculosis.

Dr. William H. Park of New York stated that those tests were roughly made, and their results should be substantiated by more careful work.

Technique of the Tuberculo-Opsonic Test.—Drs. Kinghorn and Twichell also presented this paper. They were at present engaged investigating the work of A. E. Wright of London, England, especially in connection with tuberculosis. According to Professor Wright, the phagocytic effect obtained when bacteria were introduced into the blood was dependent upon an action exerted by the blood fluids directly upon the microorganisms. He spoke of this action, which prepared the microorganisms for phagocytosis, as an opsonic action (Latin—*opsono*, I cook, I prepare pabulum for). It was due to the presence in the blood fluids of substances which modified tubercle bacilli in a manner which rendered them an easy prey for the phagocytes. The following observations had been made by Professor Wright and Captain S. R. Douglas: (1) Opsonins are contained in the blood fluids—serum or plasma. (2) They lose their power when heated to from 60° to 65° C. for ten to fifteen minutes. (3) They exercise their influence by effecting a modification in the bacilli, and not by exerting a direct stimulating effect upon the phagocytes. The object of the present paper was to discuss the technique of the method used in estimating the opsonic power in the blood of tuberculous patients, and also of those undergoing tuberculin treatment. The method employed by Professor Wright was as follows: Equal quantities of the patient's serum, an emulsion of tubercle bacilli, and white blood corpuscles (washed in ½ per cent. sodium citrate in physiological salt solution) were mixed in a capillary pipette and incubated at 37° C. for twenty minutes, after which blood films were made of the mixture and stained for tubercle bacilli. The average number of tubercle bacilli ingested by each polymorphonuclear white corpuscle was calculated, and the figure thus obtained was called the phagocytic index. The opsonic index was the result obtained by dividing the number of bacteria taken up per leucocyte in the presence of any given serum by the number taken up per leucocyte in the presence of the serum of a normal individual, which latter was regarded as unity. For example, the number of tubercle bacilli per leucocyte in the presence of a given serum equals 3; tubercle bacilli per leucocyte in the presence of a healthy serum equals 2; then 2:3::1: opsonic index = 1.5. The difficulties which Drs. Kinghorn and Twichell experienced in making the tests were considerable, and they gave in detail the various steps as to their methods of obtaining the washed leucocytes; the emulsions of tubercle bacilli for phagocytosis; the serums for the tests; the method of mixing and incubating the washed leucocytes, the serum, and the emulsion of tubercle bacilli; the method of preparing slides, and the method of hardening and staining the slides. They emphasized the fact that they considered it necessary to count from one hundred to two hundred polymorphonuclear cells in order to make an accurate estimate.

They intended to give at a later date the result of their work with the opsonic test on patients undergoing tuberculin treatment. This investigation was being carried out in the Saranac Laboratory under the direction of Dr. E. L. Trudeau.

Dr. Nathaniel Bowditch Potter of New York and Dr. E. R. Baldwin of Saranac Lake discussed this paper.

Studies on Immunity in Tuberculosis: Experiments with Lymph Glands and Bone-Marrow Extracts of Immunized Animals.—Drs. E. R. Baldwin and J. Woods Price of Saranac Lake presented this communication. The paper consisted of a report of experiments still in progress with the tissues of immunized calves used for the protection of guinea pigs against experimental tuberculosis. The leucocytes were obtained from the uncoagulated blood of an immunized cow, which was removed at different times during or following a tuberculin reaction. The lymph nodes and bone marrow were also taken from a calf killed at the height of a tuberculin reaction. Thus far no evidence of any protective influence had been obtained which was transferable to guinea pigs.

(*To be continued.*)

AMERICAN MEDICAL ASSOCIATION.

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(Special Report to the MEDICAL RECORD.)

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SECTION ON DISEASES OF CHILDREN.

Third Day—Thursday, June 7.

Acute Nonsuppurative Encephalitis in Children.—Dr. ISAAC A. ABT of Chicago presented this paper, saying that attention was first called to this class of cases by Strümpell in 1884. This publication had aroused much interest, and subsequent investigations seemed to show that Strümpell was not entirely correct in his assumption that cerebral palsy in children was due to a single process. During the last few years, however, the many contributions made to the subject had left no doubt that Strümpell's position was essentially correct that acute encephalitis was responsible for a proportion of the cases of hemiplegia in young life. The author, from a large number of histories of the disease, was impressed with the fact that there were several clinical types of the disease. Two cases recently under his observation constituted the subject of the clinical report. The eitology of acute nonsuppurative encephalitis, Dr. Abt said, might be briefly summed up in the words, infection and intoxication. Acute alcoholism possibly played a rôle in adults and older children. In one of Wernicke's cases poisoning with sulphuric acid was suspected. In other cases nicotine had been thought of as a factor. The infective source, however, was considered the most frequent of all in the encephalitis of children. Any portion of the brain might be affected, though the cortex or encephalitis superior (Strümpell's variety), the basal ganglia and the region of the medulla, or encephalitis inferior (Wernicke's variety) were selected areas. The symptomatology was considered at some length. The terminations of the cases were summarized as follows: A small proportion of the patients do not survive. If the encephalitis occurs during acute infectious disease death may result from cerebral conditions or from the original disease. Some cases improve within a few days. There is always a liability to hemiparesis of the side of the body or to epilepsy. The majority of cases with initial flaccidity give rise later to the spastic type of hemiplegia. The diagnosis during the acute stages was nearly always difficult; there was suggested an acute infectious disease on the one hand or a meningitis on the other. The disease might be confused with a tuberculous meningitis. Spinal puncture in these cases was of little assistance.

Dr. H. LOWENBURG of Philadelphia had seen a case of complete hemiplegia in a child in which convulsions occurred on the second day during an eruption of measles and lasting for 48 hours. After the convulsions the child had complete hemiplegia of the left side. The case had been looked upon as a hemorrhage into the cortex above the decussation of the seventh nerve. He inquired whether in Dr. Abt's cases the reactions of degeneration were taken.

Types of Congenital Symbol Amblyopia.—Dr. J. HERBERT CLAIBORNE of New York City in this paper said that W. Pringle Morgan of England was the first to point out the fact that in addition to the word-blindness which is the result of acquired cerebral lesion, there is a word-blindness congenital in nature which he has suggested as due to defective development of the word memory centers of the cerebral cortex. Dr. Claiborne reviewed the literature on this subject and said that this literature in America was confined to the papers of Dr. A. Chapringer of New York and himself, which were read before the New York Academy of Medicine, February 19, 1906. Dr. Claiborne detailed the history of two cases of so-called congenital word-blindness in two boys of ten and nine years respectively. He thought word-blindness was an incorrect expression for these cases, and suggested "word amblyopia" instead, since blindness did not exist, but rather imperfect vision, inasmuch as both boys were able to recognize and read a few words constantly practised. When such patients were right-handed Dr. Claiborne pointed out the great probability of the lesion being on the left side of the brain and in the neighborhood of the angular gyrus. Reference was also made to imperfect word-deafness, and he suggested the expression "word-amblykusis" as descriptive. Dr. Claiborne also referred to the fact that many people were unable to learn mathematics, and he suggested the thought that this deficiency was parallel with word-amblyopia and word-amblykusis. He pointed out that many persons who could not reason in symbolic mathematics were quite capable of solving the same problems when they were reduced to words or involved material things. He drew the simile of the theoretical man and the practical man, and suggested the term "figure-amblyopia" for this form of mental defect. He also referred to the imperfect musical appreciation of some persons, and classed this under two heads: the written symbol musical defect and the auditory symbol defect. For the imperfect musical sense he suggested the term "amblymusia" as opposed to amusia. He referred to the fact that at present no post-mortem corroboration of these assumed congenital lesions was on record. When these various defects were met in schools Dr. Claiborne said they should be carefully differentiated and properly grouped, and the children should be instructed. The basis of the instruction should be repetition coupled with patience. He thought it reasonable to teach such children to become left-handed, in order that the speech, symbol and sound centers on the right side of the brain might be cultivated to the exclusion of those on the left, or as supplementary to them.

Accurate Modification of Milk, Simple and Practicable.—Dr. DANIEL R. BROWN of Salem, Mass., demonstrated the mathematical principles on which the calculation of percentage mixtures depends. Working formulas were given, and the simplicity was shown of the percentage modifications, both for the preparation and for the use of modified milk under the immediate direction of the physician.

Simplicity in Infant Feeding.—Dr. CHARLES W. TOWNSEND of Boston said that the average physician was generally so discouraged by the mathematics of present-day papers on infant feeding that he formed an exaggerated idea of the difficulties or rejected all theories in disgust and resorted to the printed directions of advertising food manufacturers. Too great manipulation of the milk, he asserted, interfered with its physical and vital characteristics. On that account he felt that the use of centrifugal cream, of fat-free milk, and the employment of Pasteurization or sterilization were all undesirable. Gravity cream he considered should be the basis of all modifications, and this could be obtained by the simple method of pouring off the top milk from the milk bottle. The richness of the top milk, he suggested, could be varied by pouring off more or less as required. Instead of using water as a diluent he suggested the advantage of cereal water, which could be used even in the youngest infant. In beginning to feed an infant whether newborn or an older one that had suffered from improper feeding, the safest rule, in his opinion, was to begin with a mixture weak in all its ingredients, and by slow degrees gradually to increase the strength.

Certified Milk in Small Cities.—Dr. C. W. M. BROWN of Elmira presented this paper, saying that in spite of the increase of knowledge concerning the production and care of milk the fact remained that ordinary milk, while of almost universal use, was the most uncleanly article of food on the table. That commercially Pasteurized milk might be more unsafe than ordinary milk he said was abundantly proven by the investigations of Pennington and McClintock of Philadelphia. Although anticipating that hospitals would be furnished with good milk, yet Edsall found many

of them in Philadelphia served with milk of "shocking quality," some of it containing millions of bacteria to the cubic centimeter. Mention was made of the first Medical Milk Commission, that of Essex County, N. J., formed and pushed to success by Dr. Henry L. Coit of Newark. This Commission had issued its first certificate in 1893. Since that time thirteen other Commissions had been started; all, however, with the exception of the Commission of the Elmira Academy of Medicine, were in the cities of the first and second class. Because of the successful accomplishment of the work of this Commission in a small city and at the suggestion of an ex-president of the section the account of the work was given with the hope that others of the smaller cities might be similarly stimulated. The efforts of the Milk Commission of the Elmira Academy of Medicine resulted in finding a woman who was willing to take up the work and who already had a general knowledge of the benefits of clean milk and the requirements to produce it. She built a new barn, had her herd tested for tuberculosis, the Commission selected its experts, and the first certificate was issued April 15, 1903. A standard of a 10,000 bacterial count was established and the other usual conditions imposed. The milk was cooled and bottled within a few minutes after it was drawn, put in the crate, the top of which was filled with cracked ice, and the night and morning milk was delivered to the consumer not more than 19 hours from the time the oldest of it was drawn the night before. This had been accomplished by simply using the means at hand, and what had been done in Elmira it was thought by the author could be done inside the next twelve months in a score of the other cities of the size of Elmira which were now not supplied with clean milk. He pointed out two great hindrances to successful progress of right infant feeding in cities: (1) The difficulty of securing fresh, clean milk, resulting in an increased sale of artificial foods; (2) the lack of knowledge among physicians of the proper modification or adaptation of cow's milk to the infant. The responsibility for the first he placed upon the physicians in each town; that for the second, upon the teachers of pediatrics in medical colleges and postgraduate schools.

Why Percentage Feeding Fails; a Plea for Its More Frequent Adoption by the General Practitioner.—Dr. H. Lowenburg of Philadelphia presented this paper, in which he said that pediatrists were agreed that percentage feeding was the best way to rear children artificially, however they might differ as to methods. He showed that causes of failure lay in the bewildering multiplicity of methods of modification and in the fact that proposed methods were not intelligently applied. Written formulæ need not represent the actual percentages. Physicians and parents he thought expected gain in weight too soon. The physical and biological differences between cow's milk and human milk were not sufficiently recognized; neither did physicians recognize the variety of indigestions, nor think in percentages. Mothers and nurses should be educated in pediatric hygiene, and in this there was a lack of professional supervision. Physicians and mothers, he stated, were deluded by patent foods.

Pleuritic Exudate in Children.—Dr. Melinda K. Germann of Quincy, Ill., in this paper stated that pleuritic exudate, either serous or purulent, was common in infancy and childhood, more particularly in the latter. By bacteriological examinations the pleuritic exudates were divided into three large groups; the first caused by the tubercle bacillus; the second by the pneumococcus; the third by the streptococcus. The physical signs of fluid in the pleural cavity in children differed somewhat from those in the adult. With failure of expectant treatment to favor resorption of the exudate, aspiration was advised. In the differentiation of empyema from acute unresolved pneumonia, serofibrinous exudates, chronic adhesive pleurisy, and atelectasis, aspiration alone would aid. In treatment, thoracotomy, with or without resection of portions of one or more ribs, was preferred to aspiration.

Tetanus Neonatorum.—Drs. J. M. Anders and A. C. Morgan, of Philadelphia, presented this paper, showing their studies of 1,276 cases collected from the literature from 1850 to 1905, and of 31 original cases reported by themselves, a total of 1,307 cases. The study was limited to the occurrence of the disease in the newborn babe, with infection through the umbilicus. All observers were a unit in declaring that the most prolific cause of the occurrence and mortality of the disease was unclean midwifery. Suggestions as to prophylaxis were submitted as follows: The education of persons directly or indirectly concerned with the care of confinement cases should be insisted upon, especially as to the necessity for rigid, aseptic, hygienic care of the umbilical stump and its treatment along the same strict lines as any other surgical wound. To this end a law in every State, requiring registration of midwives, should be enacted. Medical colleges should teach this phase of the matter with greater earnestness than is now being done. Likewise, the subject of the tetanus bacillus should be fully presented. State Boards of Health should issue circulars of information for the guidance and direction of midwives and others who attend these cases. Philanthropic societies and institutions should also take up the question and cause a widespread knowledge of the simple measures necessary for the prevention of this disease.

The Rheumatism of Childhood.—Dr. J. Ross Snyder of Birmingham, Ala., said the tendency was to multiply the number of diseased conditions having relationship with rheumatism. In connection with the rheumatism of adults confusion was being cleared away by satisfactory classifications of acute and chronic joint affections. Child types, however, had been left out of consideration. Clinical evidence, he said, now pointed to its infectious origin. The idea of endocarditis must not be too closely associated with rheumatism, and much could be said against the close association of chorea with rheumatism. The author asserted that unless it was believed that rheumatism was no more or less than a general streptococcus infection, many cases of arthritis and endocarditis following tonsillitis were no more rheumatic in nature than the cases of acute pyemic arthritis of infants. The author suggested that erythema nodosum might also be proven to be a streptococcus infection, the portal of entry being the tonsils. The opinion was expressed in conclusion that one by one many of the so-called manifestations of rheumatism would be taken from the list of symptoms of that disease until rheumatism would mean something or nothing.

The Clinical Aspects of Rheumatic Fever in Childhood, and their Significance in the Question of Specific Etiology.—Dr. Charles Hunter Dunn of Boston said there was a lack of definite knowledge of the etiology of the disease termed rheumatic fever. Among those believing that rheumatic fever was an infectious process, two views were held as to its etiology: (1) The bacteriological view that the disease is a specific infection, due to a specific microorganism. (2) The clinical view that the disease is not due to a specific infection, but that it is a particular reaction of the body to a variety of organisms. The author believed that those who regard rheumatic fever as a specific reaction of the tissues to a variety of infections might prove to be right, but that at present further evidence was needed in support of their position. On the other hand, until there was some method of recognizing the *Micrococcus rheumaticus* as a specific entity other than by the results of animal inoculation, it could not be accepted as the absolutely proven cause of the disease. He thought it could, however, for the present be granted the position of a probable specific cause. The author considered the definiteness of the clinical picture alone a sufficient justification for regarding rheumatic fever as a definite entity, and most probably a specific infection to be placed in the same category as scarlet fever and measles. Whether the specific cause had been discovered was another matter.

(*To be continued.*)

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Regular Meeting, Held May 15, 1906.

DR. WILLIAM F. CAMPBELL IN THE CHAIR.

Recent Experimental Work Bearing on the Etiology of Cancer.—Dr. HARVEY R. GAYLORD, Director of the New York State Cancer Research Laboratory, Buffalo, N. Y., read this paper. He said that five years ago he had addressed the Kings County Society on this subject, and that the intervening time had been fruitful years of research. The parasitic theory of cancer had not lost in prestige, and he believed that the next five years would behold a complete solution of the cancer problem. The recent acquisition of knowledge on this subject had been due to newer experimental methods. On the former occasion he had spoken of the inclusions of the cancer cells, similar to the inclusions in smallpox. At that time there had not been nearly as much evidence as now of the infective nature of cancer, nor had it been necessary to assume that cancer is an infectious process. The speaker had also pointed out a relation between cancer and the acute exanthemata. In this short time a change had taken place. The observation of a possible infective nature of cancer had dated back for many years. As far back as 1875 Novinsky had transplanted a round-celled sarcoma into dogs, one or two of which recovered spontaneously. In 1883 Wehr had transplanted a similar tumor. Following him, Hanah had transplanted epitheliomas in rats. Ten years ago Moreau had transplanted for over two years portions of a carcinoma from mouse to mouse. He had been the first one to show that heredity has very little to do with susceptibility. Leo Loeb in this country had been a pioneer in this work. He worked in Buffalo in 1903, before Jensen's time. Besides the latter were mentioned Bashford of London, and Morel in France. Ehrlich discovered 164 white mice with tumors. Loeb had reported one case of spontaneous cure. The speaker himself had seen eight such cases. Nearly 62 mouse tumors had been known to the authorities of the Pasteur Institute. In order to collect as many mouse tumors as possible, the Buffalo Laboratory had offered a reward for each case of mouse tumor that a dealer might bring in. If a dealer would bring in one he would soon bring in another. One dealer in Springfield had brought in three. These facts indicated the endemic occurrence of sarcoma in the various breeding cages of the dealers. Borel had an interesting experience in Paris: A woman had bred mice in one cage, and twenty of them developed cancer of the breast. In another cage five similar cases developed. Of 180 mice that developed tumors, all had been elderly females with one exception. All the cases that Gaylord had had and all those of Bashford had occurred in females. His explanation of this peculiar occurrence was that the females had been caged for breeding purposes, that several of them had been nursing young, and that the promiscuous suckling of the latter had caused the spread of the cancerous infection. The communicability of cancer was a vital question, concerning which health boards, citizens, and family physicians especially could not fail to be profoundly interested. Five out of twelve of Borel's mice had developed the tumors. In 1901 Dr. Leo Loeb received a rat with sarcoma of the thyroid, which he succeeded in transplanting. In 1902 a second rat appeared in the same cage with an identical tumor. In 1903 a third rat appeared in the same cage with a similar tumor. All three cases had been the offspring of a group of rats that had been brought into the cages for breeding purposes. These cases had been published as a proof of the theory of the endemicity of cancer, but this assertion had to be qualified by the statement that possibly heredity had been the factor at work. In the spring of 1904 a group of rats had been used in experiments on trypanosomiasis. In the summer of that year, of four of the rats left over, one had been found with a large fibrosarcoma of the subcutaneous tissue of the breast, and of a slowly growing nature. Into that cage had been afterwards introduced eight normal rats taken from outside. In 1905 four of these had died, and two of these had been found with a large fibrosarcomata of the breast, in one, and a typical sarcoma of the thyroid in the other. These facts indicated strongly the infective nature of cancer, the infection having lingered in the cage. The existence of the so-called cancer-houses was in perfect agreement with these observations. The mice that had been experimented upon had been carefully controlled; they had been carefully tended and fed on the same food. One objection to the argument of the infective nature of cancer as derived from the observation of cancer-houses, had been that in most instances the secondary cases of cancer appeared many years after the primary ones. But the observations on the rat showed that the intervals between the appearance in the same cage of rats with tumors amounted in most instances to one-third of the lifetime of the rat. Moreover, the experience in some diseases, such as syphilis, indicated that active symptoms, as the tertiary ones in the latter disease, appeared sometimes as late as fifty and sixty years after the primary infection. Thus the interval of freedom from infectivity in a house or a cage was no criterion upon which to base an argument.

The speaker next discussed the subject from the experimental and histological standpoint. He said that the conditions which governed the transplantation of tumors, were not conditions which governed the primary formation of these growths. Most of the mice showing the latter had been old females. Some mice could never be inoculated. Besides, the proportion of mice that could be inoculated depended upon the nature and source of the tumor. The Jensen tumor gave 40 per cent. of inoculations. A tumor derived from a Brooklyn mouse gave 5 per cent. of inoculations at first, then hovered between 5 and 10 per cent. for three or four generations, and the inoculability increased rapidly, until two months ago the tumor produced 100 per cent. of successful inoculations. Moreover, the intensity of growth of the inoculated tumors had increased apace until in the latest tumors the growth was so rapid as to produce in eight days a mass the size of the rat itself. One marveled at the immense reproductive power of these tumors. In one year a tumor produced sixty generations of transplantations. Ehrlich had estimated that a tumor could produce in one year an amount of cancerous material equal to ten grams raised to the sixtieth power, which was equivalent to a cube whose sides were 1,000,000,000 kilometers long. As regards pathological investigation of tumors, it did not bring one anywhere except to a blind wall. What had been shown by the continued transplantation of a growth? The cancer began with a single cell. Something happened to this cell, changing it into one which no longer proliferated normally. It acquired this one undoubted factor of all new growths, namely, that of unlimited proliferation, the cells being unaffected by senility. It must have been affected by a stimulus that normal cells did not possess. The single cell might in the course of one year become billions of cells, each with an activity many times greater than that of the original cell. The speaker asked what kind of agent could thus, when many times diluted, become more and more virulent? It could not be a chemical agent, for this could not reproduce itself. It could not be a toxic agent, for this would be counteracted and thus reduced by antitoxic substances produced in opposition to it. The stimulus had to be a living one. The power of reproduction was the dividing line between the living and the purely chemical. The stimulating agent had to be definite; how definite was the next question to decide. It had been conceded that at the margin of beginning epitheliomas, the epithelial cell became the cancer cell. Prof. Orth had actually demonstrated this. It had been discovered within the last two years that 22 per cent. of the mice with the Jensen tumor recovered spontaneously.

Spontaneous cures had occurred in the case of large and small tumors. Eighty per cent. of the cures occurred in the earliest cases and the prospect of cure diminished as the age of the growth increased. The prospect of cure was thus inversely proportional to the size and age of the tumor. The mice that had recovered could not be reinoculated. This was a fundamental fact, essential for the possible serum cure of cancer. When a histological study of the retrogressing tumors was made there was found no necrosis of cells; the atrophy was merely secondary. Karyokinetic figures had been found until the last. There had been no necrosis, and no cytolysis. The Jensen tumor could be made to retrograde with the *x*-ray. It was important to determine how the *x*-ray worked. A wart could be removed by means of the *x*-ray without necrosis or inflammation of the skin. The upper layer of the wart was desquamated, but the cells of the deeper layer resumed their normal function and proliferated to form new skin. The same process occurred in the treatment of epitheliomas in the mouse by means of the *x*-ray. One saw at the margin of retrogressing tumors the same picture, whether the tumor had been acted upon by serum or by the *x*-rays, and the picture was seen as in the case of the retrogression of misplaced epithelium. It was evident that in all these cases the same agent had acted in the same way. The action began at the margin and proceeded inward. Dr. Clews of Buffalo had shown that the blood of an immune mouse could rob the cancer epithelium of its power of proliferation. This research had a definite significance in its bearing on the problem of the serum-therapy of cancer. Last year, Ehrlich had succeeded three times, by means of transplantation experiments, in transforming mouse carcinomas into sarcomas. Ehrlich had also found that an immunity in the mouse produced against carcinoma acted also against sarcoma. The question, therefore, concerned itself not with a definite cytolytic process. It was possible by increasing the temperature to increase the virulence of the new growth. A further rise of temperature through 5° would reduce the virulence. This was exactly the same experience as with bacteria. Normal epithelium did not act in this way. Heat, if carried sufficiently high, would cause coagulation necrosis of the cells. In the experiments on immunity one had to take account of a variable factor, virulence, on the one hand, and a variable factor, immunity, on the other. It was found that inserting a needle into a small tumor would cause its retrogression. This effect was of the same nature as that which was produced by adding blood serum to cancer cells in the test tube. The needle set free a certain amount of serum into the cancer, and this serum exercised that power which conferred on the animal natural immunity. The success reported by Beard of Edinburgh as following the injection of trypsin into cancerous growths really depended upon this setting free of serum, and was identical with that which would follow the injection of any other inert substance. Squeezing the tumor or causing it to bleed would have the same effect. This experience was analogous to that of surgeons. The success following excision of a growth was not always due to total ablation of the cancer cells. In some cases even thorough removal of all infected parts did not suffice to prevent a recurrence, while in other cases a partial removal of the growth was sufficient to effect a cure. How was this discrepancy to be explained? One was obliged to recognize a condition of equilibrium between infection and immunity. There was a point in which the equilibrium was in favor of the tumor, and *vice versa*. In the early stages a little interference such as puncture, incision, or squeezing served to turn the equilibrium in favor of the immunity, while in the latter stages it served to make the tumor grow worse. The results of surgical intervention seemed to be related to the amount of blood that was lost. The operations in which the loss of blood was least were the most successful. This conserved the natural immunity of the patient.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending July 28, 1906.

	Cases	Deaths
Tuberculosis Pulmonalis	393	147
Diphtheria	166	24
Measles	213	21
Scarlet Fever	54	1
Smallpox	—	—
Varicella	18	—
Typhoid Fever	98	10
Whooping Cough	43	16
Cerebrospinal Meningitis	12	12
Malarial Fever	.....	.....
Totals	997	231

Methodical Protection Against Paludism.—P. Desfosses discusses this subject in a very practical manner, presenting at the same time cuts which illustrate his descriptions. He declares that the methodical protection of dwellings by the means of metal netting offers a practical and sure defense against attacks of malaria. It has been determined that now under complete protection not one case of the disease occurs in malarial regions in which the proportion of individuals attacked by malaria formerly varied from 57 to 60 per cent. With almost complete protection the proportion is 1 38-100 per cent. Protection does not hinder the view, nor does it spoil the ventilation of the apartments. It protects the inhabitants against flies as well as mosquitoes.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending July 28, 1906.

SMALLPOX—UNITED STATES.

		CASES	DEATHS.
Florida, Columbia County	July 14–21	1	..
Nassau County	July 14–21	1	.
Jacksonville	July 14–21	4	.
Georgia, Augusta	July 16–23	3	..
Illinois, Galesburg	July 14–21	3	
Louisiana, New Orleans	July 14–21	10	
Oregon, General	June 1–30	21	.
Tennessee, Knoxville	July 14–21	5	.
Memphis	July 14–21	1	..
Utah, General	June 1–30	50	.
Washington, General	May 1–31	1	
	June 1–30	73	.

SMALLPOX—FOREIGN.

Africa, Cape Town	June 2–16	16	..
Brazil, Rio de Janeiro	June 10–17	1	..
Canada, Toronto	July 7–14	1	..
Winnipeg	July 7–14	1	.
China, Hongkong	May 19–June 9	11	8
Shanghai	June 9	..	Present
France, Marseille	June 1–30	..	1
Paris	June 23–30	5	..
Great Britain, Bristol	June 30–July 7	1	..
Hull	July 7–14	1	1
India, Bombay	June 19–26	.	1
Calcutta	June 9–16	.	23
Karachi	June 18–24	5	1
Rangoon	June 9–16	.	5
Italy, General	June 21–July 5	38	..
Japan, Kobe	June 9–16	1	..
Russia, Moscow	June 16–30	9	2
Odessa	June 10–17	5	3
St. Petersburg	June 18–30	11	3
Spain, Barcelona	June 20–July 10	..	12
Seville	June 1–30	.	26

YELLOW FEVER.

Honduras, Ceiba	July 23	.	Present.
Pimienta	July 5	1	..
Mexico, Veracruz	July 24	1	Imported from Yucatan.

CHOLERA.

India, Bombay	June 19–26	..	30
Calcutta	June 9–16	.	28
Rangoon	June 9–16	..	1

PLAGUE.

China, Hongkong	May 19–June 9	240	236
Egypt, Alexandria	June 30–July 5	4	3
Guerga Province	July 1	9	8
Port Said	July 2	1	1
India, General	June 2–9	3597	3446
Bombay	June 19–26	..	47
Calcutta	June 9–16		38
Karachi	June 18–24	39	34

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Original Articles.

DOES THE DRINKING OF WATER GIVE TYPHOID FEVER?

BY R. G. ECCLES, M.D.,

BROOKLYN, N. Y.

THAT the development of typhoid fever is connected with the use of infected water there is no reasonable room to doubt. The facts substantiate this hypothesis too firmly for it to be likely ever to be seriously shaken. That typhoid fever results from the *drinking* of infected water is quite a different proposition, and one that there are many reasons for doubting. The general belief among medical men, at present, is that the drinking of polluted water gives this disease. Since the polluted water does, somehow, give the disease, the assumption has been made that it results from the drinking of such water. There is no recognition of the fact that other explanations are possible and may be better. A diligent search of the literature of this disease has failed to reveal any evidence whatever that the drinking of water ever caused a single case, that the drinking of water could possibly start a case, or that there are any indications pointing to the possibility that spring, well, river, or hydrant water can reasonably be charged with having probably started any particular case. The belief, though almost universal among medical men, that typhoid fever is started by the drinking of water, appears never to have met with the slightest support from any facts. So far as can be discovered from the literature it is a pure assumption, unsubstantiated by either experiment or experience. It seems to have been taken for granted that, since the water and the disease are related to each other, the relation must be through the particular water which we drink; this, too, in defiance of known facts that stand in opposition to so gratuitous an assumption.

Prior to the Spanish-American War the belief was universal that if our soldiers could be induced, persuaded, or compelled to refrain from drinking water that had not been boiled they would remain immune, or nearly so, to typhoid fever. The Surgeon-General sent out an order for all the men to boil the water used for drinking. Probably many of them disobeyed this order, but a large proportion of them obeyed it. What was the result? Was there any diminution in the proportion of diarrheal diseases? So far as we can learn there was not. Past records were repeated. More soldiers died of diarrheal diseases than of bullets. So numerous were the cases and so alarming was the number of those who died from typhoid that a special commission was appointed to inquire into the cause of so terrible a mortality. The believers in the theory that the drinking of bad water was the sole or chief cause of this disease were shocked at the failure of their sovereign remedy; but their gospel of salvation was scotched, not killed. Popular theories die hard; their destruction can only be accomplished piecemeal. The British soldiers during the South African War had a like experience, and, although greater strictness was practised with them than with our men, in the matter of using only sterile water when water direct from uninhabited mountains was unobtainable, the results were the same. The Japanese army had no such experience, and while their water was also boiled there is no reason for believing that the boiling of the same did them any more good than did the boiling of that consumed by the British and Americans.

About thirty-five years ago Prof. Joseph Leidy of Philadelphia said that he believed that flies were responsible for many cases of disease, and advised hospital surgeons to keep these pests out of the wards. He had examined a number of flies, microscopically, which he found feeding on fungi, and discovered that a fluid which exuded from their proboscides, and also the contents of their stomachs, were swarming with spores.[1] Nearly forty years ago Hoffman demonstrated the presence of tubercle bacilli in the bodies of flies captured in a room occupied by a consumptive. The excreta of the flies were full of bacilli.[2] Nuttall showed that the common house fly, when fed on plague bacilli, were found to contain them forty-eight hours after the meal.[3] Hart declares that there are well-authenticated cases of flies having carried Asiatic cholera, and that Haffkine found cholera spirilla in milk exposed in new vessels to flies.[4] Howard declares that it has been experimentally found "that every footprint of an infected fly on sterile culture media was followed by a discrete colony of the germ."[5] As most of our food constitutes an excellent culture media for germs, and as flies have been demonstrated to carry disease germs to food, it is an easy step to ascertain where lies the common source of infection from not only typhoid fever, but many other diseases. The fact that flies go through human excreta, garbage, slops, sputa, and decomposing matter in one minute and then, at the next, wading over our food, is certainly not a very pleasant thought to contemplate. In the Report of the Army Medical Commission that studied the cause of the typhoid epidemic among our soldiers we are told that flies "swarmed over fecal matter in the latrines. They visited and fed on food prepared for the soldiers in the mess tents. In some instances, when lime had been recently sprinkled over the contents of latrines, flies, *with their feet whitened with lime,* were seen walking over the food."[5] Dr. Tooth states that during the Boer War in South Africa the soldiers found the flies to be a veritable plague, and says: "They were all over our food, and the roofs of our tents were at times black with them."[6] In the American Report we are told that "officers, whose tents were protected by means of screens, suffered less proportionately from typhoid fever than those whose tents were not so protected."[5] Dr. W. G. Thompson points out that, in 1898, "fly infection was much more disastrous than water infection," and says that "the diptera alight

upon typhoid excreta in imperfectly disinfected camp sinks and convey the bacilli upon their feet, probosces, etc., to the first dish or article of food they alight upon."[7] Celli demonstrated that typhoid bacilli, when fed to flies, were excreted by them in virulent condition.[5] What is, perhaps, one of the most interesting experiments relating to the connection between flies, water, and typhoid fever ever tried occurred at Diyatalawa camp, in the hills of Ceylon. Boer prisoners were kept there. Not a case of typhoid occurred among the soldiers until a batch of Boer prisoners arrived, one of whom was taken down with this disease. He was taken so soon after his arrival that he was supposed to have brought the infection with him. In three months there were six hundred cases in the camp. Prisoners and soldiers were separated by a barbed-wire fence. Something seemed to carry the infection through that fence. All the water came from the uninhabited mountains through an iron pipe and was passed through a Berkefeld filter before being used. Every soldier who left the camp was compelled to take this water with him. Only condensed milk was used. The senior medical officer says: "During the whole period that typhoid fever was prevailing in the prisoners' camp flies in that camp amounted almost to a plague, the military camp being also infested, but to a less extent."[8] Numerous cases can be cited of typhoid fever being carried to places where no other conceivable agent than the flies could be held responsible. In every one of these cases there is not the shadow of a doubt as to how the germs got from the flies to the patients. In every instance it was through food. The Board of Health of Glasgow, Scotland, in a review of forty years' experience, sums up the evidence for that region by saying: "If we consider the history of enteric fever in detail, we observe that everything like an epidemic prevalence has been caused by the distribution of milk."[9] Here again we observe that it is food that is held responsible. An epidemic recently occurred in Deggendorf, Germany, where both milk and water were above suspicion, and where the only ones attacked were school children who had eaten food at a certain soup house.[10]

The defenders of the theory that typhoid fever can be taken by the drinking of water are forced to ignore entirely the matter of dosage. As water is used in preparing food, in washing vessels that are to contain food, in washing places in which food is stored, and in adulterating such food as milk, it is easy to see how the exceedingly small number found in water can be multiplied sufficiently to reach a dangerous dose. Allbutt tells us that "the microorganisms responsible for a number of our commoner infective diseases belong to the group of facultative parasites, or facultative saprophytes, organisms which are capable of multiplying outside the human body."[4] They grow in various kinds of food. Fischer says: "The bacteria of typhoid, anthrax, glanders, tubercle, diphtheria, and cholera grow well, without causing any change in the appearance of milk that would suggest contamination."[11] As regards the speed of such multiplication, Professor Conn says: "Some of the species that have been carefully watched under the microscope have been found, under favorable circumstances, to grow so rapidly as to divide every half hour, or even less. The number of offspring that would result in the course of twenty-four hours at this rate is, of course, easily computed. In one day each bacterium would produce over 16,500,000 descendants, and in two days, 231,500,000,000."[12] Metchnikoff makes the rate swifter than this.[13] As there are some medical men who still seem to imagine that the entrance of one single disease-producing germ into the body presages danger it will be well to call their attention to the following statements made by our best experts. Rideal says: "They only produce dangerous results when multiplying beyond control they penetrate the blood and tissues, interfere with nutrition, set up irritation by their presence, or poison the system by their products of excretion."[14] Cabot says: "Scientific investigation demonstrated the fact that the living tissues were not passive breeding places for bacteria, but that they were able to offer a very considerable resistance to the growth of microorganisms. As Dr. Welsh has said, it took a considerable dose of the bacterial poison to produce an effect upon healthy tissues."[15] Allbutt says: "Lubarsch has shown that in order to kill a rabbit by anthrax, by injection into the circulating blood, at least 16,000 virulent bacilli of the disease must be introduced; a smaller number only produces a transient disturbance."[4] Fischer says: "Investigations have yet to be made regarding the number of germs necessary to cause infection, particularly in the case of natural infections. In our experiments on animals the smallest doses must contain thousands of bacterial cells."[11] Conn says: "Even after the bacteria get into the body it is by no means certain that they will give rise to disease, for they have now a battle to fight before they can be sure of holding their own."[12] Clemow says: "Thousands of harmful microparasites may enter the body with each breath or with each mouthful, yet, providing the protective forces are present in sufficient number and activity, the invading parasites are destroyed or rendered harmless." Fischer says "the normal gastric juice in a test tube destroys in half an hour the bacteria of cholera, typhoid and glanders, pus cocci, and the sporeless cells of anthrax."[11]

What evidence is there that ordinary hydrant, spring, well, or river water ever contains germs enough to transcend the safe amount? It is easy enough to see how food might multiply them to the danger point, but it is not evident how any person could take the disease from water that thousands are drinking without being injured in the slightest. The typhoid germs injure by their toxin. As a toxin is of the nature of a proteid it is digestible to some extent in the gastric juice. As the germs are killed in the hydrochloric acid in half an hour it would require but a short insertion to inhibit their prolific power. As the bile has likewise antiseptic powers, and as the trypsin would digest more of the toxin, they would certainly reach the intestines in a badly crippled condition unless they came as an invading host sufficiently numerous to overcome every obstacle. On reaching the intestine they would have a battle royal for their means of subsistence with the normal flora of that region. If there were still enough of them left to continue the invasion after running the gauntlet of all of these protective forces they would then have to overcome the lysins and phagocytes of the blood. In view of all these facts is it not evident that the dosage of filth germs must be quite high when they are able to run the gauntlet of so many resisting forces? When Pettenkoffer drank the cholera germs, in his celebrated defiance of the opinions of those who believed that cholera was due to the comma bacillus, he only demonstrated that the dose was too small. When typhoid, or other filth germs, get into food, in ever so small a number, there is practically no limit to the amount of poison they are able to produce, if temperature and other

conditions favor them. The mere washing of a container with polluted water can leave one or more such germs to get into milk, soup, broth, porridge, custard, etc., or to get upon meat, oysters, fish, or left-over victuals of many kinds. The swallowing of these germs at their successive stages of multiplication would do no harm until they had reached a number and virulence capable of overcoming every protective force of the body. On passing that dose they could continue their multiplication until enough were produced to create an epidemic. No other rational explanation of epidemics of cholera, diarrheal diseases, or typhoid fever has ever been advanced, and yet this one is not generally accepted, because it disagrees with the utterly unfounded theory which so many entertain, that these diseases can be given to people by the mere drinking of water. If there was the slightest evidence in the world making this popular notion probably true there might be some excuse for the stubborn way in which it is adhered to; but when the fact stands boldly forth that there is not a single peg on which to hang it, save mere blind conjecture, its tenacity stands as a marvelous proof of human conservatism.

No hypothesis is of any scientific value that fails to give a reasonable explanation of and show the relations which probably subsist between otherwise isolated, though evidently kindred facts. That hypothesis which can bring most facts into a harmonic whole is always found to be the true one. This, indeed, is, to the scientific mind, the test of its truth. In proportion to the fewness of the facts which a hypothesis is capable of causing to cohere, so is its weakness and unlikeliness to be true. A hypothesis that has existed unchallenged for years and yet has no facts of its own to harmonize, is *ipso facto*, self-condemned. The large number of facts which the food hypothesis of typhoid fever can generalize stands in remarkable contrast with the utter absence of fact as a basis of its rival. Through it, and through it alone, are we able to perceive just how the changes of the seasons, the rise and fall of temperature, the differences in the ages of the victims, the differences between country and city, the differences in the habits of people, the differences between fly season and nonfly season, the differences between people of various though related nationalities, the differences between negroes and white people, the differences between Japanese and American soldiers, the differences between cities having filtration plants and cities without such plants, the differences in different avocations, etc., produce rises and falls in our death rates. In a general way we know that cleanliness is the most important factor in sanitation, but no one has any clear conception of just how sanitation accomplishes its wonderful work, with the class of diseases we are considering, until he has perceived the exact part that food takes in their transmission. Once look at water as doing just what flies do, what dust does, what fomites do, and a flood of light is immediately thrown upon the problem. Consider these as mere seed sowers and food as the disease breeder, and for mystery we shall get a revelation, for fear we shall get confidence. It would be impossible, in this brief article, to go into all of these conditions and point out just how the food becomes responsible. Let any unbiased person assume the possibility of the food hypothesis being true, as he must do if he is at all scientific in his habits of thought, and he will be able to work out the details without difficulty. If he asks himself why warm weather increases disease of this type he will find that the water theory is dumb, while the food one gives a prompt and apparently satisfactory reply. In food warmth promotes the multiplication of pathogenic microorganisms. By increasing their numbers it increases their dosage, and thereby their danger. If he asks why negroes suffer more from such diseases than whites he will again find the water hypothesis dumb. Its supporters may contend that a difference in race immunity is the explanation. Here it will be observed that instead of bringing the facts together into a single explanation they do what the holders of false theories are always compelled to do, *i.e.* introduce a multiplicity of hypotheses. Until they can tell us what they mean by immunity they are merely trying to explain mystery with mystery. Intestinal immunity resides in conditions which evolution declares must be the most fixed, most certain, most resistant, and most uniform of our whole being. The struggle between bacteria and higher organisms must have been incessant there during all time. A variable immunity would have been wiped out millenniums ago by the utter extinction of any creature cursed with it. Not for one single instant would there be certainty of safety for them. It is perfectly safe to assume that intestinal immunity is racial immunity, or even vertebrate immunity, under all ordinary conditions of exposure, if evolution is true. A whimsical, mystical immunity may be good enough to bolster up a factless hypothesis, but it is certainly not good enough for the purposes of science. Such a fact as the following should put a quietus to so airy a speculation about immunity in the minds of all evolutionists: "The fact that several species of fossil bacteria are known from the carboniferous and other periods shows that they are among the oldest inhabitants of the earth, and were already widely distributed when the tertiary epoch and the evolution of warm-blooded creatures began." (Fischer.[11]) The poverty of the average negro, his lack of means of protecting his food with ice, his economical necessities that compel him to consume warmed-over victuals, his encouragement of flies by his careless disposal of slops and garbage, his heedless exposure of food to dust, are all factors that help to plant disease germs in his food and multiply these germs to the danger point. It has long been perceived that these habits and conditions had something to do with his susceptibility, but it was easier to refuse to think out just how they accomplished it than to try and ferret out all the connections. In the food, and in the food only, do we discover the nexus of connection. Dirty white people come in as close seconds with the negroes in their suffering from intestinal diseases, and it is easy to perceive that the food conditions that act in the one case recur in the other. Flies and dust, dirty hands and dirty vessels, by coming in immediate contact with food, sow the germs that multiply, unperceived, up to the danger dose. When we next consider the great differences that exist between cases in any epidemic, we see how the food hypothesis illuminates the situation. Mild cases mean mild doses, intensely virulent cases very large doses, and cases of every intermediate force, intermediate doses. The same dish of food partaken of by a dozen persons will produce a dozen different results. Before such a fact the water-drinking theory is again dumb. The food theory, on the contrary, gives a luminous and satisfactory explanation. In the development of germs in food they are fixed in colonies. One slice or one dish of that food may contain millions of the germs, and another taken from where the colonies were scarce or absent would contain few. The division would give all degrees. In the development of germs in milk, certain cans could become infected in a carload, while other cans of the same supply might

escape. Customers receiving their supply from the infected cans might have the disease, while others getting the same dealer's milk would escape. The cans could be infected from the water used in washing them and the dairymen be innocent of any intent to palm off bad milk. Milk users who happened to be served with the infected milk would fare differently from it, according as they used small amounts of that milk in hot tea, or large amounts of it as a beverage. The dose would give results. Various kinds of food vary in their ability to develop typhoid. A milk-using people would in their ice-cream, puddings, custards, charlotte russes, merangue pie, and other delicacies into which uncooked milk enters, be in vastly greater danger from typhoid fever than would a people who use no milk because of their religious prejudices or national habits. In the war in Manchuria the Japanese lost only one-sixth as many cases from typhoid fever and dysentery as did the Russians. The differences in the character and the method of care of the food of the two nations amply accounts for this result without our going into ecstasies regarding the wonderful care taken by the little brown men to prevent disease. The Russian soldiers had boiled and filtered water as well as the Japanese. What the former did not have was food that resisted the development of germ colonies as did that of the latter. When a Russian soldier had rice, pudding, porridge, pies, recooked potatoes, etc., they were often mixed with milk. By exposure to dust or flies they became excellent culture media for the germs these bore to them. When the Japanese soldier had his rice or barley, it was not administered as a slop, but in a condition of relative solidity, which gave it some degree of resisting power to the development of germs. They ate little meat and had no soups or broths. They drank no milk. The United States surgeon assigned to study the hygienic conditions of the Japanese army while in the field, reported, on his return home, that "there was a constant use of creosote pills, the boxes of which were marked: 'To defeat the Russians, take one pill three times a day.'"[18] In the care and character of food the two armies were quite unlike. In the care and character of the water there was little or no difference between them. All food eaten by the Japanese soldiers who used the creosote pills was treated to preservatives so that to the disinfecting action of the gastric juice was added the disinfecting action of the creosote. Did this continuous and universal use of a preservative injure or benefit them in their struggle on the battlefield. Three times a day all that they ate was embalmed. Kitasato, the great Japanese bacteriologist, was doubtlessly the originator of this strange idea, as he was the army's inspiration in matters of this kind. As he was educated in Germany along with Behring we can see in this a unity of thought between them when the latter gentleman, in defiance of popular opinion, published his book on "The Suppression of Tuberculosis," which teaches that this disease may be subdued by the use of a potent preservative in milk. When Koch advocated the use of quinine for the suppression of tropical malaria he was inspired by practically the same idea. Is it not strange that three of the best qualified bacteriologists in the world should entertain such heretical ideas concerning the use of antiseptic substances? Is it not still more strange that vital statistics always seem to confirm their contentions?

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191 Dean Street.

THE PROPER LIMITATIONS OF THE MEDICAL AND SURGICAL TREATMENT OF GASTRIC ULCER.*

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Gastric ulcer is one of those diseases in the treatment of which internal medicine and surgery meet. Their precise indications are in the formative stage and are, naturally, to some extent a matter of individual judgment, and it is not at all strange, therefore, that striking differences of opinion should exist. Dogmatism should find no place in the discussion, and any claim on the part of internists that surgery has not an important rôle to play in the treatment of gastric ulcer is clearly wrong, while, on the other hand, the contention that gastric ulcer, like appendicitis, is essentially a surgical disease is, in my opinion, equally wrong. The truth lies between these two extreme propositions. The moment seems opportune briefly to review the results of these diverse modes of procedure, with the hope that each interchange of views will help to delimit their scope and indications. That the so-called medical treatment of gastric ulcer has been in some respects an unsatisfactory chapter, must be freely admitted. Brinton held that only about one-half of all cases were curable, while Lebert only found a mortality of 8 per cent., and Rosenheim of 10 per cent. It has been clearly shown by Fenwick that the high mortality of gastric ulcer maintained by Brinton and Debove and Remond was due to faulty methods of analysis, as in not less than 40 per cent. of the fatal cases of the latter writers tuberculosis was the real cause of death. The striking influence of proper methods and favorable conditions upon the outcome of gastric ulcer is well illustrated by the statement of Fenwick, that 17 per cent. of the cases of gastric ulcer occurring in his hospital clinic died from the immediate results of gastric ulcer, while in private practice, where cases could be better controlled and environment was more favorable, the mortality did not exceed 4 per cent. Out of 556 cases treated by Leube, the cures were 74 per cent. and the mortality only 2.4 per cent., and it may be safely stated that when the diagnosis is made early and cases properly treated, that the mortality need not

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exceed 5 per cent. Between the 74 per cent. that make a complete recovery and the 4 or 5 per cent. that die, there is a considerable group of cases in which the result is unsatisfactory and the cure incomplete, and it is with reference to this group of cases as well as the fatal ones that the question of surgery applies.

As a matter of fact, in spite of the enormous amount of work that has been done and the records of which have been published, we are without adequate and satisfactory data by which to judge the efficacy and the dangers of both the medical and surgical treatment of gastric ulcer. With reference to the surgical treatment, its advent is too recent to permit of final judgment, while the same difficulties must be encountered in following up and analyzing cases as have beset the experience from a medical point of view. What is needed is a large series of cases of all sorts, carefully treated on a uniform plan. This really has been done, but beyond this it is necessary to follow both the cases which are apparently cured and those which are simply improved for a long period of time, which in the nature of things is possible only with a certain proportion of cases. There is no doubt whatever that many cases which are apparently cured by medical treatment will subsequently have a relapse, while presumably a much larger proportion of those cases which are only improved will suffer subsequent exacerbations more or less serious in character. While this is admittedly true, it remains to be shown that it will not be in a large measure true with reference to the cases treated surgically. It remains to be shown that a case cured surgically is any more completely or permanently cured than one which is cured without surgical treatment. The principal object of surgical treatment, and the trend of recent surgical experience, is to make physiological rest of the organ more nearly the exclusive object. That such rest can be secured over a long period of time more absolutely by means of a gastroenterostomy than by any other means there is not the shadow of a doubt. The opening of the abdomen, however, and the gastrointestinal anastomosis, cannot be viewed as a trivial affair, and can be justified only on the ground of either protracted disability and suffering or danger to the life of the patient, and the real question is whether such a degree of physiological rest as is requisite, for the healing of the ulcer cannot be secured and maintained without the hazards and nervous shock of the operating table. The mortality of the Mayos in 89 uncomplicated gastroenterostomies, reported in 1902, was 7.8 per cent. Munroe in 1904 reported 23 cases of gastroenterostomy for nonmalignant stenosis, with a mortality of over 20 per cent. These cases were unusually unfavorable ones. On the other hand, Moynihan reported 37 cases with no deaths. It is obvious from these and similar records that gastroenterostomy is not without hazard and is not to be lightly advised.

Since the days of Cruveilhier up to the advent of gastric surgery, the principal object of the clinician, attained in various ways, has been to give the organ the greatest degree of rest consistent with the integrity of general nutrition. For a few days or a week this can be accomplished for all practical purposes quite as well by medical as by surgical means, with the possible exception of a few cases in which there is a continuous hypersecretion in the intervals of digestion. The experience of clinicians has shown, and especially the very large experience of Leube, that in about three-fourths of all cases the healing process will have begun and will have received such an impetus during this period of rest, supported, of course, by rectal alimentation, that suitable liquid nourishment may then be taken into the stomach without interfering with the healing process. For this 75 per cent., then, if they could be discriminated from the remaining 25 per cent., surgical treatment would be an absolutely unwarranted procedure. What is needed more than anything else in order more clearly to define the scope and efficacy of medical treatment, is a fuller and more complete control of the something like 20 per cent. of patients who are discharged improved but not symptomatically cured. This is vitally important for two reasons, first, to determine the final issues in such cases, and second, to secure such control of diet and environment as will give those patients the best possible chance for recovery. There can be no reasonable doubt that a considerable proportion of this 20 per cent. do badly because of dietetic indiscretions, practised either openly or surreptitiously. One of my patients, for instance, who was apparently following a strict diet and not doing very well, was detected by another patient boarding at the same place eating the indiscriminate and not very well prepared food of an ordinary boarding house, in which arrangements had been made for a suitable diet. These are factors which influence the final results of medical treatment no more than they would of surgical.

There are other factors which tend to throw uncertainty upon the statistics, one of which is the possible fallacy of symptomatic cure. Robson and Moynihan put it as follows: "It is useful to hold in view the course of an ulcer of the leg, which, directly the healing stage has arrived, becomes free from pain. But this neither indicates that healing is completed, nor that care may cease." It is only fair to say, however, that the parallelism between an ulcer of the leg and ulcer of the stomach is certainly not any greater than that which could exist between a straight and curved line. The ulcer of the leg can be cleansed, treated with a dry dressing, and remain subsequently free from irritation, and might easily, therefore, be free from symptoms, while an ulcer of the stomach, the functions of which cannot be suspended with impunity, as are those of the leg, is subjected to varying grades of irritation, and the absence of symptoms has therefore much greater significance than it would have in the case of a leg ulcer. Nevertheless, abundant clinical observation proves beyond doubt that owing to the personal equation of the patient or other causes, gastric ulcer may exist absolutely latent, and we must therefore admit the possibility that some of the cases which are symptomatically cured are not really so. Here again, however, this supposition will apply, so far as I can see, with absolutely the same force to a case treated surgically as to a case treated medically.

The experience of J. W. Russel is valuable in this connection, in that it traces the after-history of 47 cases for periods of two to thirteen years, with an immediate mortality of 2.1 per cent. and recovery in 42.6 per cent. Of the 42.6 per cent. that recovered, 27.7 per cent. had but a single attack, while 14.9 per cent. recovered after one or more relapses. Of the remainder, 15 per cent. had repeated attacks, but were free from symptoms in the intervals, while 30 per cent. had more or less continuous pain. It appears from his experience

that something more than one-fourth of the cases have more than one attack, while Sears has found recurrence in 60 per cent., which is certainly exceptional. These facts certainly have an important bearing on the question of the permanence of the cure produced by any means whatever, but probably will be found to apply equally to medical and surgical methods. Sears, in fact, admits that surgery does not always cure, and that recurrence has followed surgical treatment.

It is not my intention to enter into a full discussion of the various means of treatment from a medical point of view, although I will incidentally state the method which has given the best results in my own personal experience. One question cannot well be passed without a brief discussion, and that is, Shall food be given from the beginning of the treatment or not? The method of Leube, beginning with a period of starvation and rectal feeding, is too well known to require discussion. Others in recent years have advocated giving the patient at once properly selected food for the stomach. Among the most interesting contributions along this line is the well-known comparative series of cases reported by Greenough and Joslin. These two series of cases occurred in two different services of the Massachusetts General Hospital. In one series of cases rectal feeding was uniformly followed for the first few days, while in the other it was limited to the severer cases, lime water and milk being given from the start to all others. Of the cases who received rectal feeding from the first the recovery was 32 per cent., while of those who received food by the mouth from the beginning of treatment 44 per cent. were cured. The adoption of rectal feeding in the severer cases of the second group, however, vitiates the statistics as a whole, but probably tends to show that no iron-clad rule is applicable to all cases, and that the treatment should be individualized.

It seems to me that chemical pathology has pointed the way, or, rather, has furnished some of the indications for the treatment of gastric ulcer, as it has of so many other morbid conditions. The formation of gastric ulcer, whatever may be the etiological factors, is a process of cytolysis. Excepting that it occurs in the fixed tissue of the stomach wall rather than in the floating cells of the blood, it is for the most part entirely analogous to the phenomena of hemolysis which have been so extensively studied within the last few years. The occurrence of cytolysis under the influence of a lysin is prevented by certain chemical products known as antibodies, the formation of which is stimulated by the presence of a lysin, but which presupposes as a *sine qua non* the integrity of the nutritional processes of the body. Perhaps the cytolysin which destroys the tissue in the circumscribed area of the gastric wall which is to become the seat of an ulcer may be the gastric juice, or it may be the gastric juice plus something else. There are two conditions which may make this cytolysis possible, first, a lowered resistance of the circumscribed area of tissue from an unknown cause, whether thrombus or something else; and second, and perhaps coupled with the first, a failure on the part of the antibodies of the circulating fluid which bathes the cells to do their work. With the first of these conditions it is not my intention to deal. The second is fundamental in a therapeutic program, and is vital to the limitations of the ulcerative process. That it is dependent upon proper nutrition with all that this implies, is perfectly obvious, and its bearing upon the question of properly feeding patients suffering from gastric ulcer need scarcely be pointed out. It seems to me perfectly clear, when we take into account the widely different states of nutrition met with in the various cases of gastric ulcer, that a plan of treatment suitable to one case might easily be entirely improper for the next. Patients that are fairly well nourished have, as we know, a certain amount of reserve nutrient material stored up within the organism, upon which they can draw for a limited time, and if this is supplemented by properly directed rectal feeding, there seems to be no reason why in such patients the ulcer should not be given the benefit of complete physiological rest, as it can be done without substantially interfering with the chemical processes of nutrition which produce those protecting chemical bodies above referred to. On the other hand, patients who have become greatly emaciated and in whom the chemical processes of nutrition are necessarily greatly impaired, the reserve supply of nutritive material has been more or less completely used up, and the chemical processes of the body, both constructive and protective, correspondingly weakened, and anything approaching starvation treatment in such a case is to be viewed with great apprehension, and is liable to do more harm than good. What I would plead for, then, would be a differentiation of the cases, starvation with rectal feeding for various lengths of time in those cases to which it seems adapted, and earlier and perhaps instant feeding in those in which it is apparently demanded.

In the average case, my method has been to put the patient to bed from three to six days, with absolute starvation so far as stomach feeding is concerned, and give at the same time systematic rectal alimentation. If necessary, at the outset the stomach is cleansed with a 1 per cent. solution of sodium bicarbonate, but this is only indicated when there is an excess of mucus or other secretion. Immediately following this lavage or without it, a single large dose of bismuth subnitrate, say about 90 grains, is given. This is repeated each morning if the conditions require lavage. At the expiration of the starvation period, which is continued for whatever length of time may seem proper in the individual case, feeding is resumed in general accordance with the Leube plan. In cases, however, with greatly impaired nutrition, milk and lime water, or better egg albumin, should, I believe, be given from the onset, supplemented, of course, by rectal alimentation.

I wish in conclusion to call attention to a few of the unfavorable aspects of the surgical treatment of gastric ulcer. One of these is the occurrence of acute perforating jejunal ulcer, which occasionally follows gastroenterostomy. Another feature which cannot be entirely free from objection is the permanent fixation which gastroenterostomy entails between the stomach and intestine. It cannot be otherwise than that such immobilization interferes with the motility of both organs, and if closure of the anastomotic opening occurs, as has been found by both Moynihan and Czerny, the motility of the stomach is permanently crippled. On the other hand, as long as the anastomotic opening remains patent, the observations of Hartman and Soupalt have shown that in all cases of gastroenterostomy, either anterior or posterior, both bile and pancreatic juice are regurgitated into the stomach, a phenomenon which may not be serious, but which cannot be viewed with entire satisfaction.

Now, it appears to me that the logical conclusion from all these facts is that every case of gastric ulcer ought, if possible, to have the benefit of a carefully conducted medical treatment at the hands of an intelligent practitioner before the question of surgery has been raised at all. In other words, the case is a medical one and not a surgical one, at the outset. When it comes to a recurrence, which the statistics go to show occurs in a large number of cases, the question is not quite so clear, but I am inclined to think that, barring severe symptoms which do not yield to the rest treatment, the patient should have at least a second chance at medical treatment. This conclusion ought to stand until it has been shown that recurrence does not follow surgical treatment, as precisely the contrary now appears to be the fact. Nevertheless there is a group of cases which may either grow larger or smaller with increasing experience, in which a gastroenterostomy is clearly the proper line of treatment. It is, perhaps, impossible at the present time to formulate accurately the conditions which would justify the procedure. Perhaps repeated severe hemorrhages may be placed among the list, but not as a curative measure for the hemorrhage, as experienced so far in emergency operations for hemorrhage scarcely justifies its repetition. Mumford and Stone (p. 156), who cannot be suspected of a medical bias, say: "Scattered reports from numerous surgeons teach conclusively the lesson that emergency operations to check violent gastric hemorrhage almost always end disastrously." This is very discouraging, but it would seem that for the present we must accept the logic of facts and consider a patient suffering from severe gastric hemorrhage safer with medical than with operative treatment. Severe and intractable symptoms, aside from hemorrhage, especially pain and vomiting, are certainly among the factors to be considered. A large proportion of cases, however, in which these symptoms are very severe, make good recoveries under medical treatment. The precise length of time during which medical treatment should be followed in intractable cases before surgical intervention is invoked cannot be decided by any hard-and-fast rule. The entire aspect of the case is quite as much a factor as time, and the two things must be taken together in the final analysis, and the resulting conclusion must be simply the judgment of the clinician, based upon all available facts. We must bear in mind the influences which the state of general nutrition has upon the healing processes everywhere through the chemical composition of the blood, and a case may not be symptomatically cured because the general nutrition is not up to the proper standard. Where it is possible in the face of the digestive disorders to put the patient on a proper nutritional plane, this ought certainly to be done, and then sufficient time given before labeling the case not amenable to medical treatment.

There is one other thing that I would especially plead for in these cases, both in the preliminary diagnosis, during the progress of the treatment, and as a criterion of end results, and that is repeated systematic scientific study of stomach secretion and motility, and the material obtained from the fasting stomach. I doubt very much if a latent ulcer can exist unrecognized in the face of such a study. The character of the cellular débris, the bacteriological content, as shown both by stained specimens and fermentative tests, are all points of the most vital importance in reaching a conclusion, although they can only be rationally considered in conjunction with the anamnesis and complete clinical picture.

There is much in the current literature of surgery of the stomach that shows an apparent lack of appreciation of the gravity of an abdominal section which is not altogether represented by the mortality, although this is not entirely nil.

As bearing on the question of time during which a case should have treatment before the intervention of surgery, Mumford and Stone quote with disapproval, as being too broad a generalization, the statement of a "Clear-headed surgeon" that: "If you have a patient who has suffered for two years from a chronic dyspepsia, unrelieved by internal treatment, you may fairly say that his case is probably a surgical one"; which emphasizes the remark that I have already made that no hard-and-fast rule, so far as time is concerned, can be made, but that a critical study of the case by a competent internist, in conjunction, perhaps, with a consulting surgeon, is the only safe ground upon which to rest a decision, as the time may be two weeks or two years. I will conclude with their further opinion, which has my entire approval, that we cannot say of gastric ulcer what has come to be said of appendicitis, that it is purely a surgical disease, but that in many instances it is so, and that the judgment and possibly the services of a surgeon are desirable in a certain proportion of cases.

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THE HEALTH AND MORTALITY OF THE COTTON-MILL OPERATIVES OF BLACKBURN, ENG.

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One of the most instructive examples of the good use that may be made of local mortality returns is furnished by the Annual Reports of the Medical Officer of Health of Blackburn, England. Blackburn borough is in the very heart of the cotton mill district of England, and embraced in 1901 a larger number of cotton-mill operatives than any other single borough in the United Kingdom. In 1901 there were 38,551 cotton-mill operatives in Blackburn borough, representing about 38 per cent. of the total population of ages ten and upwards. In 1891 the proportion was still greater, or about 42 per cent. In fact, for at least a hundred years the cotton industry has been the all-important manufacture in Blackburn. In 1851, "46.5 per cent. of all the males, and 35 per cent. of the females above the age of twenty years were employed in the cotton mills," and in addition, "a considerable number of young persons of both sexes under twenty years."

Although cotton-mill operatives have thus constituted the most important element of Blackburn's population for a long period of years, the careful compilation of their mortality statistics, as distinct from those of the borough population as a whole, was not begun until 1890. The health of the employees, however, had long before attracted considerable attention, and among other references we find the following in the Medical Reports of the Privy Council for 1861, in a discussion of the health conditions of the cotton operatives of Blackburn. "The great prevalence of pulmonary diseases among the inhabitants of Blackburn had not escaped the notice of the resi-

dent practitioners. Mr. Wraith, of Over Darwen, certifying surgeon of factories, and also parochial medical officer for that district of the Blackburn Union, had observed for maore than twenty years the great prevalence of bronchitis and phthisis. He had specially noticed that operatives employed in the carding-rooms suffer from these diseases, and he attributed the circumstance to their inhaling dust and flue. . . . In Dr. Grime's opinion, inhaling dust and flue diffused through the atmosphere of the card rooms, is the primary cause of the prevalence of pulmonary diseases among this class of operatives, being out of all proportion more frequent among those who work in card rooms than among other occupied persons."

As a result of these discussions and with a view to determine the relative mortality of cotton operatives in the principal branches of the manufacture in a more definite manner than had previously been possible, Dr. Barwise, the local Medical Officer of Health of Blackburn, began, in 1890, the careful compilation of the mortality statistics of the cotton operatives making distinction of age and separating the more sharply defined groups of occupations. From 1891 to 1901, both years inclusive, the work initiated by Dr. Barwise was continued by Dr. James Wheatley his successor. In 1902 Dr. Alfred Greenwood was appointed Medical Officer of Health of Blackburn, and the work has since been carried on under his direction.

In the annual report of the Medical Officer of Health for 1892 use was made of the population returns by occupation, compiled from the Census books of 1891, and comparative death rates of the different classes of operatives were, for the first time, available. The mortality figures were given for all causes, consumption, and respiratory diseases, with distinction of card room hands, spinners, winders and warpers, and weavers. These primary distinctions have been continued since 1890, and in 1893 the returns were carried back a year to include 1889, so that now there are available in the Annual Reports of the Medical Officer of Health of Blackburn the mortality statistics of a large number of cotton-mill operatives for a seventeen-year period, 1889-1905, representing a total mortality among the four well-defined groups of operatives, aged fifteen and over, of 4,616.

Unfortunately, distinction is not made of sex, except in the mortality of weavers from all causes. This separation was first made in the Annual Report for 1895, and has since been continued. Appendices to the reports give the mortality of the operatives from various causes, but without distinction of sex. Thus far the rates have not been worked out for other causes than consumption and respiratory diseases, as the numbers are not yet sufficiently large to make such rates of determining value. In time, however, these detail figures will be of the greatest possible value in helping to determine the improvements in health, if any, of the operatives, and the causes of death other than consumption and respiratory diseases to which cotton-mill operatives are specially liable. It is to be hoped also that the occupations will be given in more detail in some of the future reports.

A brief description of the main processes of cotton cloth manufacture is necessary to a full understanding of the variations in the number of persons employed and in the comparative mortality rates. In Blackburn the cotton is worked up from the raw bales into the finished products. Not all of the cotton for weaving is spun in Blackburn, however, and the town is specially devoted to the weaving branch of the industry. There are very few shoddy mills in Blackburn, and the persons thus employed are so few as not to affect the whole. This statement is made because the employees of shoddy mills are generally considered to be among the most unhealthy of all cotton-mill operatives.

Preliminary to weaving, the raw cotton is cleansed in the picking and blowing rooms; it is then carded and combed in the card room; it is next spun, and then come the processes of winding and warping, followed by the weaving of the yarn into cloth. In the picking and blowing rooms much dust is created, and this is generally considered to be the principal ill-health producing factor in those processes. Relatively few hands are engaged in this work. In the card room the cotton is carded and combed, and these processes also create considerable dust. The cards and combs require to be cleaned frequently to prevent clogging, and the teeth also require to be ground occasionally. If this latter work is not done automatically the work is considered to be very hazardous because of the metallic dust engendered by the operation. Despite all precautions to enclose the carding machines, or engines, as tightly as possible, much dust escapes into the atmosphere of the card rooms, to the detriment of the employees' health.

From the carding machines the cotton is delivered to slubbing and roving frames where it is given a preliminary twist. It is then ready for the spinning frames. These are of three principal kinds—mule, throstle, and ring. The spinning done on mule frames requires male attendants as the work is heavy and demands more than a woman's strength. The dust factor is of importance in the spinning-room, but the high temperature, lack of proper ventilation, and liability to accident are also features of importance from the viewpoint of the health and mortality of the employees.

The spun yarn is next wound upon bobbins by "winders" and from the bobbins it is placed upon beams by "warpers." The warp is then "sized" and prepared for the looms by "reachers" and "drawers." There is some dust present in the atmosphere of the winding and warping rooms, and the ventilation, generally speaking, is unsatisfactory.

These preliminary processes are usually carried on in roomy shops, but notwithstanding the considerable air-space per head, the atmosphere is frequently by no means pure. In the spinning rooms the temperature is often very high and the air heavily charged with carbonic acid (carbon dioxide). Spinning is carried on in many-storied buildings in which light and fresh air have to be secured almost entirely from the sides. For several reasons very little fresh air has been provided in the spinning rooms in the past. "By excluding the outside air, the rooms can generally be kept at a good spinning temperature simply by the friction of the machinery, and at the same time particles of soot are prevented from entering and damaging the yarn."

The weaving of cotton cloth in England is principally carried on in one-story buildings, called sheds, and, as dampness conduces to good weaving, the sheds are usually located in damp places, and the floors are frequently flagstone laid directly on the earth. "The walls are without windows, and where openings are provided for ventilation, they are usually closed. All the light and most of the fresh air have to gain admittance through the roof, and little direct sunlight is admitted to the weaving shed." A large proportion of the weaving sheds of England are artificially moistened by the injection of steam into the atmosphere. Previous to 1889 there was no

legal limit to the artificial moisture infused in these sheds, and as a result very bitter complaints were made that excessive quantities of steam were injected into the atmosphere of the sheds, to the very serious detriment of the health of the weavers. As a direct consequence of the agitation over this feature of the industry, Parliament passed the Cotton Cloth Factories Act of 1889. This Act required among other things that 600 cubic feet of fresh air per head per hour be admitted into artificially moistened cotton cloth weaving sheds. This standard, a vast improvement over previous conditions, was condemned as insufficient by a Departmental Committee appointed a few years later to investigate the subject. This Committee, after making an exhaustive inquiry, recommended in 1897 that in no part of cotton cloth factories (artificially moistened) should the proportion of carbonic acid (carbon dioxide) in the air be greater than nine volumes of carbonic acid to every 10,000 volumes of air. This recommendation was embodied in the Cotton Cloth Factories Act of 1897, and became effective through an Order of the Secretary of State issued in February, 1898. This standard of ventilation is of the greatest importance as it represents the first attempt in the history of factory legislation to secure a standard of ventilation based upon the actual purity of the atmosphere breathed by the workers. This feature of the Act of 1897 has caused much discussion. It is claimed by many that the standard is too high to be maintained, especially on foggy days, or when the rooms are lighted by gas. On the other hand, there is evidence to show that many of the sheds are kept well within the standard, and that the Act as thus far enforced has resulted beneficially to the employees. In this connection, however, it may be stated that another Departmental Committee appointed to inquire into the ventilation of factories and workshops, recommended in 1902 " that the proportion of carbonic acid (in factories and workshops not otherwise dealt with) at the breathing level, except on foggy days, or when gas or oil is used for lighting, shall not rise, during daylight, or after dark when only electric light is used, beyond twelve volumes per 10,000 of air, and when gas or oil is used the proportion shall not exceed twenty volumes unless carbonic acid is produced in other ways than by respiration or combustion, as in breweries, etc."

TABLE I.

COTTON-MILL OPERATIVES.*

Blackburn, Eng., 1901.

NUMBER AND PERCENTAGE OF THE TOTAL POPULATION.

AGES	NO. OF OPERATIVES			PER CENT. OF TOTAL POPULATION IN COTTON MILLS		
	Males	Females	Total	Males	Females	Total
10–14.....	1,716	2,611	4,327	25.8	36.4	31.3
15–24.....	4,385	10,096	14,481	36.4	68.9	54.3
25–34.....	3,082	6,158	9,240	32.2	51.8	43.1
35–44.....	2,600	3,274	5,874	32.9	34.8	34.0
45–54.....	1,559	1,273	2,832	28.5	19.8	23.8
55–64.....	810	425	1,235	25.3	10.6	17.2
65 and over..	366	196	562	20.8	7.9	13.3
10 and over..	14,518	24,033	38,551	31.2	42.9	37.6
15 and over..	12,802	21,422	34,224	32.1	43.9	38.6

*Including unemployed retired operatives.

With these preliminary observations we pass to a consideration of the mortality of cotton operatives, based upon the number employed in the Blackburn mills in 1891 and 1901, and the deaths as recorded in the Annual Reports of the Medical Officer of Health during the period 1889-1905.

Table I presents the salient facts of the population of Blackburn from the point of view of the total number of cotton-mill operatives, who were either actually employed in the cotton mills in 1901, or who were retired operatives without other employment.

The above table brings out some very significant facts. It is shown that of the total male population of ages ten and over, 31.2 per cent. were either in the cotton mills or had retired without other employment. The retired male operatives numbered 375, and we therefore have it that about 30 per cent. of the male population of working ages were actively employed in the cotton mills of Blackburn in 1901. Of the total female population of ages ten and over, 42.9 were cotton operatives, active or retired. The number returned as retired operatives was 284, and the number actually in the mills embraced about 41 per cent. of the total female population of ages ten and over. Of the female employees in 1901 3,148, or over 13 per cent. of the total, were either married or widowed. Reference to the table shows that the largest proportion of the population is in the mills at ages 15 to 24. At this period of life 36.4 per cent. of the males, and 68.9 per cent. of the females of Blackburn were in the cotton mills. This fact is significant because this age period and the one following (25 to 34) represent the time of life when consumption is most prevalent, and, generally speaking, the mortality from that disease highest.

Another fact to be noted is the considerable actual number and the relatively large proportion of the total population of ages 10 to 14 who are in the cotton mills. Not only are comparatively large numbers of children of ages 10 to 14 employed in textile factories, but the hours of labor for adults and for many children of ages 13 to 16 are from 6 A.M to 6 P.M., with a Saturday half-day from 6 A.M to 1 P.M. It is only fair to add, however, that applicants for positions in the textile and other mills, of ages 10 to 16 are required to have "certificates of fitness" from certifying surgeons, and practically all of the children of ages 10 to 13 work only half-time.

Table II gives a further analysis of the cotton-mill operatives of Blackburn. The facts brought out are important to keep in mind in any study of the mortality statistics of the operatives as the age, sex, and occupational groupings are of the utmost importance in any comparison of the death rates.

TABLE II.

COTTON-MILL OPERATIVES.

Blackburn, Eng., 1901.

BY AGE, SEX, AND FOUR PRINCIPAL GROUPS OF OCCUPATIONS.

CARD ROOM HANDS.

AGES	NUMBER OF OPERATIVES			PER CENT. AGE DISTRIBUTION		
	Males	Females	Total	Males	Females	Total
10–14.....	41	62	103	7.7	4.4	5.3
15–24.....	151	496	647	28.4	34.8	33.1
25–34.....	123	310	433	23.1	21.8	22.1
35–44.....	100	346	446	18.8	24.3	22.8
45–54.....	72	137	209	13.5	9.6	10.7
55–64.....	29	47	76	5.5	3.3	3.9
65 and over..	16	26	42	3.0	1.8	2.1
10 and over..	532	1,424	1,956	100.0	100.0	100.0

TABLE II.—*Continued.*

SPINNERS

10–14.....	117	48	105	6.2	10.8	7.1
15–24.....	433	222	655	23.0	49.8	28.1
25–34.....	291	125	416	15.5	28.0	17.9
35–44.....	488	34	522	25.9	7.6	22.4
45–54.....	328	12	340	17.4	2.7	14.6
55–64.....	143	3	146	7.6	0.7	6.3
65 and over..	82	2	84	4.4	0.4	3.6
10 and over..	1,882	446	2,328	100.0	100.0	100.0

WINDERS AND WARPERS

10–14.....	279	342	621	17.3	6.7	9.2
15–24.....	400	2,042	2,442	24.8	39.9	36.3
25–34.....	349	1,343	1,692	21.7	26.2	25.1
35–44.....	314	761	1,075	19.5	14.9	16.0
45–54.....	185	411	596	11.5	8.0	8.9
55–64.....	57	154	211	3.6	3.0	3.1
65 and over..	26	67	93	1.6	1.3	1.4
10 and over..	1,610	5,120	6,730	100.0	100.0	100.0

WEAVERS

10–14.....	969	2,138	3,107	11.7	12.6	12.3
15–24.....	2,900	7,313	10,213	35.0	43.1	40.4
25–34.....	1,832	4,370	6,202	22.1	25.7	24.5
35–44.....	1,266	2,128	3,394	15.3	12.5	13.4
45–54.....	708	710	1,418	8.5	4.2	5.6
55–64.....	434	219	653	5.2	1.3	2.6
65 and over..	184	100	284	2.2	0.6	1.2
10 and over..	8,293	16,978	25,271	100.0	100.0	100.0

Extended comment upon the foregoing table is not necessary at this point. In the four specified departments, in which the great majority of the operatives are employed, the total number of employees was 36,285, of which 5.4 per cent. were in the card rooms, 6.4 per cent. in the spinning rooms, 18.6 per cent. in the winding and warping rooms, and 69.6 or more than two-thirds of the total in the weaving sheds. The female operatives outnumbered the males in all departments except spinning, where the males were in excess in about the proportion of 4 to 1. This is due to the strength necessary in mule spinning. In the other departments quickness and deftness are the prime requisites, and female labor is therefore in great demand.

TABLE III.

MORTALITY OF COTTON-MILL OPERATIVES.

Blackburn, Eng., 1889–1905

(ACTUAL NUMBER OF DEATHS)

AGES	Card Room Hands	Spinners	Winders and Warpers	Weavers
ALL CAUSES				
15–24.....	36	64	177	641
25–34.....	44	82	176	470
35–44.....	63	89	154	461
45–54.....	64	120	147	338
55–64.....	33	108	99	409
65 and over...	30	193	144	474
15 and over...	270	656	897	2,793
CONSUMPTION				
15–24.....	10	16	49	185
25–34.....	17	26	65	238
35–44.....	16	24	27	96
45–54.....	10	11	11	41
55–64.....	9	2	3	26
65 and over...	...	2	3	3
15 and over...	62	81	158	589
RESPIRATORY DISEASES				
15–24.....	4	10	27	69
25–34.....	5	20	15	66
35–44.....	11	19	37	89
45–54.....	26	37	39	108
55–64.....	8	44	29	138
65 and over...	11	53	38	121
15 and over...	65	183	185	591

TABLE III.—*Continued.*

Table III shows the actual number of deaths from all causes, consumption and respiratory diseases, among the four principal groups of cotton-mill operatives during the seventeen-year period for which the facts are now available. It will be noted that the deaths when considered by age periods are still comparatively few in number, and this is particularly true as regards card room hands, spinners, and winders, and warpers, when the mortality from consumption and respiratory diseases is considered. The mortality is large enough, however, to be of some value for these groups of employees. The paucity of these data for card room hands and spinners emphasizes the need of similar statistics for such towns as Bolton and Oldham, where cotton spinning and the preliminary processes are the all-important branches of the cotton industry, just as weaving is the specialty in Blackburn.

Table IV shows the comparative mortality rates of carders, spinners, winders and warpers, and weavers, from all causes, from consumption, and from respiratory diseases, with distinction of age. The mortality returns are limited to ages 15 and over and it is therefore impossible to calculate the rates for ages 10-14 in the tables which follow. The census returns of 1891 were applied to the deaths from 1889 to 1897, and the census returns of 1901 were applied to the deaths from 1898 to 1905.

TABLE IV.

COMPARATIVE MORTALITY RATES OF COTTON-MILL OPERATIVES.

Blackburn, Eng., 1889-1905.

(RATES PER 1,000 EMPLOYEES OF SPECIFIED AGES.)

AGES	Card Room Hands	Spinners	Winders and Warpers	Weavers	All Occupied Males, Eng. & Wales, 1890–92
ALL CAUSES					
15–24.....	3.7	5.3	4.4	3.7	5.0
25–34.....	5.1	7.7	6.4	4.8	7.3
35–44.....	9.2	10.3	9.4	9.1	12.4
45–54.....	19.2	25.7	17.8	14.9	20.7
55–64.....	29.2	43.7	33.5	44.7	36.7
65 and over....	66.2	177.7	124.4	139.5	102.3
CONSUMPTION					
15–24.....	1.0	1.3	1.2	1.1	1.3
25–34.....	2.0	2.5	2.4	2.4	2.6
35–44.....	2.3	2.8	1.7	1.9	3.4
45–54.....	3.0	2.4	1.3	1.8	3.4
55–64.....	8.0	0.8	1.0	2.8	2.7
65 and over.....		1.8	2.6	0.9	1.5
RESPIRATORY DISEASES					
15–24.....	0.4	0.8	0.7	0.4	0.4
25–34.....	0.6	1.0	0.5	0.7	1.1
35–44.....	1.6	2.2	2.3	1.8	2.5
45–54.....	7.8	7.0	4.7	4.8	5.2
55–64.....	7.1	17.8	0.8	15.1	10.3
65 and over....	24.3	48.8	32.8	35.6	25.0

The final column in the above table is inserted for comparison, principally with spinners, the larger proportion of whom are males. The rates taken together are in many respects suggestive of the very different conditions which exist in the various departments of the cotton cloth manufacture. Contrary to what might have been expected, the death rates from all causes and also from consumption and respiratory diseases, except at the higher ages, are comparatively low among the card room hands. The rates do not appear to be in excess of those for spinners, winders and warpers, and weavers at ages under thirty-five, but the mortality from consumption among card hands is excessive at ages thirty-five and over as compared with the rates for winders and warpers, and weavers.

Spinners are subject to a high mortality from consumption and respiratory diseases at ages over thirty-five as compared with winders and warper and weavers, and their mortality is also excessive as compared with all occupied males in England and Wales.

Weavers have a comparatively favorable mortality, and winders and warpers share this favorable showing. This comparatively good showing, particularly at the higher ages, is probably in part to be explained by the fact that some of the married female operatives who retire because of illness are reported as housewives when they finally die. This reason has been suggested in the reports of the Medical Officer of Health, and it seems to be supported by the fact that the female weavers have a much lower mortality at certain ages than male weavers. This point, however, will be considered at length in the proper place.

Table V presents a comparison of the mortality of the four principal groups of cotton-mill operatives, from consumption and respiratory diseases. The last column gives the similar percentages for the white population of the Registration Area of the United States as reported in the Census of 1900.

TABLE V

COMPARATIVE MORTALITY OF COTTON-MILL OPERATIVES.

Blackburn, Eng., 1889-1905.

PERCENTAGE OF THE TOTAL MORTALITY DUE TO CONSUMPTION AND RESPIRATORY DISEASES.

Ages	Card Room Hands	Spinners	Winders and Warpers	Weavers	Registration Record, U. S. Cen. 1900
CONSUMPTION					
15–24	27.8	25.0	27.7	28.9	30.9
25–34	38.6	31.7	36.9	50.6	32.4
35–44	25.4	27.0	17.5	20.8	22.6
45–54	15.6	9.2	7.5	12.1	13.3
55–64	27.3	1.9	3.0	6.4	7.6
65 and over		1.0	2.1	0.6	2.9
RESPIRATORY DISEASES					
15–24	11.1	15.6	15.3	10.8	9.5
25–34	11.4	24.4	8.5	14.0	10.4
35–44	17.5	21.3	24.0	19.3	12.2
45–54	40.6	38.8	26.5	32.0	13.4
55–64	24.2	19.7	29.3	33.7	14.6
65 and over	30.7	27.5	26.4	25.5	14.7

The foregoing table shows that consumption is by far the most important cause of death among weavers and particularly of ages 15 to 44, when the largest numbers are engaged at this occupation (See Table II). It is a more important factor in the mortality of card room hands than in the mortality of spinners. This fact may be due to the very different sex distribution, for the mortality from consumption among the females may be relatively higher than among the males, and the great majority of the card room hands are females, while the males predominate among the spinners (See Table II). This point cannot be definitely settled until distinction is made of sex in the mortality returns.

Table VI presents the comparative mortality rates of the cotton operatives of Blackburn, with a view to determine if there has been any noticeable improvement in 1898-1905 as compared with 1889-1897. The period 1889-1897 represents the time that the Cotton Cloth Factories Act of 1889 was in force, and 1898-1905 represents the time that the Act of 1897 has been in effect.

TABLE VI

COMPARATIVE MORTALITY RATES, COTTON-MILL OPERATIVES.

Blackburn, Eng., 1889-97 and 1898-1905.

(RATES PER 1,000 EMPLOYEES OF SPECIFIED AGES.)

CARD ROOM HANDS

Ages	All Causes		Consumption		Respiratory Diseases	
	'89-'97	'98-'05	'89-'97	'98-'05	'89-'97	'98-'05
15–24	4.7	2.7	1.5	0.6	0.2	0.6
25–34	6.5	2.9	2.1	1.7	0.8	0.3
35–44	13.0	5.9	3.9	1.7	2.4	0.8
45–54	21.7	16.7	4.2	1.8	10.3	5.4
55–64	47.6	13.2	15.3	1.6	11.5	3.3
65 and over	10.6	2.8			68.4	8.9

SPINNERS

Ages	All Causes		Consumption		Respiratory Diseases	
	'89-'97	'98-'05	'89-'97	'98-'05	'89-'97	'98-'05
15–24	6.8	3.2	2.0	0.4	1.0	0.6
25–34	7.3	8.7	2.8	1.8	2.2	1.2
35–44	12.5	7.9	2.9	2.6	3.1	1.2
45–54	32.4	21.0	2.6	2.2	13.4	4.0
55–64	51.3	35.1		1.7	26.8	7.7
65 and over.	244.0	136.9	4.8		72.5	34.2

WINDERS AND WARPERS

Ages	All Causes		Consumption		Respiratory Diseases	
	'89-'97	'98-'05	'89-'97	'98-'05	'89-'97	'98-'05
15–24	5.2	3.7	1.5	1.0	0.7	0.6
25–34	8.2	4.7	3.3	1.4	0.6	0.5
35–44	11.3	7.7	2.1	1.3	3.0	1.6
45–54	22.4	14.5	1.1	1.5	7.5	2.7
55–64	43.3	26.1	1.6	0.6	13.4	7.1
65 and over..	195.7	84.7	7.2		53.1	21.5

WEAVERS

Ages	All Causes		Consumption		Respiratory Diseases	
	'89-'97	'98-'05	'89-'97	'98-'05	'89-'97	'98-'05
15–24	4.3	3.2	1.2	1.0	0.5	0.3
25–34	5.2	4.3	1.7	3.1	0.9	0.5
35–44	10.3	8.0	1.9	1.9	2.5	1.1
45–54	15.0	14.9	1.7	1.9	5.1	4.4
55–64	57.6	35.5	3.8	2.1	20.4	11.1
65 and over..	189.3	114.9		1.3	60.4	22.8

A careful study of the preceding table will show that the mortality rates indicate a decided improvement in the health and longevity of the cotton operatives of Blackburn, in recent years. This

improvement is noticeable in all four of the principal departments of the cotton cloth manufacture. Curiously enough one of the most important exceptions to the general rule is found in the mortality from consumption among weavers of ages 25 to 34. At this age period there seems to have been an increase in the mortality from consumption, although there was a marked decline in the mortality from respiratory diseases and also from all causes. Some of the apparent discrepancies may be due to the possibly defective census returns and to the fact, previously noted, that the mortality returns of female operatives are more likely to be deficient than are those of males. At ages 55-64 and 65 and over the comparison is of least value because of the disturbing element of the retired operatives. These are included in the deaths, but in 1891 the trade census of Blackburn apparently did not include the retired operatives. As few operatives retire below the age of 55 the rates are fairly comparable at the earlier ages, but at ages over 55 the rates for the period 1889-97 are too high. The retired operatives are included in the census returns of 1901, upon which the rates for 1898-'05 are based.

That the Cotton Cloth Factories Acts of 1889 and 1897, now incorporated in the Factory and Workshops Act (1901), have been extremely beneficial, seems to be clearly demonstrated by the mortality returns of Blackburn. This legislation has affected Blackburn in a very peculiar manner as 382 of the 870 humid cotton factories of the United Kingdom were in the Blackburn district according to the 1903 returns. The Factory Inspector is emphatic in his statements of the improvements effected in the factories as the result of legislation beginning with 1889, but particularly since 1898. Numerous tests have shown that the respiratory impurity of the air in artificially moistened weaving sheds has been reduced on the average 50 per cent. and in several instances about 70 per cent. As this requirement for better ventilation alone affects upwards of 16,000 employees in Blackburn, its importance is readily seen. The following statement by Mr. W. Williams, H. M. Factory Inspector, made in 1901, is of interest in this connection. "Formerly (previous to 1898) it was the practice, during a considerable portion of the year, to exclude, as far as possible, fresh air from cotton weaving sheds on the ground that air 'unconditioned' (that is, not moistened or warmed) would be detrimental to the process of weaving. Now, owing to some extent to various improvements in the means of ventilating and 'conditioning' sheds, it is found possible to maintain a considerable flow of fresh air, not merely without injury, but in many cases even with positive advantage to the process, and there are sheds in Lancashire in which the operatives are supplied with fresh air to an amount equal to fully 4,000 cubic feet per head per hour."

The violations of the law are still relatively numerous, and as recently as 1903 569 instances of excessive humidity in cotton weaving sheds were reported. The leading manufacturers, however, are gradually awakening to the fact that the prevention of sickness among their employees is a real economic gain. Some of the larger employers have gone much farther in the direction of sanitary improvements than the law requires. The managers in these factories state that the improvements have not only reduced sickness but have improved the output as well.

In his report for 1900, the Inspector of Cotton Factories stated that "Experience shows that improved health conditions almost invariably lead to better work, and, looking at the matter purely from a commercial point of view, justification can generally be found for expenditure which leads to greater vigor on the part of workers." . . . "Opposition to the sanitary improvements required by law is, I think, becoming more and more discredited by the leading employers. Judging from the observations of managers and others there has already been a marked reduction in sickness in many of the sheds in which improved ventilating arrangements have been installed, and it is fair to assume that the full effects of fresher air have not yet had time to show themselves."

Although the larger portion of the legal requirements have thus far been directed to the improvement of conditions in the weaving sheds, some of the measures affect directly other parts of the mill, and all are reflected with more or less beneficial effect upon the other departments. With the introduction of one improvement others have been suggested, and while ventilation has thus far occupied most attention, temperature, humidity, cloak rooms, sanitary conveniences, etc., have all been given more or less consideration. In 1899 the Medical Officer of Health of Blackburn reported that "The health conditions under which cotton operatives work are improving rapidly." The Factory Inspector reported in 1904 that "considerable attention is being paid to the question of ventilating and humidifying spinning mills, and in some instances very great improvements have been effected."

Another factor of some importance is the gradual replacement of the old-fashioned method of gas lighting either by the installation of more modern burners, or by the substitution of electricity for gas. This means purer air in the various departments, especially in winter.

Much yet remains to be done, because many improvements are still readily possible, in the cotton mills of Blackburn, and England generally. The air in many of the rooms, not specifically covered by the Acts of 1889 and 1897, particularly in the spinning rooms, is still badly vitiated, as the reports of the Inspectors clearly show, but a large beginning has been made in the general hygienic and sanitary improvement of conditions under which cotton-mill operators labor, and the effect is already so marked as to be noticeable in the improved appearance of the workers, in their improved capacity, in the reduction of sickness and as here shown in the lower general mortality, and also in the lessened liability to consumption and respiratory diseases. It is fair to assume that the employers of their own volition will do still more than they have already done, or than the law requires, to make the conditions of work life as healthful and pleasant as may be readily possible.

TABLE VII

COMPARATIVE MORTALITY OF MALE AND FEMALE WEAVERS.

Blackburn, Eng., 1889-1905.

(RATES PER 1,000 EMPLOYEES OF SPECIFIED AGES.)

AGES	MALES		FEMALES	
	1889-'95	1896-'05	1889-'95	1896-'05
15–24.....	6.1	3.9	3.3	2.8
25–34.....	6.6	5.1	5.6	3.9
35–44.....	13.3	9.1	9.4	7.0
45–54.....	18.6	19.4	8.6	9.0
55–64.....	71.6	39.4	27.4	26.0
65 and over...	196.3	155.4	145.8	52.3

Table VII presents the comparative mortality of

weavers for the two periods 1889-1895 and 1896-1905, with distinction of sex. The rates are presented as found in the reports of the Medical Officer of Health for 1895 and 1905.

The above table shows a marked decline in the mortality of both male and female weavers except at ages 45 to 54, where there was a slight increase. This may be the effect of the lengthening of life at the younger ages. Those who formerly would have died at ages 35 to 44, may conceivably have lived a few years longer under improved conditions, only to die at ages 45 to 54, as the result of constitutions impaired beyond full recovery by the conditions previous to 1898 or even 1889. Another fact of significance is the lower mortality of female weavers at all ages. The Medical Officer of Health thinks this may be explained in part by the fact that female operatives are not as likely to be fully reported by the registrars as male operatives, particularly if the operatives are wives. It would be extremely interesting and perhaps suggestive if comparisons by sex were possible in the other branches of the cotton industry and by principal causes of death.

In conclusion we may say that the mortality returns of Blackburn deserve fuller notice in this country than they have thus far obtained. There are numerous localities in the United States where industries more or less inimical to health and longevity are centered. If the local health authorities of such trade communities were to profit by this example, their efforts would undoubtedly ultimately conduce to the benefit of both employers and employees, and therefore to the public generally.

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THE PUERPERAL TYPES OF SEPSIS.*

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THE discussion of the puerperal types of sepsis in connection with those seen in general medicine and surgery offers some advantages over the ordinary custom of considering them as peculiar to the puerperal state. In such a discussion as is proposed to-night, a comparison of all the different types ought to be carried along such lines as will simplify their classification.

Before taking up in detail the types seen in the puerperium, it is important to present a few facts regarding their special relations, as, differing from general surgical sepsis, the morbidity and mortality in private practice is just as high to-day as when Holmes and Semmelweis first taught us it was largely a preventable disease. The causes for this disappointing fact are related to both the attendant and the patient.

Such as relate to the attendant do not properly concern us at this time, but no opportunity should be lost of mentioning the following conditions: First, every beginner in medicine practises obstetrics, except those who are best fitted for such work, namely, the general surgeons, who rarely direct their attention to this part of the anatomy until a tumor or a prospective hysterectomy first arouses in them an appreciation of the opportunity to begin their surgical career. Secondly, and consequent upon the first condition, we are confronted with the general lack of ability to apply the principles of surgical cleanliness to obstetrics due largely to the confusion incident to the details required in the use of numerous unnecessary and harmful chemical poisons. Thirdly, the lack of preparation and of assistants for the performance of obstetrical operations makes good technique impossible.

As regards the patient and her pelvic organs, a few preliminary considerations are necessary for a correct appreciation of the regular types. The obstetrical wound is always under conditions that are incomparable to those treated by the general surgeon. To the marked congestion and increased size of the blood-vessels, always favorable for the spread of infection, there is added an excessive development of the lymphatics which Schick[1] in Leopold's clinic has recently demonstrated to be present even in the decidua, especially in the spongy layer near its juncture with the compact layer where the natural line of cleavage occurs when the uterine contents are expelled. To offset these unfavorable conditions, it may be rightfully argued that the increased metabolic activity of pregnancy should offer distinct advantages in the greater ability to eliminate poisons that may be accidentally introduced. Recent study of pregnancy, however, has shown that pathological disturbances in this metabolism are very common, and undoubtedly often furnish favorable soil for the occurrence of infection. Of 27 fatal cases of eclampsia, for example, reported by Schreiber[2] in Chrobak's clinic, 7 died from sepsis.

The gonococcus is such a frequent inhabitant of the female genitals that a knowledge of its relations in the puerperium is a preliminary essential to the consideration of the regular types. We find that it spreads in the same way as under other conditions, namely, by direct continuity of mucous membrane, the puerperal state simply furnishing conditions that are more favorable for its rapid spread, the result of which is the frequent occurrence of salpingitis. While its clinical manifestations are usually those of a mild toxemia, cases with a fatal termination are occasionally reported. A fact of the greatest importance is that this infection is practically the only one that permanently disables the pelvic organs, being practically the only cause for a chronic salpingitis, particularly that form designated as pyosalpinx. Whether the gonococcus furnishes favorable soil for the growth of other bacteria is a question not yet decided. Conclusions from the laboratory would lead us to believe that it does not. Its presence in conjunction with a severe form of streptococcus infection has been reported by the writer in a previous paper.

The relations of the colon bacillus are important.

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being the active agent in not a few fatal cases. Apart from its introduction from without by reason of the proximity of the anus to the external genitals, it probably has at times the same internal relations to puerperal infection that it has to appendicitis or cholicystitis. The type from this agent is usually that of an acute general peritonitis.

It can no longer be doubted that puerperal infection may be the result of the transference through the blood from foci in distant parts of the body. A very recent paper by Hallendall,[3] in Doederlein's clinic, shows that the contents of the intact amniotic sac can be infected in this way.

Finally, an important factor that must be included is the normal bacterial relations of the genital organs. The laboratory has led us through a wilderness of positives and negatives, the present conclusions from which are that, at least occasionally, the genital organs contain streptococci which the skilled bacteriologist cannot differentiate in any way from the streptococci known to be actively pathogenic. The doctrine of autoinfection must then be maintained to account for a very few cases, in which the conditions enumerated above may furnish some excuse.

While bacteriology has been of the greatest value in definitely showing that almost all of the severe puerperal infections are due to the introduction from without of the streptococcus, or much less frequently of the staphylococcus, it is of little practical value at the present time in diagnosis and treatment. Pathological anatomy, however, is of the greatest assistance, and if sufficiently studied, will accurately guide us to definite clinical types, which are comparable to those seen in general medicine and surgery.

They are best divided into the toxemias and general infections.

As toxemias are included (1) those the result of absorption of the putrefactive products of saprophytic bacteria, and (2) those the result of absorption of the products of pathogenic bacteria.

Toxemia from putrefactive changes represent, fortunately, the largest number of cases of fever in the puerperium. The fever may be high or low, usually first appearing in the latter part of the first week, frequently in the second week, rarely in the first few days; ordinarily lasting three or four days, and accompanied by a foul discharge, due to the retention of gestation products, blood clots, and lochia. It is the type that always gets well with or without treatment. If not treated, it is a frequent cause of subinvolution and uterine displacement; if treated without proper aseptic precautions, it is a frequent cause of serious general infection. A dose of castor oil, by clearing out the bowels and allowing the uterus to contract and assume its normal position, is often very efficient and a much safer therapeutic agent than an intrauterine douche nozzle or curette. This type is closely simulated by a gonococcus endometritis, and, if the latter be present, a curettage will almost surely be followed by a salpingitis.

The toxemias from products of pathogenic bacteria are very frequent. They may, perhaps, be better designated as toxemias from local infection; and even this may be objectionable, as in some instances bacteria may be present in the blood. They are not as a rule, however, and it is important to distinguish them clinically from the types to be described later. They are comparable to the cases of appendicitis that remain localized with or without abscess formation, and are characterized by the presence of an infected wound of the perineum, vagina, cervix, or placental site, or by the presence of a cellulitis which may or may not terminate in an abscess. Fever, preceded or not by a chill, beginning usually in the latter part of the first week, is high. The pulse is rapid, full, and strong. Pelvic pain may be severe, depending upon the character of the lesion. The presence of an infected wound in the lower genitals, of an abnormal discharge, if situated at the placental site, or a hard tumor if a cellulitis is present, with an entire absence of signs of peritoneal irritation, makes the diagnosis and even the prognosis practically certain, as all cases of this type get well, even if neglected. If an abscess forms and is not opened, it will follow along the cellular tissue and eventually open above Poupart's ligament, or the crest of the ilium or rupture into the vagina, bladder, or rectum. Many of these cases are severely sick for weeks and months if improperly treated at the beginning of the disease. It is the type in which unguentum Credè, various sera, and intravenous infusions have worked their apparent cures. An ice-bag, cleansing of the wounds with salt solution, prompt incision and drainage of abscesses, combined with proper hygienic and dietetic treatment, are, however, more efficient. This type not only recovers from the acute illness, but the lesions in the pelvis completely disappear, unless a gonococcus infection causes a salpingitis, either in the form of thickened tubes that are adherent in the posterior cul-de-sac to a retroverted uterus, or, as a pyosalpinx, finally renders them chronic invalids. An endosalpingitis, in other words, is not a lesion unless the gonococcus is present. If a laparotomy be performed through an error of judgment, the tubes will be found buried in an exudate upon the posterior surface of the thickened broad ligament. Their walls will be thickened from edema, but not containing pus, except, perhaps, a little near their outer ends. Removal of the tubes will be followed by recovery just the same as it would if the operation had not been performed. The subsequent course of these cases is interesting. Six months or a year afterward they will still be found trying to escape from the efforts of some surgeon to relieve them of a slowly disappearing exudate, or of an ovary enlarged from congestion that is often kept up by too protracted local treatment. Such cases more properly belong to the medical adviser. They have headaches, irregular and intermittent heart, backache, and are extremely nervous, which, with proper general treatment, eventually disappear. All of the other types belong to the general infections, which include three general varieties:

(1) The type commonly called phlegmasia alba dolens, usually appearing first in the second or third week, or even later, is due to the spread of the infection through hypogastric and external iliac veins into the femoral, causing a thrombo-phlebitis. Its clinical cause is so well understood that it need not detain us at this time.

(2) The types, generally known as septicemia, pyemia, or septicopyemia, designated by Boldt as acute and chronic bacteriemia, is the form of general sepsis most often seen by the writer, although in the report of the pathological findings of fatal cases at Sloane, recently reported by Dorman, the peritoneal type was the most frequent. They usually begin early, but, if late, almost invariably terminate as pyemia. The clinical course is so well known that I will only emphasize some of the more important points. From a practical obstetric standpoint the chief characteristic of this type is the entire absence of physical signs in the pelvis, so that many attendants still persist, especially if symptoms begin late, in ascribing them to some other cause. It is

literally a blood poisoning from the beginning, the veins being filled with bacteria, and septic thrombi may be present in all parts of the body. It is the form of the disease in which all of the therapeutic measures apparently so efficacious in the second type utterly fail; the type in which intrauterine treatment is not only a source of torment, but is also harmful; the kind in which a hysterectomy, to be successful, would have to be performed before symptoms appeared. The anatomical findings in the pelvis depend upon the duration of the disease. If the duration has been short a grumous focus may be seen at the placental site; the blood-vessels in the uterine wall and broad ligaments may be dilated, and pus may be seen oozing from the cut section. If of long duration there may be no gross appearances, the uterus even being fairly well involuted. This type is best treated medically, it being less of a surgical disease than typhoid fever. Occasionally a case of this sort recovers even when streptococci have been demonstrated to be present in the general circulation. It has occurred to the writer that baths might be used in this type of case in the same way that they are used in typhoid fever. The gonococcus occasionally follows this type, causing endocarditis and septic emboli.

(3) The peritoneal type, almost invariably fatal under the present treatment, is the one that has always most interested the writer, because it has seemed that a close study of the pathological findings would show that surgical measures might be of value. These cases seem to be analogous to the rapid and severe cases of appendicitis. They invariably begin early in the puerperium, often within a few hours after labor has terminated. There are two varieties—one, perhaps best called peritoneal sepsis, in which the peritoneum is not reddened; it may even look paler than normal. Few fibrinous flakes are seen even in the region of the pelvis. There is, however a considerable quantity of thin seropurulent fluid, which may be only slightly turbid. The pelvic organs show only a dilatation of the vessels, especially the lymphatics, which microscopically may be found to contain pus. All of the classical symptoms of peritonitis rapidly appear, and the patient succumbs, apparently overwhelmed by some intense poison. The other variety, less rapid in its course, offers an opportunity, if seen early by the consultant, to better watch the course, and possibly apply some effective surgical measures. They may be confused at first with some of the varieties described under the toxemias from local infection, but the signs of peritoneal irritation are soon manifested by the character of the temperature and pulse, and by the local signs—rigidity, local pain, and tenderness, which do not rapidly yield to the application of the ice-bag. Even if the infection has become general, opening the abdomen and washing out the peritoneal cavity seems to be indicated just as much as with a general peritonitis from appendicitis. The pathological anatomy, as the writer has found it in these cases, justifies such conclusions. The abdomen will be found to be filled with a large quantity of yellow pus and a fibrinous exudate is seen everywhere, especially in the region of the pelvis, near the ovaries and outer ends of the tubes, which are swollen and frequently contain pus in their outer third. Miliary abscesses may be present in the uterine wall. The vessels, especially the lymphatics, may contain pus which in the broad ligaments may be seen as channels of pus running upward and outward to the region of the ovaries. These cases are the only kind in which a hysterectomy with the removal of as much of the broad ligaments as possible is indicated. The peritoneal form also represents the type which the severe form of gonococcus infection usually assumes.

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41 West Seventy-first Street

A STUDY OF SEVENTY CASES OF BRAIN TUMOR.*

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The study of the interesting subject of brain tumors is one which at the present time is attracting medical investigation, as shown by the frequently reported histories of individual cases. It is evident that, however valuable these histories may be in themselves, it is only by collecting the facts furnished by a large number of cases that we can form a substantial basis for a study of the problems arising in the various questions at issue in such cases; and I have the pleasure to lay before you to-night the facts furnished by seventy cases which have come under my care in the Kings County and Brooklyn Eye and Ear Hospitals, in their relation to the various general facts, which medical science has established concerning these neoplasms. Tumors of the brain are unquestionably one of the common diseases with which both the neurologist and general practitioner have to deal, and from the increasing frequency with which the diagnosis of this condition is made, it is a fair assumption that these tumors are, like similar growths in other parts of the body, becoming more frequent. But, on the other hand, it must be admitted that, as in other conditions, this increase is more apparent than real, from the fact that the advancement in medical science has rendered us more competent to diagnose the nature of the disease from which the patient is suffering. That tumors of the brain occur at all ages is supported by the facts furnished by my cases, as the extreme limits of age in them was six months and seventy-two years. Viewed by decades the frequency of occurrence was: in the first decade nine cases, in the second ten, in the third thirteen, in the fourth eighteen, in the fifth eleven, in the sixth six, in the seventh two, and in the eighth one. The ages of my cases then support the general fact that these growths are most common between twenty and fifty, less common between birth and twenty, and least common after fifty. This greater frequency during middle life is in part due to the greater frequency of the occurrence of syphilitic tumors during that period as one of the manifestations of active syphilis. In early and late life syphilitic infection is much less common than during the period mentioned; and the fact that syphilitic cerebral tumors are never hereditary, according to Starr, explains the rarity of syphilitic tumors in children.

The fact stated by all medical writers that brain tumors are more common in males than in females is well supported by the evidence furnished by my cases, as forty-one occurred in males and twenty-nine in females.

*Read before the Medical Association of the Greater City of New York, May 14, 1906.

As to the real cause for the occurrence of most of the tumors found in the brain, medical science is as ignorant to-day as it is regarding the etiology of growths in other parts of the body. This fact is supported by the evidence furnished by my cases, as fifty-three of them occurred without known cause. In only one class of tumors can we say with certainty as to the real cause; that is, those due to bacterial or parasitic infection. From a study of these growths, however, it seems probable from the facts in evidence that some of the other forms may also be due to the presence of organisms. Of my own cases five were shown to be tuberculous and six occurred during active syphilis, and recovered under specific treatment. It must not, however, be assumed as a fact that, because a brain tumor improves under such treatment, it is necessarily syphilitic, for it is a well-founded fact that other forms of brain tumor, especially sarcoma, may at times be favorably influenced by the administration of potassium iodide. Two others were also shown to be specific at the autopsy at operation. Heredity is claimed by some as a producing cause for brain tumor, and in my own cases one patient had a father who suffered from cerebral carcinoma, and another a sister who died from a brain tumor. The number of such cases is, however, so small that from the facts in evidence the writer is inclined to believe that such a history is a coincidence, or only an evidence of some physical predisposition which renders the patient susceptible to the action of some other cause.

Injuries to the head are assigned by medical writers as one of the causes for cerebral tumors, but upon examination this theory is found to rest upon no substantial basis of fact, for it appears that no one has been able to show the methods by which a trauma produced such a result, that the vast majority of brain tumors occur without such a producing cause, that the vast majority of head injuries are not followed by such tumors, one only being claimed in three thousand cases of head injury in the writer's experience, and that all that can be claimed at the present time in support of this theory is that the injury called attention to or aggravated the course of a preexisting growth. This opinion is supported by Starr, who points out the fact that tumors, especially glioma, may develop symptoms suddenly after a blow from the occurrence of hemorrhage suddenly increasing its pressure effects, as was the case in one of the writer's cases. Three other cases in which trauma was claimed as a cause, and in which the growth developed slowly after an injury to the head, have come under my care. One was a large tuberculous cyst, occupying nearly the entire cerebral hemisphere, and could not have occurred in the short time which elapsed between the injury and the death of the patient. The second was found to be well developed one month after the injury, and at the autopsy was shown to be secondary to an unsuspected pulmonary cancer. In the third, a period of seven years elapsed without connecting symptoms before the development of the growth. The situation is further complicated by the well-established fact that a localized meningitis may at times present a clinical picture indistinguishable from cerebral tumor.

The only fact, then, that can be claimed to be proven in this case at the present time is that a cerebral injury may aggravate the growth of a tumor of the brain.

As the value of medical science depends entirely upon its power to relieve human suffering, it is evident that the nature of the disease should be recognized as early as possible, and before irreparable damage is done. Although it is often easy enough to diagnose a brain tumor in cases in which the clinical picture is fully developed, the early symptoms, and often the whole course of the disease, may be such as to make the diagnosis difficult or impossible. In the early stages of the development of a tumor we often find its symptoms simulating severe anemia, chronic nephritis, lead poisoning, and even locomotor ataxia; while in the more developed cases the picture may be that of cerebral hemorrhage, cerebral abscess, or tuberculous meningitis; and it is not uncommon to find tumors giving the clinical picture of general paresis, or even hysteria. The early diagnosis of brain tumors, as in other conditions, is often not made from the fact that the patient pays but little attention to the early symptoms, and does not seek relief until the appearance of some disabling condition.

As the diagnosis of a brain tumor can only be made by the combination and the order of the development of the symptoms (Starr), we find the problem then complicated by the fact that the early symptoms are often subjective and frequently referred to other conditions; that the earliest manifestations may be monosymptomatic and a correct diagnosis for a time impossible; that tumors, especially tuberculous, may give no symptoms whatever, even in situations where such tumors should do so, and then do so suddenly from the occurrence of hemorrhage in or about the tumor; and that brain tumors may simulate other cerebral diseases. This seeming anomaly of the absence of symptoms is explained by the fact that the brain can accommodate itself to pressure if produced gradually, and that tumors which grow slowly, and do not infiltrate, may thus reach a considerable size before definite symptoms occur.

Assuming, then, these sources of error, it is unfortunate that the slow and regular development of headache, vertigo, projectile vomiting, nausea, general convulsions, mental apathy, optic neuritis followed by loss of vision, insomnia, attacks of syncope, and changes in the pulse as general symptoms, with localized spasms, monoplegias, hemiplegia, anesthesia of one or more limbs; changes in the reflexes, pupils, and visual fields, ataxia and paralysis of the cranial nerves, to guide us as to the location of the growth, do not occur in the majority of the cases. This fact is well supported by the evidence furnished by my cases, as such a history is to be found in but eighteen of them. In these cases the average time for the symptoms to attain such a degree of development for the patients to seek medical aid varied from two months to ten years; but only three were of over three years' duration, these being of four, five, and ten years' standing. Of the remaining, five had existed two years, four one year, and six from three to eight months. That tumors of the brain are, as a rule, slow in their development, is supported by the evidence furnished by my cases, as such was the history in sixty-two. In the remaining eight the duration was from two to eight weeks. Four of these were undoubtedly syphilitic, and this rapid development supports the well-established law concerning the development of syphilitic cerebral neoplasms.

The fact of the importance of early recognition of these tumors having been established, the study of the initial symptoms becomes imperative. The fact that the mode of invasion may differ in the different cases is well supported by my cases.

Convulsive seizures was the most prominent early symptom in twenty of my cases. The form of the seizure naturally divides them into three classes: In the first class, the convulsions resembled those of the general epileptic or grand-mal type, and of all

the modes of development of brain tumors this clinical picture has been the commonest source of error in the early diagnosis. For, as is well established, both by the experience of others and the evidence presented by my cases, these convulsions may exist for some years before the development of the other symptoms of brain tumor; and even when headache, vertigo, and loss of vision develop, their significance is not always recognized. Twelve of these twenty cases were of this type, and their duration, before the real nature of the disease was recognized, varied from four months to ten years. It is to be noted that two of these cases differed from the classical picture of idiopathic epilepsy in the brief duration of the coma; that in three an aura consisting of local tonic spasm occurred, and in five a local paresthesia.

Cases of the second class, in which the symptoms are of the petit-mal type, are much less common, as is also shown by my cases, for only two were of this kind, and in both the development of other symptoms led to an earlier recognition of the existence of a tumor than in the grand-mal type, for their duration was only two and six months.

The third class is that in which the attacks consist of localized spasm without loss of consciousness, this spasm gradually increasing in extent; and if it thus becomes general, it is accompanied by loss of consciousness. This Jacksonian form was found in six of my cases. In these cases, such positive evidence of local cortical disease, combined with the fact that the disease is extending, should cause an early recognition of the nature of the disease. This is fortunate, as in no class of brain tumors is surgical relief so certain. The duration in my cases varied from three months to six years, three lasting less than one year.

Next to convulsive disorders defective vision was the most common early symptom for which the patient sought relief, and from the established fact that neuroretinitis occurs in 80 per cent. of all brain tumors, one would suppose that it would be even a more common early symptom; but it is also a well-established fact that a high degree of such neuroretinitis may occur before the patient notices the visual defect. The actual loss of vision is frequently confined to some one part of one or both retinæ. With this loss of vision in my cases there was also associated the usual symptoms of a brain tumor whose significance was not recognized. The duration of the disease in my cases varied from ten days to three years, eight being of less than three months' duration. Of the nine cases the development of the loss of vision was sudden in four, probably due to the occurrence of hemorrhage.

Severe headache, associated with nausea, vomiting, and vertigo was the early clinical picture in four cases for a period varying from three months to one year, and during this period the real nature of the disease was a matter of doubt.

In three cases an ataxic gait, with increased knee-jerks and vertigo, existed for a period of three years before the development of other symptoms. In three cases the first symptom was the slow development of a hemiplegia during a period of from one to three years. In two cases a subjective vertigo existed alone for a period of three and eight months.

In four of my cases the real nature of the disease was not recognized during life, and was only discovered at the autopsy, the diagnosis having been paretic dementia, chronic dementia, and two large tuberculous tumors gave the history and clinical picture of major hysteria.

Three other cases not included in this list were diagnosed as brain tumor, but were found on operation to be cases of localized meningitis.

The advancement in the localization of cerebral disease has been so great that at the present time we can speak with reasonable probability as to the location of the disease, but not with absolute certainty, for reasons already in evidence, and from the fact that tumors may cause misleading symptoms by pressure on adjacent tracts or by disturbing the circulation. In my own cases six were not localized, six were considered as cerebellar, five in or about the pons, seventeen in the motor cortical region, six as tumors of the base, seven of the basilar ganglia, and eighteen as subcortical. In four the localization was found to be incorrect, either at the autopsy or on surgical operation.

The nature of a brain tumor is, during life, unless the case comes to operation, merely speculative. It is a reasonable probability in patients suffering from a malignant tumor in some other part of the body, that a subsequent brain tumor is of the same nature, and also, when the patients are suffering from tuberculous deposits in other parts, that it is tuberculous—but in my own cases such evidence was absent. This supports the fact that tuberculous brain tumors are, as a rule, primary. The existence of a syphilitic infection is, as a rule, competent evidence as to the nature of the tumor, but it is not conclusive, as a syphilitic may suffer from tumors of other kinds, as was the fact in two of my cases.

In my own cases the nature of the tumor was determined in fifty-two. This list includes eleven syphilitic patients who recovered under specific treatment. Of the others nine were glioma, fourteen sarcoma, seven tuberculous, four cystic, one angioma, and one psammoma.

The results obtained by treatment in my cases may be tabulated as follows: fourteen recovered under medicinal treatment, nineteen were improved by surgical means, thirteen died, twenty-six passed from observation as unimproved, and eight are still under observation. The only drugs which are known to influence favorably the growth of a tumor are potassium iodide, mercury, and arsenic. The results obtained in my cases are as follows:

Under the administration of potassium iodide in from ten to fifteen-grain doses, seven made a complete recovery in from two to four months. In four of these cases there was an old and obscure syphilitic history. In the others no such history was in evidence. These are classed as syphilitic, but for reasons already in evidence the fact cannot be claimed as proven. Six of my patients recovered in from two to three months under the use of mercury, followed by the iodide. In all, there was evidence of recent syphilis. In my own experience, no form of administration of mercury has given such good results as the mercurial inunction. One case improved markedly under the use of Fowler's solution, and passed from under observation after a period of six months.

Tumors of the brain which do not rapidly show some improvement from medicinal treatment, are, if located in accessible regions, proper subjects for surgical interference, for the reason that death is the usual termination. Operation, however, should not be too hastily advised, nor should too brilliant results be held out, for the reason that we cannot repair the actual damage done by the tumor, and the necessary damage done in its removal may cause new or increased paralytic symptoms. It is also true, however, that we may at times improve or cure such paralytic conditions when they are due to pressure by the growth on adjacent parts. It is also true, as in cerebral hemorrhage, some improvement may occur in the paralyzed parts from the functions of the injured cortex being supplied by other parts of

the cortex. The patient, then, and his friends, should clearly understand that the operation is for the purpose of arresting the course of the disease, rather than a cure for all his symptoms.

In the nineteen cases in which surgical procedure was undertaken, the tumor was found to have been correctly localized in eighteen. In the one case in which the tumor was found to be incorrectly localized, the symptoms were those usually found in the lateral lobes of the cerebellum, such as marked ataxia, marked optic neuritis, vertigo, and a well-marked tendency to fall to one side. On the autopsy the growth was found in the frontal lobe. This case supports the fact already in evidence that tumors may give rise to symptoms referable to other parts of the brain, either by pressure on adjacent tracts or by disturbances of the circulation.

In two cases the tumor was found to be irremovable, because of its size, indefinite outline, and malignant nature. The remaining sixteen cases may be briefly summed up as follows:

Case I. Subcortical sarcoma of the temporal region. Eighteen months' duration. General symptoms cured. Vision improved. Hemiplegia unimproved.

Case II. Subcortical cerebellar glioma. Two years' duration. General symptoms much improved. Optic neuritis and loss of vision improved. Ataxia unimproved.

Case III. Cortical tuberculous tumor of the Rolandic region. One year's duration. Localized convulsive seizures cured, but the operation was followed by paralysis of the arm, which remained permanent in the extensors of the hand.

Case IV. Cortical sarcoma of the parietal lobe. Three years' duration. General symptoms, optic neuritis, and loss of vision improved. Jacksonian epilepsy cured; the hemiplegia was at first much increased, but afterwards improved.

Case V. Meningeal fibrosarcoma of the Rolandic region. Six years' duration. Tremor of the arm with loss of power cured.

Case VI. Subcortical syphiloma of the occipital lobe. Two years' duration. General symptoms much improved, but the loss of vision and ataxia remained unchanged.

Case VII. Meningeal sarcoma of the Rolandic region. Two years' duration. General symptoms and local convulsive seizures cured, but the hemiplegia only slightly improved.

Case VIII. Meningeal tumor of unknown nature of the Rolandic region. Two years' duration. Tumor not removed, but all its vessels ligated. Jacksonian epilepsy cured; the hemiplegia was at first increased, but subsequently improved.

Case IX. Meningeal, tumor of unknown nature of the Rolandic region. Three years' duration. Tumor not removed, but all its vessels ligated. Jacksonian epilepsy of the arm cured; the loss of power in that arm was for a time much increased, but finally recovered.

Case X. Meningeal tuberculous tumor of the Rolandic region. One year's duration. General symptoms and local spasms cured, but the hemiplegia was permanently increased.

Case XI. Subcortical glioma of the parietal lobe. Two years' duration. General symptoms improved, but the loss of vision and hemiplegia remained unchanged.

Case XII. Subcortical sarcoma of the occipital lobe. Two years' duration. General symptoms improved, but the optic neuritis and loss of vision remained unchanged.

Case XIII. Meningeal psammoma of the Rolandic region. Six years' duration. Local convulsive seizures of the arm cured, but permanent paralysis of the extensors of the forearm occurred.

Case XIV. Subcortical sarcoma of the occipital lobe. One year's duration. General symptoms improved, but the loss of vision permanently increased.

Case XV. Sarcoma of the parietal region. One year's duration. General symptoms cured. Loss of vision, hemiplegia, and ataxia improved.

Case XVI. Subcortical sarcoma of the parietal region. One year's duration. General symptoms, except mental condition, cured. Mental apathy improved. Loss of vision permanent. The established facts, then, in the surgical aspect of brain tumors, would seem to be at the present time that no case should be subjected to operation until it had failed to improve after a month of treatment by the iodides or mercury; that the non-malignant nature of the tumor should be established by its slow growth; that we should be able clearly to localize its position in a surgically accessible region; that it should be of moderate size and have clearly defined outlines; that in subcortical tumors a moderate incision of the cortex does not cause any serious consequences, and that the best results are to be obtained in early cases which show but little evidence of brain destruction.

29 South Portland Avenue.

AIR DILATATION IN THE TREATMENT OF CHRONIC CONSTIPATION.*

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In presenting a paper on any phase of treatment of constipation before an audience composed of general practitioners, the first point which one would wish to emphasize would be the question of the diagnosis of constipation from obstipation, and one would dwell at some length upon the importance of making a rectal examination in all cases which present constipation as a symptom. However, before an audience composed of proctologists, it would be superfluous to mention anything regarding the importance of making a differential diagnosis between these two conditions.

That chronic constipation is probably the most prevalent disease condition existing to-day, I think cannot be doubted. This is shown by the fact that no matter where one goes glaring advertisements of all manner and kinds of aperient waters and cathartics are flaunted in one's face, the bill-boards, the street cars, the newspapers, the magazines, all are utilized by the venders of these various cathartics in proclaiming their wares to the general public. Every day the detail man brings to our office some new cathartic brought out by a reputable pharmaceutical house, which is "absolutely an ideal cathartic and the one for which we have long been looking."

Proctologists, however, realize that one is no more justified in treating chronic constipation with cathartic drugs than is one justified in treating chronic appendicitis by a chronic drugging.

It is not necessary to recall to this body that the most important factor in stimulating physiological peristalsis is distention of the gut. From the time that the stomach contents pass through the pylorus into the duodenum several factors are at work to produce physiological distention of the

*Read before the American Proctologic Society, Boston, Mass., June 6, 1906.

gut. The chemical reaction caused by the action of the alkaline intestinal secretions upon the acid stomach contents as they are poured into the duodenum causes an irritation or stimulation of the mucous coat of the gut, which sends down a wave of peristalsis. The gases which are formed by this reaction of alkali upon acid distend the gut mechanically and stimulate contraction, and the solid and indigestible portions of the food which have passed through into the gut, also by their bulk cause distention and consequent contraction.

As long as we have all of the physiological stimulants to peristalsis in good working order, just so long will we have excretion carried on in a proper manner. If, however, we have all of these factors at work, and a properly bulky stool is brought down to the colon and into the sigmoid, and if at the proper time the sigmoid endeavors to expel the feces through the rectum and anus, and the tightly contracted sphincter offers more

Fig. 1.

Fig. 2.

resistance than the expulsive effort can overcome, we shall have constipation.

If nature does her part well, and the individual, because the time or place is not convenient, represses nature's effort, soon she will tire of this interference and atony of the bowel will result, and atony of the bowel is responsible for a vast majority of cases of chronic constipation.

An atonic bowel requires more stimulation to cause it to contract than a normal bowel; although the food may be properly ingested and digested, its stimulus will not be sufficient to bring on a proper evacuation.

It is a fact, however, that in chronically constipated individuals there are usually dietetic errors and lack of proper exercise, which are contributory causes, besides the refusal to obey nature's summons; yet, in many cases where dietetic error is corrected, the proper amount of vegetable element is included in the stool, the proper amount of fluids is taken into the system, the food is properly masticated by teeth which are in good condition, gastric digestion is all that it should be, the patient takes plenty of exercise, in spite of all this he is unable to extrude a proper stool without assistance.

A stool solid enough, and of the proper shape to dilate gently the sphincter on its extrusion, is very necessary to normal health. The sphincter, as you know, is surrounded by a sympathetic plexus, and it is also well known that dilatation of the sphincter is one of the most powerful stimuli that we possess in shock. It is also a well-known fact that when the sphincter is properly dilated by a proper, normal-shaped stool, one has a sense of well-being not entirely accounted for by the simple evacuation of a loaded sigmoid. This well-being, I believe, is due to the stimulation derived from nature's dilator, a perfect stool, and we must regulate the diet so as to secure enough bulk to give a properly shaped stool for proper normal sphincteric dilatation.

A great many drugless methods of treating constipation have been offered to the profession. All kinds of electric and external massage, cannon-ball gymnastics, vibratory massage, and what not have all been tried, and, while satisfactory results have been obtained from each of them in certain cases, there still seems something to be desired in the successful treatment of chronic constipation.

The direct stimulation of the atonic sigmoid and rectum by means of mechanical dilatation has, up to the present writing, given the best results. Rubber bags, which have been introduced through the proctoscope into the sigmoid and inflated, have been used with excellent results. Tamponing the rectum and sigmoid with cotton, wool, or gauze, has by its mechanical irritation of the mucous coats of the bowel and its stimulating the normal bowel contents produced satisfactory distention with its following contraction and evacuation. The inconvenience of carrying around a tampon or inflated bag in the rectum or sigmoid for from four to six, or even twelve hours, has, however, militated somewhat against the more general use of these methods.

The writer has devised a very simple pneumatic dilator for accomplishing this distention, and wishes here to present it to the members of the Society for their inspection and criticism. The author claims no great originality for this device. It simply consists of a rubber bag with a stem, which is slipped over the distal end of a Wales bougie (No. 3-5), the Wales bougie being canaled (Fig. 1). Compressed air at a low pressure is slowly allowed to enter the bag, and distention to any desired extent is produced. By means of a cut-off valve this distention can be easily regulated. Where the compressed air apparatus is not convenient, an ordinary atomizer bulb (Fig. 2) or a small bicycle pump may be utilized.

The patient is placed in the Sims position. The bag is lubricated and deflated, is passed upward into the rectum, and through the rectum into the sigmoid to any desired height, the Wales bougie being firm enough to carry the bag up into the sigmoid, and yet being flexible, does not create any discomfort or do any injury in its passage; and it obviates the use of the proctoscope in its introduction. When the bag is in position it is slowly inflated until the patient complains of a sense of either fullness or pain, or a desire to move the bowels. The air is allowed to escape,

and after an interval of a few seconds it is again inflated to the point of tolerance. This alternate inflation and deflation is repeated about four times to the minute for a period of five minutes or so; then the bag is inflated again to the point of tolerance; the cut-off valve is disengaged and the opening in the bougie is closed with the thumb, and then, by a to-and-fro motion, the apparatus is gently and slowly withdrawn. This massages the bowel as it is withdrawn, and also gently dilates the sphincter.

This treatment is repeated daily for from five days to a week, and usually after the first or second treatment the patient will have a small unaided movement. Cathartics and enemata are, of course, strictly enjoined. Each day the patient will report a slightly larger and more satisfactory defecation. When the defecation approaches the normal, treatments are given only on alternate days. After three or four days, the interval is lengthened to two days, and then to three; and then to four; then the patient is asked to report again in five or six days. If he reports satisfactory evacuations daily he is allowed to go a week, and then, if a similar report is made, he is discharged as cured, but asked to return on the first day on which he does not have a normal stool.

If the case is properly diagnosed and instructions as to a regular time for daily evacuations and strict obedience to nature's calls are carried out by the patient, as well as the proper dietary being lived up to, the results from this method of treatment will be very gratifying.

In the author's experience, now extending over nine months, he can recall but two cases in which success was not attained. In about eighty cases, so far as he has been able to learn through subsequent inquiry, permanently good results were obtained.

604 Washington Arcade.

THE TREATMENT OF INJURIES TO THE EXTREMITIES BY MECHANOTHERAPY.

A REPORT OF CASES TREATED AT THE ROOSEVELT HOSPITAL.

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In our hospitals, as well as in private practice, the surgeon is often satisfied with a purely anatomical recovery of a fracture, a dislocation, or any other injury of the extremities, and he pays too little attention to the functional recovery. A patient comes to the hospital with a fracture, the best care and skill are used to secure perfect union without deformity; a radiograph is taken, the fracture is reduced, the limb put into splints. The patient occasionally gets a few minutes' massage. After a certain number of days or weeks the splints are removed, the patient discharged as cured, and he is seldom seen again by his surgeon, who never knows how soon he was able to resume his occupation, if ever. He had a perfect union and no deformities, but was he fit to go to work and earn his living? Had he obtained a complete functional recovery? Is it not a fact that this patient entered as cured in the records was far from being capable of using his limb? For weeks after being discharged he will be idle, his muscles weak and atrophied, his joints stiff. In some cases the function of the limb is never restored. Fractures of the patella, of the condyles, of the olecranon, dislocations of the elbow, are often followed by a permanent total or partial disability. The surgeon cannot be held responsible for this, because he has not at his disposal the means of treating his patient for functional as he has for anatomical recovery. But he should remember, when he discharges him, that he has fulfilled only part of his duty to his patient.

A great deal is done in France, Germany, and Switzerland by the Accident Insurance Companies to secure a rapid functional recovery of injuries. These companies have spent enormous sums to fit up their hospitals with every appliance suitable for that purpose. In doing this they realize considerable savings in compensations paid for loss of time or for permanent disability. In 1894, before the Congress of Milan, Boedicker said: "Since 1892 we have recorded a much larger proportion of complete functional recoveries of fractures. In 1888, before the use of a methodical treatment of accidents, the percentage of cases treated for twenty weeks or more was 55. Since 1892, when mechanotherapy was used, for the treatment of these cases, the percentage has fallen to 2."

The arthromotor devised by Dr. Chas. Scholder of Switzerland is an important step forward in the field of mechanotherapy. The arthromotor combines into one machine everything needed for the treatment of the extremities. It gives passive as well as active movements, and can be fitted for every joint of the extremities, it can be regulated so as to go from the shortest to a full normal movement, and so as to begin the movement at any angle. The treatment is absolutely painless, as the machine can be set so as not to go beyond the painful point. It is impossible to obtain this regularity of the passive movement by manual treatment. No matter how skilled the operator is in giving passive movements by hand, he cannot judge exactly how far he can go without giving pain. The patient instinctively contracts his muscles and interferes with the work of the operator. When the machine is used the patient soon finds out he need not fear pain, and all the muscles are relaxed. When using the machine for active movements one can measure and regulate the resistnace for any degree of muscular energy and increase it every day as fast as the muscles regain their strength. Two graduated dials indicate the amplitude and angle of the movement; by making a record of these figures the surgeon can follow day by day the improvements in the condition of his patient, and he can keep that record for future reference. With the advent of this relatively simple machine a large field is open to mechanotherapy, and we shall probably see this treatment play an important part in the management of cases of accidents.

Massage and, if possible, local application of heat, should always be resorted to in connection with the mechanical treatment. The importance of massage is too well known for me to dwell on the subject. The action and *modus operandi* of heat is, perhaps, not so well known, and it may be useful to say a few words about that part of the treatment. The object should be to subject the limb to as high a temperature as possible without danger of injury to the skin. I have tried different apparatus, some using gas, others electricity, as a means of producing heat. For the last two years I have used the Dowsing Radiant Heat apparatus exclusively, the principle of which is to use heat and light rays combined, or luminous heat, instead of dark or nonluminous heat. It consists of high-candle-power electric lamps fitted on polished reflectors, which project the heat on any part of the body. The lamps are rich in red heat

rays and yellow light rays, but exclude the violet rays, which are more or less irritating to the skin. There is no need of an enclosure, the limb is simply exposed to the rays and a temperature of from 400° to 500° Fahrenheit is easily borne. When using a nonluminous appliance one heats the limb by contact. That is, the air is heated, and this in its turn heats the skin without raising the temperature of the deeper tissues to any extent. With the luminous apparatus one does not depend on hot air but on direct application of heat and light rays to the part. It has been proved by experiments on animals that the light rays penetrate the skin, where the shorter waves of the spectrum are transformed by the resistance of the tissues into long heat waves. In that way the heat is carried to the deep-seated organs. The apparatus constructed for the treatment of the full body is used for cases of rheumatism, gout, rheumatoid arthritis, etc. For the treatment of accidents I use the local apparatus devised for the treatment of a limb only. Luminous heat rapidly increases the absorption of the exudate, improves the circulation, and has a marked sedative action. I have often found in cases of recent sprain of the ankle with intense pain, that the patient could easily bear the massage after fifteen or twenty minutes' application of luminous heat.

The cases treated in the mechanical department of the Roosevelt Hospital, from February to December, 1905, were sprains, fractures, dislocations, contusions, rupture of muscles, synovitis, adhesions, stiffness following arthritis, cellulitis, tenorrhaphy, operations on the joints, etc.; 4,005 treatments were given in eleven months. The large majority of cases treated were fractures and dislocations. We were kept so busy with those cases that it was found difficult to undertake the chronic and slower cases. The results have been very encouraging and often remarkable. As a rule the patients were sent for treatment at an early stage; we shall see later that this plays an important part in the ultimate functional recovery. Each patient reported to the surgeon who treated him about once a week and before being finally discharged. In that way the surgeon first in charge of the case had an opportunity of following closely each one of his patients from the day he was sent to the mechanical department to the day he was discharged.

Fractures.—We had 215 cases of fractures; in 130 cases a complete functional recovery was obtained, 82 were improved, 3 failures. By functional recovery I mean not only that the patient went to work immediately after being discharged, but also that he had obtained the full normal movement. The cases reported as improved only were of patients who either went to work before obtaining a complete normal movement or left before being discharged by us.

Fractures of the forearm: 137 cases; 87 recovered, 44 improved; 1,348 treatments. The treatment was begun from the 7th to the 12th day, the splints cut short from the 14th to 18th day, and removed as early as the 21st day after the accident. All cases where the treatment was begun early recovered in a remarkably short time, most of our patients doing hard work thirty and even twenty-seven days after the accident. A marked improvement was always obtained, even in cases of old standing.

Fractures of the humerus: 50 cases, of which 24 of the condyles; 25 recovered, 22 improved; 3 bad T-fractures were failures. Cases of fractures of condyles in children did well; the treatment was begun between the 10th and 20th day, and from 7 to 29 days were required for a complete functional recovery. A six months' case, a child four years old, which had only 30° of movement, obtained a full flexion and extension after 47 treatments.

Fractures of the patella: Some of our cases did remarkably well, others were almost a complete failure. When the treatment was begun early the recovery was very rapid; when it was begun late it took weeks to obtain an improvement only. A man twenty-two years old, treatment begun five weeks after operation, had 5° of passive movement, complete flexion, leg strong, goes to work after three weeks of treatment, or eight weeks after operation. On the other hand, a young woman who began ten weeks after the operation had sixty-nine treatments and obtained 25° only of flexion. It was found impossible to obtain more under anesthetics.

Fractures of the leg: Patients working as early as forty days after accident.

Pott's fractures: Treatment begun twenty-one days after accident, recovery fifty-six days after accident, splints removed six weeks after accident.

Dislocations.—In those cases the treatment should be begun early. I see no reason why the treatment should not be begun immediately for dislocation of the elbow, providing active movements are not allowed at first. Cases undertaken a day or two after the accident recovered rapidly, while old cases were slow and tedious. Dislocation of the elbow is often followed by a permanent partial disability, the extension being impaired in most cases. In all cases the flexion was obtained much quicker than the extension. From fourteen to seventy-three treatments were required for a complete recovery.

Sprains.—Massage and mechanical treatment can never be started too soon for sprains. Much has been written on the treatment of sprains by massage, and very few surgeons, I think, still adhere to the old treatment by immobilization. Very quick recoveries have been obtained by massage only. I think that with the addition of heat and passive moments by machinery the length of treatment can still be considerably reduced. The passive movements by hand are always more or less painful, while they are painless by machinery. I have seen patients beginning treatment with the arthromotor with an almost imperceptible flexion and extension of the ankle, stand, at the end of ten or fifteen minutes, an increase of 10° to 15° without discomfort. The heat is also an important factor in alleviating the pain, reducing the exudates, and improving the circulation. Patients should be instructed to walk; a compressive bandage is useful. I have never seen a case of recent sprain (by recent I mean four days or less) need more than ten treatments for a complete functional recovery. They averaged five or six days, and in some cases one treatment sufficed.

Conclusion.—In this short report I have merely given the outlines of the treatment and of the work accomplished in eleven months at the hospital. I have mentioned only cases treated at the hospital, because these cases were under the direct observation of the different surgeons of the hospital who sent them to us. We were kept very busy and a short time only could be given to each patient. If more time daily could be devoted to each case, a better record could be obtained. The general results have been very satisfactory, and we think that the treatment deserves to be given due consideration by the surgeons and to be adopted in our hospitals. We think that if it is properly given it will lessen to a great extent the period of idleness following injuries to the extremities. This is especially important in the case of workingmen, when every day of idleness means a loss of wages and a hardship for the injured man and for his family.

296 West One Hundred and Sixth Street

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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COMMERCIALISM IN MEDICINE.

IN a thoughtful address on "The General Practitioner and the Specialist," delivered before the Massachusetts Medical Society (*Boston Medical and Surgical Journal*, July 26, 1906), Dr. John L. Hildreth brings up again the vexed question of the value of medical services, or rather the value which certain practitioners put upon their own services. He deprecates what he calls the spirit of commercialism in the practice of medicine, and says there is a feeling among some of the older practitioners that this spirit is taking a very strong hold of the whole profession. As evidence of this tendency toward commercialism, he instances the thousand-dollar fee which a New York dentist is said to have exacted of Prince Henry of Battenberg for filling a few of the illustrious visitor's teeth, and the charge of $1,000 made by a surgeon of this city for an operation for appendicitis. The two instances are not parallel, and their citation together only illustrates the futility of the discussion of this subject from a single point of view. As well almost might one compare the wages of a stone-cutter and the fee of a sculptor. The work of a dentist is one calling for knowledge, judgment, and skill of a high order, but it is in no sense comparable to that of the abdominal surgeon, upon whom rests a load of responsibility for the life of his patient, which vastly increases the value of his services. Assuming that the qualities above mentioned are the same in the two men, the circumstances render their exercise in the surgeon more difficult. It is recognized in all professions and walks of life that the greater the responsibility attached to an office, the more highly paid shall be the man who fills it. The alleged fee of the dentist might fairly be characterized as exorbitant; that of the surgeon might be thought high, but it was not exorbitant. As Dr. Hildreth says, the patient pays the surgeon, "not for the brief time spent in an operation, but for the skill and training which have been acquired by years of strenuous effort, and upon which he bases the assurance with which he gives himself to the surgeon's knife, certain that everything which science can do to relieve his suffering and save his life will be done. That sense of assurance is worth so much to the patient that he should not begrudge paying for it, provided the fee of the operating surgeon is not beyond reason."

Many other factors must enter into consideration in determining the fee question. A man of reputation is legitimately entitled to a larger fee than the surgeon who has not yet proved himself, even though the latter may regard himself, and actually may be, possessed of greater ability than his more renowned colleague. A surgeon practising in a large city, where living expenses are higher, must be paid more for his work than his country brother, who may be his superior in many ways, but who lives in a community where the scale of prices for everything is lower. Then again, there is the delicate question to be considered of the patient's means. The life of a poor man is as dear to himself and his family as that of the rich man, and may be of far greater worth to the community, yet the surgeon or the physician naturally does not and can not charge him the same fee for his services that he will the latter.

It is here that the "spirit of commercialism," we are forced to admit, sometimes shows itself. The commercially-inclined practitioner too often grades his fee upward according to the wealth of his patient, regarding the "plutocrat" as a lamb to be sheared. To quote Dr. Hildreth again, "in too many instances this fee seems to be based, as the railway magnate said of the freight charges, upon 'what the traffic will bear.'" The conscientious physician should formulate for himself a fee rate, and exact this of all his patients who expect and are able to pay the "market rates" for all they receive, whether groceries or medical services. He is not in duty called upon, except in case of emergency, to treat one who can not afford to pay his regular fee, but if he does he remits a part or all of his bill to meet the necessities of his patient. But this is a voluntary act of charity, and the practitioner has no moral right to compensate himself for the undercharge by overcharging the next millionaire who seeks his advice. He should exact of him only the regular fee which he charges for services rendered to all his well-to-do patients. It was the highwayman of old who robbed the rich to feed the poor, but in these days of organized medical charities the physician is not called upon to fill this rôle. After the death of a multimillionaire the newspapers sometimes report the filing of an excessive bill for medical services against the estate. It is these reports—rare, we are pleased to note, for the honor of the profession—which bring discredit upon our guild, and give occasion for comments upon the "rapaciousness of physicians," exposing the honorable and conscientious practitioners, who constitute the great mass of our profession, to the undeserved charge of "commercialism."

SOURCES OF ERROR IN EXAMINATIONS OF THE STOMACH CONTENTS.

IT is now some twenty years ago since Ewald and Boas first introduced the so-called "test breakfast" as a means of determining the secretory and motor functions of the stomach. Experience has fully demonstrated that this method, although simple, is the most practical for the purpose stated, and among its numerous advantages is the ready means which it affords for differ-

entiating the individual constituents of the gastric contents, both qualitatively and quantitatively. A critical inspection of the literature shows that physicians have subjected the original formula to modifications without number, which in most instances are far removed in purpose and design from the specifications laid down by Ewald and Boas, and are therefore very apt to lead to false conclusions. The test breakfast, as originally proposed, consists of a white bread roll weighing about 35 gm., together with 400 gm. of water or tea, without the addition of cream or sugar. The patient is directed to take this on an empty stomach, and an hour later the contents of the organ are syphoned out with a stomach-tube and analyzed. This is essentially the original method, but, as Boas states in a recent article written for Ewald's "Festschrift," every one of these specifications has been subjected to some change or other, so that in many respects there is little resemblance to the original procedure. Thus a common mistake arises from the fact that the precaution to give the meal on an empty stomach is not closely observed; it is simply administered before breakfast without any assurance being obtained that nothing remains in the organ from a previous meal. If this precaution be omitted the end result will, of course, be affected. It is essential that the test be preceded by the inspection of the stomach with the gastric syphon, in order to ascertain whether any residue is present. After this point has been determined the preliminary syphonage can, as a rule, be omitted with subsequent examinations.

Another source of error arises from the fact that the test meal is not given early in the morning before breakfast, as originally prescribed, but at some other more convenient time of the day. It would be possible to determine the presence of free hydrochloric acid by this means, but only a positive finding would have any value under these circumstances, and the quantitative determination of the HCl, or the presence of lactic acid and other substances, could of course not be taken into consideration. Another, and most important factor, which affects this, as well as all other methods of a similar character, is the variation in the excretion of HCl which characterizes the individual. The quantity may vary within wide limits in different patients, and this fact demonstrates quite conclusively that a single examination of the gastric contents, except in isolated cases, cannot possibly afford sufficient evidence for an absolute diagnosis.

It seems, therefore, that this well known and highly valued "test breakfast" is, like most other clinical methods, subject to certain sources of error, and is also limited in its application. Careful attention must be given to all secondary factors which may have a possible bearing on the outcome of the method, and also to every technical detail of the procedure. Notwithstanding all this, there is little doubt that the method with which the name of Ewald is closely linked will continue to be the simplest and most satisfactory diagnostic means for testing the secretory and motor functions of the stomach.

IMPURE AIR IN SHIPS.

An important chapter of naval hygiene is concerned with the contamination of the air in the holds and other closed compartments in vessels. Such contamination may be brought about by certain changes which take place in the cargoes, or it may be due to the metal hulls. These conditions are not merely of theoretical but also of great practical interest, for every year there occur a number of fatal cases of asphyxia due to the inhalation of this poisoned air. These accidents usually take place shortly after coming into harbor, and particularly in those ships which have just completed a long voyage. While on the high seas the hatches and ventilators leading to the cargo spaces are ordinarily closed, but when port is reached they are immediately opened. Sailors and others who venture into these insufficiently aired compartments are then frequently overcome, and those who attempt to rescue them are liable to meet the same fate.

It has generally been supposed that an excess of carbonic acid gas produces the fatal issue, but in an article by G. Giemsa in the *Archiv für Schiffs- und Tropen-Hygiene* for March, 1906, it is quite conclusively demonstrated that this is not the only cause. The rapidity with which death came on in most of the cases reported seemed to point rather to an insufficient quantity of oxygen in the air of these places. In order definitely to determine this point and also the possible effect of the cargo on the contamination, an elaborate series of experiments was conducted by Giemsa, who is connected with the famous school of naval medicine in Hamburg. The ordinary method of testing the quality of the air in any given locality by observing its effect on an open flame was found to be unsatisfactory and insufficient, for the latter was not extinguished until the oxygen content of the air had been reduced to from 14 to 15 per cent. and a greater proportion of oxygen than this is necessary to sustain life. It was also found that this diminution in the amount of oxygen can in many cases be traced to the character of the cargo, many kinds of which become rapid consumers of oxygen under certain conditions. Increased humidity and elevated temperature were found to favor this process.

Giemsa has found that animals make much more satisfactory test objects for the purpose of determining the lethal quality of the air in ships' holds, than the commonly employed lamp flame. He recommends that mice be lowered into the hold in small cages and the effect observed. If the contained air does not support animal life, then means must be taken to clear out the contaminated air, and this can be accomplished only by active mechanical ventilation—it is not sufficient merely to open doors and hatches. In order to overcome the oxygen-consuming properties of the cargo, receptacles containing ordinary lime may be placed in the compartments.

A study of these facts is of considerable commercial value, and they should be made a matter of common knowledge among those in charge of vessels. The dangers connected with a seafaring life are by no means limited to the time when the vessel is under way and, as will be seen from the writer's timely articles, those which are liable to occur in harbor are also to be reckoned with.

AMAUROSIS DURING LABOR.

The advent of this phenomenon during the course of childbirth is regarded ordinarily with alarm by the patient and her attendants, as well as by the physician, until its cause has been determined. Although certain of these disturbances, such as albuminuric retinitis, are cleared up by an ophthalmoscopic examination, and some may be recognized by the history and the clinical picture, there are a number of other eye conditions which can be diagnosed only with difficulty.

Dr. S. Bauer (*Monatsschrift für Geburtshilfe und Gynäkologie,* June, 1906) reports a case of this kind, in which a parturient woman, otherwise apparently healthy, sudddenly became totally blind. The patient had for some years been subject to severe headaches which became worse towards the end of her pregnancy, and for three weeks previous to term were accompanied by considerable nausea. There were no convulsions. The blindness continued for five days, was then succeeded by hemianopsia, with complete recovery at the end of a month. Aside from a transitory edema of the retina and congestion of the veins, there was nothing abnormal to be seen on ophthalmoscopic examination. Albumin was abundant in the urine at the time of labor, but quickly disappeared. The puerperium was marked by high fever lasting nine days, and there were present abundant cerebral symptoms, including severe headaches, pain and spasm in the neck, delirium, and localized areas of tenderness. It was thought at one time that the symptoms might be due to an abscess in the occipital lobe and operation was even considered, but the subsequent favorable outcome showed the error of the diagnosis.

But seven cases of this kind have been reported, and in these the condition was referred to a uremic, *i.e.* an eclamptic, intoxication which involved the cortical portions of the optic tracts in one or both hemispheres and resulted in blindness. Bauer is inclined to regard this as a possible cause in his case, and looks upon it as an incomplete or aborted form of eclampsia, all the classical symptoms of the latter being present except the convulsions. It was Schmorl who pointed out that the convulsive seizure can be regarded only as a single phenomenon of the symptom complex which characterizes this peculiar toxemia of pregnancy, and its absence in certain exceptional cases may be explained by assuming that the intoxication is sometimes so severe that the stage of cortical irritation is entirely omitted and paralysis of the central nervous system appears at once. A similar difference in effect may be seen after the administration of large and small doses of any poison. If there is a form of eclampsia without convulsions, why, asks Bauer, may it not also be possible to have non-fatal cases, in which, to follow out Schmorl's reasoning, the degree of intoxication is not sufficiently severe to produce the necessary cortical irritation, temporary blindness being the only prominent symptom, and whatever organic changes occur being still reparable? There are many interesting features connected with this question, and it may be, as the clinical phases of the condition are more carefully studied, a new and more detailed classification of eclamptic cases will be formulated.

The Etiology of Syphilis Again.

The causative factor of syphilis has long formed a topic of entertaining, even if bitter discussion, though it was thought that the end had almost been reached with the discovery of the *Spirochæta pallida.* The evidence of the infectious character of the blood during the secondary stage of syphilis seems fairly well established and has been practically admitted by most syphilologists, but whatever the infectious principle may be, it is essential that it be recoverable from the blood during the secondary stage of the disease. W. E. de Korte of London claims, in the *Practitioner* for June, 1906, that *Spirochæta pallida* fails to satisfy this essential condition, and on no occasion in the blood of a large number of syphilitics which he examined did he once meet with this organism. He did, however, find another series of bodies which he believes are also protozoan in nature, but of their causal relationship to syphilis he seems to think it premature to speak. He observed a number of stages of this organism which he has grouped into a life cycle, and of these he has obtained photographs. The organisms are also flagellated, and on account of a euglenalike form which is present, de Korte ventures the suggestion that they belong to the class *Ciliata.* In addition to being found in the blood, these bodies were also isolated from the chancre and the condyloma, but with considerable difficulty.

Carcinoma in Early Life.

The clinical picture of a carcinoma is so commonly associated with advanced life that the question of years alone is often regarded as for or against the presence of such a growth in formulating an opinion in a suspected case. Instances of carcinoma in early life have, however, been reported, and it would appear that their number has increased during recent years. It is impossible to say whether this increase is actual or due to improved diagnostic methods; but the fact remains. The most recent report of this kind deals with a case of rectal carcinoma in a girl of sixteen reported by C. G. Grulee in *Surgery, Gynecology, and Obstetrics* for June, 1906. The patient was weak and anemic, there was constipation with intermittent bloody stools and much abdominal pain. Examination disclosed a mass in the left iliac region which might have been taken for impacted feces. Later on a local examination showed that this mass involved the wall of the rectum above the sphincter and a bit of the tissue which was examined showed that the tumor was an adenocarcinoma. There is no statement of the further course of the disease, but the report is certainly interesting in connection with the small number of similar cases which have been observed which show that carcinoma, although infrequent, is liable to occur at any age.

A Method of Fixing Blood Smears.

The usual method of fixing blood specimens intended for histological examination has been by means of heat; and although this serves very well in most instances, there are cases in which it is desirable to employ some other procedure. The gradually increasing employment of aceton in histological work led Jagic (*Medizinische Blätter,* No. 24, 1906) to experiment with it as a fixing agent for blood specimens. It was found, on comparing the staining qualities of smears thus fixed with those treated by other means, that Erlich's triacid stain,

for example, which, as is well known, affords the best means of bringing out the neutrophile granules, gave excellent results in specimens fixed for five minutes in pure aceton. The nuclei, as well as the granules, are also found to take on a much darker coloring, and the outline of the former appear sharper than after simple heat fixation.

News of the Week.

A Proposed National Public Health Society.—Announcement is made of a meeting to be held in the Hudson Theatre of this city on November 15 for the purpose of forming a national society for the preservation of public health. The movement is supported by a score of religious, medical, and scientific organizations, and has been endorsed by many persons of prominence. The object of the proposed society is stated to be to obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, to prevent quackery, criminal practices in the healing art, adulteration of drugs, and the sale of narcotics and alcohol under the guise of proprietary remedies.

Harvey Society Lectures.—The second annual course of lectures given by the Harvey Society of New York will be opened on October 20, 1906, by Prof. A. E. Wright of London. Ten lectures are to be given during the year, the lecturers and dates being as follows: Oct. 20, A. E. Wright; Nov. 3, C. A. Herter; Nov. 17, W. T. Porter; Dec. 1, J. G. Adami; Dec. 15, George Huntington; Jan. 12, F. G. Benedict; Jan. 26, E. B. Wilson; Feb. 9, S. J. Meltzer; Feb. 23, W. T. Councilman; Mar. 9, Friedrich Müller. The officers of the society for the coming year are Graham Lusk, *President;* Simon Flexner, *Vice-President;* F. S. Lee, *Treasurer;* George B. Wallace, *Secretary,* and C. A. Herter, S. J. Meltzer, and James Ewing, *Council.*

Dr. David C. English of New Brunswick has been appointed editor of the *Journal of the Medical Society of New Jersey,* to succeed Dr. R. C. Newton of Montclair. In his salutatory Dr. English says that "the *Journal* is not to be the exponent of the editor's dogmatic beliefs or judgments. The editorials . . . will never . . . touch upon controverted questions in a manner calculated to call forth merited condemnation."

Difficulty in Obtaining Meat Inspectors.—It appears that under the present requirements some difficulty may be experienced in obtaining the necessary complement of meat inspectors for the Department of Agriculture to carry out the provisions of the new meat inspection law. Out of about 3,600 candidates, only 8 per cent. of those taking the civil service examination passed in the Eastern States, and so far only about 288 of the 500 new inspectors required have qualified.

Report of the Coroner's Office for July.—The figures published by the Coroner's Office for last month show that of 524 deaths in the Borough of Manhattan, 298 were "natural or sudden," and 226 were caused by homicide, self-destruction, and casualties. Of the latter 24 were by drowning and 2 caused by caisson disease. One was caused by a kick from a mule. The surface railways killed 18, other vehicles 12, automobiles 3, while the real murders were 2 by shooting and 4 by cutting. The suicides number 26, and include the first death caused by leaping from the Williamsburg Bridge.

Suicide in Europe.—Statistics of suicide in Germany show that since 1873 the percentage of suicides has almost doubled, and it is stated that in France the number of suicides increases each year by 1 to 100,000. Drowning, shooting, poisoning, and hanging have been, in the order named, the favorite methods of self-destruction in Hamburg of late. In Italy, a couple of decades ago, hanging and shooting claimed most victims, and suicides by drowning and poison were becoming rarer. At present the tendency has changed, and poisoning is taking the place of shooting and hanging methods. Suicide by poison in Italy used to be confined almost entirely to females, men preferring firearms. Now poison is equally in favor with both sexes. The reason for this is supposed to be the greater facility with which corrosive sublimate and other forms of mercury may be procured on account of their increasing use for domestic purposes in the past decade.

Beer Drinking in This Country.—The internal revenue bureau has published figures which seem to show that beer drinking is on the increase in this country, for during the fiscal year that closed June 30, 1906, something like 160,000,000 gallons of beer more than during the previous year were consumed. The receipts from spirits amounted to $143,394,055, an increase of $7,435,542 over the last fiscal year. The increase in the receipts from tobacco was $2,763,086, the total being $48,422,997. The total revenues from fermented liquors, practically all beer, were $55,641,858. The receipts from beer were $54,651,636. As each barrel of beer pays a tax of $1, this shows that the consumption of beer in this country in the last fiscal year amounted to 54,651,636 barrels, each containing 31½ gallons. In the fiscal year 1905 the consumption was 49,459,530 barrels.

Cigarettes in the British Navy.—In spite of the activity of the anticigarette crusade in England at present, the British Admiralty has just made a move which undoubtedly will do much to popularize this form of smoking in the navy. The sailors have recently been showing increasing appreciation of the cigarette, and the Admiralty, recognizing this, has determined to issue fine cut tobacco suitable for cigarette rolling at the low price of a shilling a pound.

Chicago Medical College and Northwestern University Consolidated.—The last act merging the Chicago Medical College and the Northwestern University was performed July 24, when the President of the former institution gave a quit claim deed to the Northwestern University for all of its property. The intent of the conveyance is that there shall be a complete merger between the College and the University, free of all claims, limitations and obligations existing by virtue of any contracts heretofore entered into between the two institutions.

Metropolitan Hospital and Dispensary.—Through the purchase of an adjoining building, the trustees have been enabled to increase the facilities of this institution from sixteen to thirty-four beds, including a babies' ward of ten beds. The present medical board consists of the following members: Visiting Physicians and Surgeons, Doctors F. H. Albee and E. W. Lee, in surgery; B. S. Talmey and J. A. Schmitt, in gynecology; M. Jackson and O. P. Honegger, in internal medicine; H. B. Sheffield, in pediatrics; M. Talmey and A. Schapringer, in eye, ear, nose and throat. Adjunct Visiting Physicians and Surgeons, Doctors G. A. Friedman, M. Cisin, R. Lewy, I. Grush-

law, J. E. Murphy, R. P. Muellenbach, M. Caspe, A. F. Dempewolff. House Surgeon, J. Van W. Smith.

Bequest to Philadelphia Hospital.—By the will of the late Horace M. Potts of Philadelphia, the sum of $5,000 is bequeathed to the trustees of the University of Pennsylvania for the endowment of a free bed in the woman's ward of the University Hospital.

Ambulance Accident.—While answering a summons to attend a man who had fallen to the sidewalk from a second-story window, a Hudson Street Hospital ambulance, in charge of Dr. Bryant, broke its rear axle. The surgeon and driver were unhurt, and the injured man was taken to the hospital in a big touring automobile, whose owner had witnessed the accident and offered his services.

Chagres Fever at New Orleans.—The Louisiana State Board of Health has ordered the steamer Whitehall, which recently arrived at New Orleans from Colon, be held at the Mississippi River Quarantine Station indefinitely. She came into port with barely enough well men to run her, and of her crew of twenty-one men three have died and sixteen others are in the hospital.

Flies as Spreaders of Cholera.—The Bureau of Insular Affairs has received information to the effect that the difficulty experienced in controlling the present outbreak of cholera in the Philippines is to some extent due to the unusual prevalence this year of flies. Dr. Heiser of the Philippine Bureau of Health has ordered that every effort be made to destroy the pests, and that all places where food stuffs are stored be kept screened.

Death of Another Centenarian.—The oldest inhabitant of Bethel, N. Y., a woman reputed to be 109 years old, died on August 3. A year ago she became blind, but she was active until a week before her death. Her husband, well and strong at 92 years, survives her.

Health Statistics of Boston.—The total number of deaths reported to the Boston board of health for the week ending July 28 was 211, against 248 for the corresponding week last year, making the death rate for the week 18.27. Of this number 124 were males and 87 females.

Examination for Undertakers in New Jersey.—Under a law passed some months ago, Governor Stokes of New Jersey has appointed a State Board of Undertakers and Embalmers, before which all persons wishing to engage in these occupations must in future pass an examination. A feature of the law is that the use of embalming fluids containing arsenic is forbidden.

The American Association of Obstetricians and Gynecologists will hold its nineteenth annual meeting in Cincinnati, on Thursday, Friday and Saturday, September 20, 21, and 22, 1906. The Fellows of the association residing in Cincinnati constitute the committee of arrangements, of which Dr. Charles Lybrand Bonifield, 432 West Fourth Street, is the chairman, and Dr. Magnus A. Tate, Vindondissa Building, is the secretary, either of whom will furnish information to members and guests upon application . The President of the society is Dr. John Young Brown of St. Louis, and the Secretary is Dr. William Warren Potter of Buffalo.

Ohio Valley Medical Association.—The eighth annual meeting of this association will be held in Louisville, November 14 and 15, 1906. The chairman of the committee of arrangements is J. Garland Sherrill of Louisville.

Rhode Island Franco-American Medical Society.—At the meeting of this society, held at Pawtucket, R. I., on July 24, with the President, Dr. C. H. Boucher, in the chair, the charter of the association was accepted and a constitution and by-laws accepted. The next meeting will be held in September in Woonsocket.

Association of Colored Physicians.—A new medical society was formed in Boston on July 19 by the colored physicians of Massachusetts, and the following officers were elected: *President,* Dr. W. C. Lane of Cambridge; *Vice-President,* Dr. H. G. McKerro, of Worcester; *Secretary,* Dr. Thomas Patrick of Boston; *Treasurer,* Dr. J. B. Hall of Boston; *Executive Committee,* Dr. S. E. Courtney, Dr. I. L. Roberts, and Dr. H. C. Ross, all of Boston.

Obituary Notes.—Dr. William H. Taylor, medical inspector U.S.N., retired, died on July 30, at the naval station at Honolulu. He was made an assistant surgeon in 1859, and during the Civil War served on the *Savannah,* the *St. Mary's,* and the *Iroquois.* He received his appointment as medical inspector in 1876 and was placed on the retired list in 1881.

Dr. Charles F. Hermann of Brooklyn died at Waterbury, Conn., on August 2, at the age of thirty-six years. He was in Waterbury and received his medical degree from the Long Island Medical School. His death was due to infection following a wound of the foot received from a nail in his shoe.

Dr. Edward Hartshorn of Somerville, Mass., died at Berlin, Mass., on July 26, at the age of eighty-nine years. Dr. Hartshorn studied medicine at the Dartmouth Medical School and later received his degree from the Harvard Medical School in 1840. He practised for some years in Berlin, and in 1870 removed to Somerville.

Dr. Robert M. Whitefoot of Bozeman, Mont., died on July 25, at the age of sixty-six years. He was born in Philadelphia and was graduated from the Georgetown, D. C., Medical College in 1868. He went to Montana as army surgeon in the same year, and in 1881 he retired and located in Bozeman. He was made a member of the State Board of Examiners in 1890, and in 1896 he was appointed Surgeon-General of the National Guard of Montana. He was twice president of the Gallatin County Medical Society, and for some years was health officer of Bozeman.

Dr. Jerome B. Greene of Providence, R. I., died of apoplexy on July 27, at the age of seventy-five years. He was in the midst of an address before the members of the Fifth Rhode Island Artillery when his death occurred almost instantaneously. Dr. Greene was born in Uxbridge, Mass., and received his medical degree from Jefferson Medical College in Philadelphia. He served through the Civil War as assistant surgeon, and in 1865 he settled in Providence, where he practised until about twelve years ago.

Dr. John H. Love of Ventura, Cal., died of paralysis on July 23, at the age of fifty-nine years. He was a native of Ohio, but had practised in Ventura for many years and was county physician at the time of his death.

Dr. William F. Cornick of Princess Ann, Va., died on July 26, at the age of sixty-nine years. He was a native of Norfolk, Va., but had lived in Princess Ann for some years.

Dr. Stanton B. Drew of Jacksonville, Fla., died on July 30 after a short illness.

Dr. R. E. Brown of Milligan, Fla., died suddenly at Pensacola on July 27.

Correspondence.

FITTING GLASSES, ETC.

To the Editor of the Medical Record:

Sir:—Dr. George M. Gould of Philadelphia, in your issue of July 21, criticises an article by me recently published in the Medical Record, "fearing," as he says, "it may mislead the incautious." Perhaps I am wasting my time and your space in replying to this criticism, and I would be sure of the fact were I certain that all of your readers were familiar with Dr. Gould's writings. It is for the benefit of those who are not familiar with them that I beg space for reply, and not for those who know him; because by most oculists, both in this country and abroad, Dr. Gould's writing have ceased to be taken seriously.

The criticism of my article was not inspired through fear of the incautious being misled, but because Dr. Gould's pet hobby—eyestrain—had been hit a blow on the head. Dr. Gould himself is seriously affected with eyestrain paranoia, a large amount of mental astigmatism, if you please, which does not require the use of cyclopegics to detect.

(1) In the first place, Dr. Gould is the merest quibbler. He even quibbles on the title of my paper, saying: "The fitting of glasses is considered as a part of the opticians' art." This from the great purist, who in his "Biographic Clinics," page 356, speaks of "a scientific pair of glasses."

(2) My critic says the epitome of the history of the discovery of glasses is made up of many sins of omission and commission, and that it has been much better done than here. Why did he not mention a single instance of omission or commission, and not waste the time of the incautious with generalities, which serve no other purpose than to make copy? As to it having been better done elsewhere, that is a matter of opinion, which I leave for my readers to decide.

Criticisms 3, 4, and 5 I shall consider collectively. Dr. Gould says: "The ophthalmoscope is made much of as a method of diagnosing (*sic*) refractive errors, but it is of *no use* to those who value scientific precision in such work." Of the ophthalmometer, among other things, he says: "I, myself, find it of *no use whatever*" (italics mine). Of the retinoscope he says: "Retinoscopy is the most accurate and trustworthy objective method of diagnosing (*sic*) errors of refraction." We have here the admission of Dr. Gould that *he* finds the ophthalmoscope and the ophthalmometer of no use in scientific refractive work; and I shall show by another quotation that he rarely uses the one other remaining objective test—retinoscopy—whose superiority he so loudly proclaims. "Biographic Clinics," Vol. 2, page 367, has this to say: "Not the least of the oculists' expertness consists in deducing the truth from such answers, and by a sort of unexplainable intuition reaching the diagnosis through the jumble of inaccuracies. *Rarely the objective method may be needed to untangle the mysteries*" (italics mine). Now this is *scientific* refraction work, according to Dr. Gould. Two of the objective tests tabooed entirely and the remaining one "rarely needed to untangle the mysteries." The correct glasses to be prescribed are found "by a sort of unexplainable intuition reaching the diagnosis through the jumble of inaccuracies." Such are the written statements of this accurate and scientific refractionist.

The critic even presumes to know my motive for discouraging the method of retinoscopy, saying: "It is because it requires carefulness, time, and conscientiousness on the part of the oculist." This statement concerning my motive has as much foundation in fact as most of the statements made by my critic, and I let it pass for what it may be valued at without further comment.

(6) "The epitome of the history of the discovery of reflex ocular neuroses is all wrong . . . it is a sorry jumble of inaccuracies and misstatements. The quotations from Fisher, Sachs, Dana, and others are delightfully funny." Such are a few of the statements made in criticism 6. For the benefit of my readers I may say Dr. Gould himself has written voluminously on this subject, both in the abstract and the concrete, and I respectfully refer my readers to these writings, citing but one case from them, by way of illustration of the accuracy of Dr. Gould's method of procedure. In Vol. 1 of the "Biographic Clinics," the life tragedy of De Quincey is treated of. De Quincey, though he never suffered with headaches, nor had any trouble with his eyes, until sixty-five years of age, is guessed to have had myopic astigmatism, which caused him to become an opium fiend at the age of twenty. The only medical testimony to be had in this case (Dr. Begbie) shows no tendency to eyestrain whatever, but the biographic clinician says: "More even than the physicians that attended and wrote about him, I would trust his (De Quincey's) calm statements about these things." And some seventy years after the fact, with the statements of an opium fiend as to his own condition, a diagnosis of the trouble is made.

(7) Dr. Gould is very emphatic in his criticism of Dr. Howe's article, quoted by me, in which Dr. Howe shows that the great majority of American oculists do not agree with Dr. Gould in his absurd claims about eyestrain. Of this article of Dr. Howe's, Dr. Gould says: "If your contributor knew several things about it, even he would realize how much less valuable it is than that blank foolscap page." Of course all the oculists who oppose Dr. Gould's views are wrong and he is right. Such is the position assumed by Dr. Gould lately in his writings and before medical societies, he claiming that he is practising ophthalmology solely in the interest of the patient, thereby intimating that the rest of us are practising in our own interests.

(8) In regard to criticism number eight, I agree with Dr. Gould that cyclopegics are necessary in refraction work, as he practises it, that is, rarely using the objective tests; and I also agree with him that refraction work is "most inexact," where unexplainable intuition is relied upon to reach a diagnosis through a jumble of inaccuracies and subjective tests.

(9) As to opticians doing "as good work (*gratis*, too) as oculists do who do not use drops," I may say I know of many instances where the optician has done even better work than oculists who do use drops, reducing the strength of the glasses and giving comfort to the patient who had been made miserable by the drop-using oculist. Especially does this happen to that class of oculists who believe in using cyclopegics in presbyopic cases.

(10) It is very "exasperating," I know, and also an "inexcusable" blunder, not to have given credit for the discovery of eyestrain, "the greatest discovery in medicine except vaccination and the germ theory of disease" ("Biographic Clinics," Vol 2, page 350); but I beg pardon for the oversight this time and will give due and proper credit in my next.

A. Edward Davis, M.D.

OUR LONDON LETTER.

(From Our Special Correspondent.)

PROF. M'KENDRICK ON PROGRESS OF MEDICAL SCIENCE—PARLIAMENT, AMBULANCES, JUVENILE SMOKING, MEDICAL INSPECTION OF SCHOOL CHILDREN—HEALTH OFFICERS' JUBILEE—NOTIFICATION—HOSPITALS—ITEMS.

London, July 22, 1906.

Special interest attaches to the graduation address at Glasgow University this year. It was delivered on Tuesday by Professor McKendrick, who intimated that it was also his valedictory address before resigning the chair he has occupied for some thirty years. He took as a subject the progress of medical science during his professoriate, passing in review some of the most striking advances. Preventive medicine had enormously reduced the mortality from fevers and infectious diseases, aseptic surgery had saved thousands of lives annually and made operations successful which were at one time impossible. Gynecology had become a well-defined branch, and bacteriology had assumed importance in every department of scientific medicine. Marvelous as were the discoveries of these thirty or forty years, the professor thought we are still on the road to others, some of which may perhaps revolutionize the medical art. Ideas, he said, preceded discoveries, and the best work is done by the thinker, who meditates over familiar phenomena, invents a working hypothesis to explain them, then appeals to observation and experiment. His experiments are thus not haphazard; he knows what to try. Thus great principles are first established. Practical medicine, he continued, is not a science, but an art based on the sciences of physiology, pathology, and pharmacology. It seemed to him that these three are becoming more and more closely connected, are fertile in new ideas which must influence our conceptions of disease and its treatment. The interdependence of organs is recognized, and it is seen that an organ may have more than one function. Further, morbid changes have a beginning, and if we could detect them at the very commencement we might perhaps modify their progress, if not avert them. Prof. McKendrick then reviewed some of the protective arrangements possessed by the body for resisting attack, and went on to remark how one idea leads to another, *e.g.* leucocytes were observed in the blood by the early microscopists, but it is only in recent days their importance has been suspected. Their ameboid movement was first observed, then their tendency to aggregate in inflamed parts, then the phenomena of phagocytosis. So the life history of microorganisms was studied and soon it was found that they might not be injurious *per se*, but by producing a poison. The next step was that the toxin in some mysterious way produced an antitoxin, by cultivating which remedies have been found for diseases caused by microorganisms. Nor is this the end of the wonderful story. It is found that in serum there may be bodies derived from the tissues which have antibacterial powers—opsonins. A new field of serum therapeutics seems to be

opening. Another idea referred to by the professor related to the ravages of disease revealed in the post-mortem room. It seemed a wonder, sometimes, not that the patient died of the disease, but that he lived so long with it. But the changes had been going on for years. Yet much may be done. He confessed, as he grew older, the crude scepticism of early days gave place to the recognition of how much can be done. Study, he said, *e.g.* the problem of helping a weak heart with digitalis. It will test your physiological knowledge. Examine your cases with a physiological and pathological eye, not through the medium of a text-book and descriptions of typical cases. Then use your remedies with pharmacological knowledge, with a definite idea how they can do good, and you will find satisfaction in your work.

After much desultory talk about our street ambulance service, the House of Lords has considered the matter on account of a bill proposed by the County Council. Everyone acknowledges that London should have a good service, but it seems undesirable to duplicate what exists. It would be better to coordinate. It was stated on behalf of the government that a conference would be summoned of the three bodies concerned, viz., the Home Office, the Police, and the County Council. It was thought that a scheme could be formulated by such a committee dealing with the subject as a whole, and their Lordships agreed to wait for it until next year.

A committee of the Lords has also reported in favor of severe measures against juvenile smoking, and of two bills before the House prefers the more restrictive. It is proposed to penalize the seller of tobacco or cigarettes to boys and to fine the juveniles themselves, besides authorizing the police to confiscate the treasured weeds of the youths they catch indulging in the forbidden pleasure.

In the House of Commons the question of the medical inspection of school children has received further attention. An important point was whether such inspection should be compulsory, and local authorities required to carry it out. Whether also it should be enough to examine the children when they began their schooling, or whether it should be repeated, become in fact supervision by the medical men at the expense of the ratepayers. Many diverse opinions were emitted. One member said that at Dundee a voluntary inspection revealed that there were 1,500 scholars with heart disease and 7,000 with defective sight. Sir W. Collins said that when the County Council took over the School Board's work there were two medical officers and six oculists on the staff. At once twenty-three medical men and six nurses were added, and these will be shortly much increased. He thought an anthropometric survey might be postponed. Nearly all the speakers professed sympathy but there were grave doubts expressed about the alleged degeneration of the race and the necessity of providing every child with free meals, free medical attendance, spectacles, and so on.

A deputation got up by the British Medical Association on this subject waited on Mr. Birrell on Monday and urged that inspection should be made compulsory. Dr. Buick said voluntary examinations had proved that a great number of children were inefficient, and the medical profession was convinced that much disease could be prevented by inspection. Sir V. Horsley advocated the Education Board dealing with the matter, and said leaving it to the local authorities would not satisfy the profession. Sir W. Broadbent went so far as to say diseases would be recognized in childhood and treatment would influence their moral and physical efficiency in later life. The minister in reply said, however desirable inspection might be, their scheme would not effect their object, and then he raised the specter of the rates. Yesterday, however, his tone changed. He went to a drawing-room meeting on behalf of the League for Physical Education. By that time his fear of the ratepayers seemed to have vanished and he told this select audience that he used to regard the three R's as sufficient for compulsion, but had since learned much. Now he spoke for a full curriculum for all healthy children, medical supervision of the unhealthy, defective, or weak, and not only instruction but plenty of play for all to improve the breed of the race. So he anounced his intention of a medical examination on entrance and a health register to be kept in every school.

The Incorporated Society of Medical Officers of Health celebrated its jubilee by a visit to Bath. Sir Shirley Murphy presided over the public meeting on Saturday, and a paper was read by Mr. Loch, in which it was stated that the income of London Charities (excluding those of a spiritual kind) amounted to £6,519,529, while the Poor Law expenditure reached £2,250,406, excluding that of the Asylums Board. He emphasized the fact that with better health and lower mortality, there was more dependence on the Poor Law and increased expenditure of charities. Dr. Weatherley of Bath advocated compulsory notification of phthisis and declared voluntary notices useless. He pronounced it a "crying scandal" that only about twenty-three Boards of Guardians were doing anything to stamp out the disease, and there were six hundred and seventy-nine boards in the country.

Notificationists are active in all directions, and most of them in favor of compulsion. At the Sanitary Congress it was proposed to establish an imperial system by which information should be officially transmitted between the various parts of the empire. One paper went so far as to advocate an international system of notifying the chief infectious diseases, which would doubtless be useful from an epidemiological point of view. There is already a nucleus of such a system in the reporting of cholera and plague, but whether other nations would consent to extend it seems very doubtful, if not quite improbable. At the International Sanitary Congress of 1903 the delegates opposed any extension.

You will remember the case I reported to you last March, in which an action was brought against Dr. Currie (and his partner) for alleged negligence in attending a lady in her confinement. It was contended that he conveyed to her scarlet fever. The jury found a verdict for the doctor, adding a rider that he had taken all usual precautions. On Wednesday the case was brought before the Court of Appeals on the pretense of misdirection of the jury, and that evidence had not been called as to the usual precautions taken by medical men. Counsel having spoken on behalf of the plaintiffs, the court dismissed the appeal without hearing counsel for the doctors.

Princess Christian of Schleswig-Holstein on Saturday went to Beninden, Kent, and laid the foundation stone of the first sanatorium for workers suffering from tuberculosis. The Princess is president of the national association for promoting such sanatoria. This is the scheme which the workers are to make self-supporting and which the friendly societies and trade unions undertake to maintain when established. The present building is to have 200 beds and is estimated to cost £50,000, including the land, about 250 acres. So far the workers have collected £1,000. The affiliated societies will give £65 per bed per annum.

Princess Louise, Duchess of Argyll, accompanied by the Duke, presided at an afternoon meeting of friends of Charing Cross Hospital, at the Hotel Cecil, to hear Lord Kilmorey expound a scheme for organizing local interest in the hospital. He said in its busy district there were more than 5,500 front doors giving access to the occupiers, who were prepared to give to many objects hundreds of miles away, and only 165 subscribed to this charity in their very midst, chiefly because they were never asked. He proposed to divide the district into twelve divisions, each with a committee to obtain from local people a penny a day to establish a maintenance association. The Princess agreed to be patron of the association and Lord Kilmorey took the part of its first president.

Dr. Wm. Henry Perkin, the discoverer of the coal-tar colors, has received the honor of knighthood. He first obtained mauve from tar in 1856, and for eighteen years continued at work on the subject. A jubilee of the coal-tar color industry is to be held on the 26th, when Sir W. H. Perkin will be presented with addresses from British and foreign societies.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

DENGUE EPIDEMIC—BLOOD FINDINGS IN THE DISEASE—INFECTION WITH PARAGONIMUS WESTERMANII—SANITARY IMPROVEMENT AT BILIBID PRISON—CHOLERA—EVILS OF THE ANTI-CANTEEN LAW.

MANILA, P. I., June 16, 1906.

WITH the advent of the rainy season, which set in a few weeks ago, dengue made its appearance in Manila. The disease has been increasing by leaps and bounds and has now almost reached epidemic proportions. The present outbreak is characterized by profuse typical eruptions in almost every case. This latter is a noteworthy point, because it has frequently happened in the past that an outbreak occurred in which no eruption was observed.

In this connection it might also be of interest to recall the extensive laboratory work which has been done at Cavite during the past six months by Dr. E. R. Stitt of the United States Navy. He has been unable to verify the observation of Graham and others that a micrococcus was the cause of the disease, and, furthermore, he was unable to prove the mosquito transmission by the methods that have been published up to the present time. In the experience of Dr. Stitt, the most characteristic blood findings in dengue are the absence of protozoa, the leucopenia, the diminution of the polymorphonuclears, and the great increase in the small lymphocytes in the early part of the

disease, which is followed by a greater proportion of large lymphocytes in the final stages of the disease, and a great increase in the mononuclears during the convalescence.

At an autopsy which was recently held upon one of the prisoners at Bilibid Prison, the *Paragonimus westermanii* was found, not only in the lungs, but in all the abdominal organs, and in the brain a particularly large number were found.

The Bureau of Health has been in charge of the sanitation of Bilibid Prison for over six months now, and it will perhaps be of interest to observe the reduction which has taken place in the mortality at that institution. In August, 1905, the mortality was at the rate of 191.79 per thousand per annum, while the average mortality for December, January, February, and March was 58.99 per thousand per annum, from which it will be seen that a reduction of 132.80 per 1,000 has actually taken place. This latter mortality is, of course, much higher than it should be. The average death rate for the Philippines is almcst 20 per thousand less than this, and when it is considered that the outside death rate is effected by infant mortality and the aged, and that the inmates of Bilibid are mostly strong, robust men in the prime of life, it will be seen that a still further reduction in the death rate should be effected. The mortality, for instance, at the Ohio State Penitentiary is 15 per thousand. In a tropical climate, and more particularly in the present condition of the prison, it is probable that it will never be possible to reduce the rate as low as that of similar institutions in the United States. The great improvement in the mortality was brought about principally by a more rigid daily inspection of the prisoners, and an insistence upon more frequent hospitalization than has heretofore been the case. The great importance of isolating and treating incipient cases of tuberculosis, dysentery and similar diseases will be readily appreciated. It is quite probable that there is no instance of the value of preventive or prophylactic medicine being more conclusively proven than by the figures cited.

It is believed that important factors still influencing the mortality rate are overcrowding and the present insanitary method of collecting and disposing of excreta. The first factor can be removed only by providing more room and the second by the installation of a sanitary plumbing system.

Many of the deaths in Bilibid are due to pneumonia. It is believed that many cases can be indirectly traced to the present insanitary bamboo bunks. These latter are infested with bed-bugs, ants, rats, mice, and other vermin, and prisoners frequently, in preference to sleeping in these bamboo bunks, will climb down during the night and lie on the cement floor, thus contracting colds, breathing the foulest air, and otherwise lowering their resistance to any pneumonia organisms that may happen to be present. To remedy this, it is proposed to install sanitary bunks which will be constructed of iron pipe frames to which will be attached canvas hammocks, which can easily be taken down from time to time and disinfected and washed.

A case of cholera made its appearance during the week among the troops at Fort William McKinley. The disease was probably contracted at the town of Pasig, which is but a short distance away.

Owing to the anti-canteen law a great many low dives have sprung up at Pasig, and they are much frequented by the soldiers. The sanitary control of the town is not vested in the military authorities, but in the municipal officials, whose judgment about sanitary matters is no doubt often influenced by the sources from which much of the town revenue is derived. This is another illlustration of the undesirable conditions that may arise as a result of the anti-canteen law. The soldiers have been refused permission to visit Pasig, and no further cases have made their appearance among them.

Behavior of Foreign Bodies in the Nasal Cavity.—Santi Pusateri has studied critically and experimentally the behavior of foreign bodies when introduced into the nasal cavities. Such bodies may act simply by pressure on the surrounding tissues, producing atrophy of the nasal bones, necrosis of the cartilages with formation of new connective tissue, deviation of the septum and increase in the size of the cavity of the nose. Again it may set up an inflammatory reaction which results in encystment after some time, and the formation from the nasal secretions of a stratified calculus. After a few days of presence in the nose it may set up suppuration and then form a calculus. Or the stagnant purulent secretion may produce an infection of the cribriform portion of the ethmoid extending into the cranial cavity. The body may become incapsulated in the septum after producing necrosis of that organ.—*Archivio per le Scienze Mediche*, Vol. XXX.

Progress of Medical Science.

Boston Medical and Surgical Journal, August 2, 1906.

Gastromesenteric Ileus.—John M. T. Finney believes that acute dilatation of the stomach and gastromesenteric ileus can not be differentiated clinically; that obstruction to the lumen of the duodenum by the root of the mesentery and the contained superior mesenteric vessels, has been demonstrated, and is probably of more frequent occurrence than has been supposed; that whether this is primary or secondary to the gastric dilatation, or whether this relationship is a constant one, has not been determined; that the diagnosis would appear to be more easy than past failures seem to indicate; that the use of the stomach tube and avoidance of dorsal decubitus offer better results probably than secondary operation, owing to the unsatisfactory conditions existing; that with earlier diagnosis and the early institution of the measures suggested, a reduction of the present high mortality rate can be expected.

Spontaneous Rupture of the Heart in a Case of Senile Dementia.—Harry W. Miller reports the case of a man, 83 years old, who had a spontaneous rupture of the heart as a result of myomalacia cordis, the accident being determined by mental and physical excitement. The infarct, which had existed sufficiently long to show signs of repair, resulted from a thrombus in the anterior coronary artery. The most noteworthy feature of the case was its rarity. Krouskoff reports only three cases in 8,000 autopsies. The site of the rupture in relation to the area of degeneration at the apex of the left ventricle is somewhat unusual, yet it can be correctly designated as a rupture of the left ventricle near the tip, a common location. Odriozola reports rupture of the left ventricle in 96 out of 132 cases which he collected from the literature. The age of the patient, and the resulting condition of the arterial system, are predisposing conditions almost invariably cited in cases of spontaneous heart rupture. The preexisting disease, anemic necrosis, is regarded as a less frequent cause of heart rupture than other degenerative diseases of the myocardium.

New York Medical Journal, July 28, 1906.

The Ocular Factors in the Etiology of Spinal Curvatures.—H. Augustus Wilson discusses the relations that exist between certain forms of acquired spinal distortions and postures of the head. The more extensive the bony changes the less prospect is there for betterment, and remedial measures then employed are at best but palliative. He confines his discussion to the possible effects of acquired postures of the head in using the eyes, whether occurring alone or in conjunction with other recognized causes of scoliosis. He refers to several papers by Gould, from which are deduced certain facts and explanations. It can be demonstrated upon any normal person that a certain astigmatic (glass) lens, placed so that the artificial astigmatism produced shall be at axis 75°, will obscure vision unless the head is tilted 15° to the right, in order to bring vertical objects into clearer vision. If a patient has 75° astigmatism, because of curvature of the cornea, he will be compelled to tilt his head to the right to see clearly. These truths depend upon other factors, such as right-handedness and the presence of an equal or better acuteness of vision of the right eye. If the patient is left-handed he is also left-eyed, and the left eye then becomes the chief factor in the production of head tilting. In the dextral posture the body is curved to the left and the head and neck more curved, rotated to the right, and spirally upward, so that the cervical portion of the vertebral column has three abnormal positions, curves, or twists; viz., a curve with convixity to the right, a rotation on itself, and a spiral twist. These vicious positions are of purely ocular origin. The therapeutics of the functional stages of spinal curvature should be to remedy any existing head tilting and to stop the morbid writing posture by placing the paper opposite the right shoulder, when sitting squarely and upright before the desk, and to incline the desk leaf at an angle of at least 30°. Again the orthopedic surgeon should direct the use of such remedial measures as have been determined as best adapted to securing full, normal function and reestablishing verticality.

Should Cold Baths be Given for Fever in Young Children?—Charles O'Donovan calls attention to some of the drawbacks of cold bathing in children, yet in spite of them he advises the use of cold baths in children, even infants, whenever the high fever and flagging powers point to the possibility of an impending collapse; and the child is to be tubbed, not only once, but whenever the same symptoms return in sufficient severity to call for such treatment. He considers this the only available means to check the rapidly rising temperature of malignant scarlet fever. The proper treatment of convulsions of young children should be the

cold, rather than the hot bath, to reduce the fever and calm the over-excited nervous system of the child. Terror and fright are not bars to its usefulness.

Remarks on Albuminuria, Cylindruria, and Bright's Disease.—S. J. Meltzer says the urine of all normal persons contains minute quantities of albumin. This is physiological albuminuria. A number of individuals have traces of albumin in the urine passed after a night's rest, and more show albumin after muscular effort, but this is still physiological. About one-fifth of all persons have during adolescence some degree of albuminuria; some of these and some other individuals show an orthostatic form of albuminuria; these forms are not physiological. Again, there are cases of simple albuminuria which do not belong to any of the types described. They last for many years without showing any cyclic or postural character. The patients never had or have other symptoms indicating a disease of the kidney, or in fact any other disease. Albuminuria in anemia or in fever, which disappears with the defervescence, may be quoted as an instance of pathological albuminuria which is not of nephropathic origin. However, this is not beyond dispute. The history of the diagnostic value of casts is in some respects a repetition of that of albuminuria. Cylindruria is nearly a normal phenomenon occurring very frequently in normal individuals, and is easily brought about by the same factors which produce albuminuria. Albuminuria and cylindruria resulting from stimulation of the normal kidney are only temporary, but those due to actual disease of the kidney are more or less permanent. Another important difference is that the latter forms of albuminuria and cylindruria are a good deal more extensive than the former. The continuous presence of albumin and casts of different varieties after the patient is put to rest and withdrawn from injurious influences speaks for Bright's disease, but those are not pathognomic symptoms, and only form one link in the chain of signs and symptoms which point to a diagnosis of Bright's disease.

Journal of the American Medical Association, August 4, 1906.

The Hospital Problem.—Bayard Holmes points out what he considers some defects in the hospitals of this country and their management. Having been founded largely from charitable motives, to relieve suffering rather than to restore to health and usefulness, they lack those postoperative gymnastics and hydriatic methods that form so large a part of the treatment in the hospitals of Europe. Our hospital trustees are supreme and the medical staff are their underlings, and it is often impossible for the hospital staff to secure what in their best judgment is essential for the good working of the institution. The use of hospital positions unduly for personal benefit is also criticised, the lack of other remuneration, the hampering of clinical work and of the utilization of the hospitals for instruction, the use of the hospital for the personal aggrandizement of some one overshadowing member of the staff, are all included in the indictment. The hospitals should be a part of the armamentarium of the profession, and it should control them.

The Mouth and Systemic Diseases.—J. E. Power calls attention to the mouth as a favorable place for the incubation of bacteria, the saliva having little or no antiseptic properties, and shows how it is in fact a perfect hotbed of microbes, many of them pathogenic. The conditions of their transmittal to other parts of the organism and the very numerous methods by which infection can be introduced into the mouth from outside, are duly noticed, and cases showing the effect of mouth conditions in producing general disorders are reported. Glandular swellings, cardiac involvement and tuberculosis are specially mentioned as having been directly traced to mouth infection, and the practice of such eminent authorities as J. H. Musser of including mouth sterilization as one of the progressive steps in the treatment of pneumonia is mentioned with approval. Other disorders, such as pulmonary gangrene, and liver disease, connected with oral uncleanliness, are also mentioned, and the importance of the condition of the mouths of both patient and operator in surgical cases is also noted.

The Treatment of Bone Cavities.—J. E. Moore gives his experience with the Moorhof "bone wax," composed of 20 parts iodoform, 40 parts spermaceti, and 40 parts of oil of sesame, which is warmed to 50° C. and poured into the cavity previously prepared, where it immediately solidifies. The cavity must be thoroughly cleansed and washed with 95 per cent. carbolic acid, then in about two minutes the acid should be washed out with alcohol, and must be thoroughly dried before pouring in the wax, which will not fill all the cavities if moisture exists. Moorhof uses a hot blast for this purpose, but it is not essential. Of course, the bloodless method must be employed. When the wax is hardened the periosteum and other tissues are closed with catgut sutures and a dry gauze dressing is applied and held in place by a roller bandage before the rubber bandage is removed. In case there is good periosteal covering no drainage is necessary, and usually primary union is secured. When soft parts come in contact with the wax, temporary drainage is advisable. In case immediate closure is impossible, he still finds this method applicable, and states that it can also be used in case of chronic bone abscess after thorough cleansing and sterilizing. A disadvantage of the method is the expensiveness of the material. The iodoform is the objectionable element, and Moore has experimented with success with the use of iodine flakes in its stead. He gives the following formula: Spermaceti, 8 parts; olive oil, 2 parts; iodine, 1 per cent., the iodine being added after the other material, as heating volatizes it.

The Medical Treatment of Gallstone Disease.—R. W. Wilcox, New York, maintains that gallstone disease is primarily a hepatic disorder, and the congestions and inflammations of the portal system, the infectious catarrhal conditions of the bile ducts, and the faulty formation of bile in the liver, are the things that need to be attended to, and these are purely medical matters. The advantage of spa treatment is in the medical control in such places of the habits and diet, but practically as good results can be obtained at home. The diet should be a mixed one, the meals limited in amount, but at frequent intervals, to insure a constant flow of bile, with plenty of plain or feebly mineralized water at each. Alcohol should be prohibited. Exercise, especially out of doors, is important. He prefers salicylic acid to the salicylates, because it is both a biliary and an intestinal antiseptic, which the salicylates are not. Of the bile acid salts, sodium glycocholate in from ½ to 3-grain doses, as frequently as necessary, is the best. He also speaks well of phenolphthalein as an intestinal antiseptic; acid sodium oleate, salicylic acid, each 1½ grain, phenolphthalein, 1 grain, menthol, ¼ grain, in a pill; this allays nausea, acts as an intestinal antiseptic and promotes peristalsis. From four to eight of these pills in a glass of hot water once or twice daily have proved very efficient in gallstone disease. The elimination of the gallstones of the hepatic variety (bilirubincalcium) is generally rapid. Painless elimination is best achieved by administering amyl valerianate (15 minims in capsule) two hours before breakfast and after supper.

The Lancet, July 21, 1906.

The Influence of an Excessive Meat Diet on Growth and Nutrition.—D. Chalmers Watson in 1905 drew attention to the remarkable increase that had taken place in the consumption of animal food in England during the past fifty years (see MEDICAL RECORD, July 22, 1905, page 152, for abstract). During the past year he has made observations on the influence of a meat diet on the growth and general nutrition, and the paper deals with the clinical results obtained by feeding rats on an exclusive flesh diet. A summary of his results shows that growth is retarded, sterility is induced if the diet is commenced in very early life, the power of lactation is diminished, a permanent weakening of the resisting power of the animal is induced by the use of an excessive meat diet in early life, the animals succumbing to disease at an unusually early age, and there is a high death rate in the offspring of animals fed on an excessive meat diet. The facts recorded have an interesting bearing on the two questions of physical deterioration and high infant mortality, and there is no doubt but that several factors are concerned in their production, the foremost place being given to the question of diet. The defects in diet may lie in one of several directions, and more light should be thrown upon this by experimental medicine. The main interest in his experimental results lies in the clear evidence submitted that an excessive meat diet can itself induce in animals defective general physique, deficient powers of lactation, diminished fertility, and high infantile mortality. He believes that these symptoms are, to an important extent, comparable to those prevailing in the human subject at the present time.

Outbreak of Pneumonia in a Reformatory School.—Thomas Oliver reports an outbreak of pneumonia occurring in an industrial school, in the neighborhood of Newcastle-upon-Tyne, which has an accommodation for 200 boys, and is nearly always full. In all, eight cases of pneumonia occurred in eighteen days, and the ninth and last case, the only fatal one, occurred fifteen days

later. In only one case was the tubercle bacillus found. The youths were all quite well four years after the outbreak. The illnesses were ordinary croupous pneumonia and there was nothing unusual or peculiar in the course they ran. Most of the cases occurred in one large dormitory, in which the sleeping accommodations were overcrowded and ventilation defective. There was nothing to suggest an influenzal origin.

Cessation of the Pulse During the Onset of Epileptic Fits.—A. E. Russell says that, although it is true that such cardiac arrest is not a common or constant phenomenon in epilepsy, it merits greater consideration than it has received. Cardiac arrest may precede the development of the fit, and it is well known that stoppage of the heart for a sufficient length of time will give rise to attacks of unconsciousness and convulsions, the so-called Stokes-Adams syndrome. If observations were made on the pulse at the onset of fits in more cases, he believes it would soon become established, whether such cardiac arrest was of occasional or frequent occurrence.

A Case of Schönlein's Purpura.—Edward C. B. Ibotson reports an interesting case, which illustrates the following points: The combination of wheals and purpura, a combination which is diagnostic if not pathognomonic; a moderate pyrexia at the commencement of the illness; swelling of the knee and prepuce, and rapid beneficial action of suprarenalin.

The British Medical Journal, July 21, 1906.

A Note on the Effect of Bodily Exertion on the Opsonic Index of Healthy Persons.—G. G. Ellett examined the blood of several men training for a boat race, which gave evidence that severe exercise has some influence in lowering the opsonic index, even in healthy persons, in whom there can be no question of autointoxication, as is claimed in the case of the tuberculous patients.

Large Calculus of Ureter Removed by Suprapubic Cystotomy.—Rushton Parker reports the case of a man, aged 49, who complained of pain in, and prolapse of, the rectum with a tumor. The duration of the symptoms had been about six months. Examination revealed a tumor about the size of a walnut, felt with the finger in the rectum. A radiograph of the pelvis showed a distinct shadow of an oval shape suggestive of a calculus. The bladder was sounded, but nothing found, while the finger in the rectum passed between the sound and the tumor. No urinary symptoms had ever been noted. At operation a stone was removed from the right ureter, close to the bladder. It weighed a little over three-quarters of an ounce. Its exterior was blackish in color, presumably due to oxalate of lime, and the surface was sharply serrated. The interior was in irregular layers, or urate of ammonia and oxalate of lime apparently. No urine at all came from the right ureter, while the discharge from the left was normal. It seems likely that the function of the right kidney was seriously impaired. One could not help suspecting stone in the right kidney, but opportunity of submitting the patient to *x*-ray photography was not given.

A Case of Actinomycosis of the Abdominal Wall.—Archibald Cuff reports this interesting case, which was produced by an infected foreign body, which had escaped from the intestine. For at least eighteen months previous to the discovery of the abdominal condition, the man had a decayed molar tooth, which he was accustomed to pick with a piece of straw. He was hardly ever without a piece of straw in his mouth. Three months before he noticed the lump the tooth broke off, and he did not put a piece of straw in his mouth again. The course of events in this case was probably this: A piece of infected straw, bearing spores of the ray fungus, was swallowed by the patient, and a small particle penetrated the colon and entered the abdominal wall, setting up the disease there.

The Value of Calcium Iodide in the Treatment of Ulcers.—G. Arbour Stephens says that the effect derived from the use of this agent was more than could be expected, for its effect in reducing thick, callous edges into thin, healing ones, was little less than miraculous. He reports cases and emphasizes the important part played by calcium in health and disease.

Berliner klinische Wochenschrift, July 16, 1906.

Modern Renal Surgery.—Kümmell contributes a very extensive paper on this subject which is not adapted for reproduction in brief. He reviews the various methods of functional diagnosis and also discusses the results he has obtained in the operative treatment of the various kidney diseases, but most of the paper is devoted to a discussion of the reliability of cryoscopy of the blood as an index of renal efficiency. This method has been attacked by many other authors, but Kümmell continues to regard it as exceedingly valuable, and states that in over a thousand cases he has never found that it led to misleading conclusions. He considers that a drop in the freezing point of the blood indicates that the two kidneys together are not perfectly efficient, and that if the freezing point falls to —0.6, experience has shown that nephrectomy should not be performed A nephrotomy may be done, to be followed later on by nephrectomy if the freezing point improves, and has risen to the normal, but if this does not occur the kidney should not be extirpated. No one method alone should be relied on in renal diagnosis, but as many as possible should be applied, catheterization of the ureters and investigation of the separate urines being especially important. If all the diagnostic means now at our command are utilized Kümmell believes that the diagnosis of affections of the kidney can be made with what closely approaches certainty.

The Early Diagnosis of Tuberculosis.—Blume says that of late it has become the custom to attach less importance to the bacteriological examination of the sputum as a means of early diagnosis of tuberculosis, on the ground that the condition should be recognized, if possible, before the sputum becomes abundant. The author describes a procedure by which he has been enabled to demonstrate tubercle bacilli in a considerable number of cases in which there was neither cough nor expectoration. His method consists in collecting some of the laryngeal mucous on a pledget of cotton on a laryngeal probe and making a smear with this on a slide, which is then stained in the usual way. The histories of nine cases in which this procedure was successfully used are given.

Münchener medizinische Wochenschrift, July 17, 1906

The Part Played by Mine Infections in Epidemics of Cerebrospinal Meningitis.—Jehle, after having investigated the conditions attending epidemics of this disease in several Silesian mining towns, comes to the conclusion that the rôle played by the mines in the transmission of the disease is a very important one. He considers that epidemics of meningitis are the result of the infection of one miner by another while at work in the mines themselves, and that this transmission of the causative organism takes place through the sputum, and the use in common of tools, drinking vessels, etc. The women and children are then infected by these workmen in their homes, young children being especially exposed to direct infection. Miners coming from an infected district are to be looked upon as possible bacilli carriers, and to be treated accordingly. In order to prevent the spread of epidemics, the author believes that it is of the greatest importance to keep miners, whose children are sick with the disease, out of the mines for such a period until it is certain that they can no longer act as bacilli carriers, though there is no objection to their working above ground.

Attempts at Suicide.—Rothfuchs presents a review of 375 cases of attempted suicide observed during the last five years in the Harbor Hospital at Hamburg. During 1903 the official reports showed that in Prussia 7,470 deaths were due to suicide, representing 21 to 100,000, whereas in 1873 the figure was only 11 to 100,000. It is stated that in France the number of suicides increases each year by 1 to 100,000. Of the author's cases, 48 were insane, 13 were suffering from delirium tremens, and 16 others were mentally incapacitated through some form of pathological intoxication; that is, 76 individuals, or 20.26 per cent., were not responsible for what they were doing. Alcohol appeared to be responsible for the largest proportion of these attempts at self-destruction, and the author considers this as one of the most important causes for the modern tendency toward increased prevalence of suicide. Of the 375 cases, 53, or 14.13 per cent., ended fatally. Drowning, shooting, poisoning, and hanging were the favorite methods chosen in the order named, and by far the greater proportion of deaths were the result of the use of firearms. Of the poisons, hydrochloric acid and lysol were the most frequently used agents. In conclusion, the author inveighs against the custom still prevalent in some regions of refusing the ordinary form of burial to suicides, basing his objection mainly on the ground that so large a proportion of suicides through mental disease or for other reasons are not responsible for their actions.

Sepsis in Adults Due to the Bacillus Pyocyaneus.—Rolly reviews the literature bearing on the subject of the pathogenicity of this organism, and describes a case coming under his observation, which, he believes, demonstrates the fact that the bacillus pyocyaneus by

itself is capable of playing the rôle of an invading pathogenic organism in adults, as well as in children. His patient was a woman of twenty-eight years, who apparently was infected through the pregnant uterus, and who died on the eleventh day. The bacillus pyocyaneus was identified during life, both in the blood and in the cerebrospinal fluid. The autopsy revealed, among other conditions, a vegetative endocarditis with metastatic abscesses in the kidney, spleen, intestine, and aorta. In addition, there was a purulent cerebrospinal leptomeningitis and a lobular pneumonia. In regard to the clinical course of pyocyaneus sepsis, the author states that many different types may be encountered; in the present case the meningeal symptoms were the most prominent.

Deutsche medizinische Wochenschrift, July 19, 1906.

Nucleated Red Blood Cells.—Engel discusses the origin and significance of nucleated red blood cells, as well as the mooted point concerning the disappearance of the nucleus of the normal erythrocyte. He agrees with those who consider that the basophilic granulations of the red cell in many instances are the result of disintegration of their original nuclei. It is possible that two varieties of basophilic granulatons exist, of which the one is the result of karyorrhexis and the other is due to degeneration of the protoplasm. The author regards erythrocytes with basophilic granulations as being immature blood cells, which, when they occur in anemia, malaria, lead poisoning, etc., are extruded from the bone marrow into the blood as the result of the toxic action underlying these conditions, just as for example unripe polynuclear leucocytes appear as myelocytes.

Menstrual Fever and Menstrual Sepsis.—Riebold bases his conclusions on a study of 2,000 patients observed during the past two years. As a result of these he concludes that in many cases elevations of temperature occur during menstruation which can not be explained in any of the ordinary ways. This menstrual fever occurs most often on the third or fourth day of the period, though it may be earlier, or may even occur after cessation of the flow. This fever, as well as the leucocytosis of menstruation, the author believes, is due to the absorption by the uterus of toxic or infectious materials. During menstruation the uterus and its contents form a particularly good culture medium for bacteria, and the normal protective power of the vaginal secretion is abolished. The possibility of menstrual infections must, therefore, be taken into account in cases of cryptogenetic sepsis, and the author believes that the process of menstruation is of great significance in the pathogenesis of many febrile disorders. Not only is the not very rare menstrual fever caused by the absorption of bacterial toxins or other decomposition products, but through a similar toxin action numerous affections of the skin and nerves, which are observed during menstruation, such as erythemas, urticaria, herpes zoster, and neuralgias, may be induced. Of particular importance in this connection is the probability that numerous rheumatic affections, especially true cases of polyarthritis and of rheumatic heart disease, may originate in infection or intoxication from the menstruating genital tract.

The American Journal of the Medical Sciences, May 1906.

The Clinical Significance of the Urinary Nitrogen.—James Ewing and C. G. L. Wolf refer to the work of Folin. He made a most complete study of thirty normal urines, whose daily nitrogen content ranged from 2.7 to 16 grammes. If one finds in examination of a urine ratios outside these limits, it may be concluded that the metabolism is not normal. A pronounced metabolic disturbance may be expressed by slight subjective symptoms only, when the process may, at the same time, be giving an expression of disorder most forcibly through the urine. It is true in very many instances that there is a quantitative relationship between the variation from the standard and the degree of metabolic disturbance. There are, however, numerous exceptions to this. The possible influence upon the type of metabolism of certain physiological conditions, such as pregnancy, lactation, infancy, old age, and insufficient amounts of food to cover the heat exchange, is an important question. The estimation of single components of the urine is of little clinical value. The picture of the total nitrogenous excretion and its partition offers far more reliable clinical information. The writers declare that they are by no means certain how far the present knowledge of this complex subject will render this type of urinary analysis practically available to the clinician.

The Diagnostic Significance of Persistent High Arterial Pressure.—Theodore C. Janeway believes that with a 12 cm. armlet there can be little question that under conditions of physical and mental rest the upper limit of normal systolic pressure—the pressure necessary to obliterate the pulse wave in the bracial artery—may be taken as 145 mm., the lower limit 100 mm. He thinks it wise, when dealing with new patients, to consider no pressure below 160 mm. pathological. Marked and lasting elevation of the general level of blood pressure in any individual is a clear-cut and important disturbance of his normal circulatory physiology. After discussing a large series of cases in which there was persistent high arterial pressure, the writer declares the important point to be the physiological picture of chronic arterial hypertension as a type of cardiovascular disease, usually secondary to chronic Bright's, but at times unassociated with it. Many of the dangers to which the patient is subject, whether he be a nephritic or not, arise from this hypertension. The accurate measurement of blood pressure by the sphygmomanometer must prove a valuable addition to the methods of physical examination.

A Preliminary Study of Visceral Arteriosclerosis.—Harlow Brooks declares that the presence of diminished visceral function, with occasional and otherwise unaccountable elevations of the blood pressure, should, particularly in connection with possible etiological factors, lead to a suspicion of some localized, if not general, area of arterial disease. When, too, there is pain of the peculiar anginal character, location in some special organ may be within the range of possibility. At present diagnosis by the usual methods becomes possible only when the time of prevention or successful treatment is usually passed. The writer presents a series comprising 400 consecutive cases of arterial disease as they have appeared in his personal necropsical service. Disease of the coronary arteries predominates. Next in frequency are the arteries of the brain. The renal vessels appear third in rate of occurrence. Then follow the vessels of the pancreas, the liver, the splenic arteries and the vessels of the lungs. The first effect of the arterial disease appears in the parenchymatous tissues supplied by the vessels.

The Anatomy of the Parathyroid Glands.—John Rogers and Jeremiah S. Ferguson have found that the most convenient method for finding the parathyroid gland is to begin the dissection at the back of the pharynx. To do this, the larynx, trachea and esophagus, with the attached great vessels of the neck, and the thyroid and parathyroid glands are removed in one piece. The parathyroid glands generally lie behind and to the inner side of the lateral thyroid lobes. They are small, and they rapidly decompose, or rather undergo apparent autolysis. These bodies are flattened bean-or-kidney-shaped, generally surrounded with fat, and vary from a microscopic size to a diameter of one-quarter to three-eighths of an inch, rarely larger. Their color is a red or yellowish brown. The writers have found parathyroid glands in subjects of all ages. In infants they were a trifle larger in proportion to the size of the subject, and were thus more easily located than in adults.

Observations Upon the Form of the Red Blood Corpuscle of Man.—Henry E. Radasch concludes that: The majority, if not all, of the circulating cells are bell-shaped, and not biconcave. Their presence in the adult body, as well as that of the fetus, is shown by a study of the placenta. Their presence in the fetus and infant seems undoubted, as shown by their abundance and uniformity in shape and size, in the fixed tissues. Upon contact with the air the bell-shape is changed to the biconcave, the result of collapse. This is shown by the fixation of blood that has not been exposed to the air, on the one hand, and blood that has been exposed, on the other.

Vaccination Against Tuberculosis Through the Digestive Tract.—M. E. Roux and Vallée, in order to confer immunity upon calves, fed them with tubercle bacilli which had been killed. In November, 1905, the calves were made to swallow small quantities of living tubercle bacilli in order that they might become infected. Sometime later these animals reacted to tuberculin. Still later they failed to react. These investigators then injected virulent bacilli into the veins of these animals. They proved resistant, while the control animals died of generalized tuberculosis within a few weeks. This experiment shows that the calves were made immune against tuberculosis through the digestive tract following the first ingestion of bacilli. These experiments are not yet completed. —*Le Bulletin Médical.*

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-seventh Annual Meeting, Held in Boston, June 5, 6, 7, and 8, 1906

(Special Report to the MEDICAL RECORD)

(*Concluded from page 198*)

SECTION ON DISEASES OF CHILDREN.

Fourth Day—Friday, June 8.

Superstition in Teratology with Special Reference to the Theory of Impressionism.—Dr. EDWIN TAYLOR SHELLY of Atchison, Kansas, in this paper noted and defined the various theories entertained from time to time by the ancients in regard to the origin of fetal defects and deformities. He maintained that the maternal impression theory was both logically and biologically untenable. An appeal was made to the profession to try to uproot this popular superstition, not only because modern science demands it, but especially because innocent, sensitive mothers should be spared the awful crushing responsibilities which belief in this cruel notion so wrongfully inflicts upon them.

Constitutional Low Arterial Tension in Children.—Dr. LOUIS FAUGÈRES, Bishop of New York City described this condition as one probably having its origin in the nervous system, though the symptoms are circulatory. Young people with this defect presented habitually a very low arterial tension, so that the pulse, if found in other individuals, would suggest the prostration of acute or chronic disease. The condition was described as an habitual one. There was no heart lesion, no cardiac symptoms such as shortness of breath, or dropsy, and the kidneys presented no abnormality of function. The defect seemed to be in the peripheral circulation, due to a vasomotor relaxation which failed to produce the back pressure on the arterial system that was necessary for a normal tension and a proper cardiac stimulation. To differentiate such a case from a case of cardiac weakness it was pointed out that it was only necessary to make a demand upon the circulation by active exercise, or to observe the response in the case of acute disease. Such children were better as the result of mental and physical activity. The object of recognizing the condition was to place it in the category of constitutional conditions and not treat it as an accompaniment of a supposed anemia, cardiac disease, or as the constitutional effect of some local disease. The error likewise must not be made of confusing the condition with primary, or with secondary low arterial tension; the former having for its basis a true failure of the integrity of the circulatory apparatus; the latter representing an exhaustion due to the exorbitant demands of prolonged high arterial tension.

Dr. ARTHUR W. FAIRBANKS of Boston cited a case which had puzzled him, and suggested that the reader of the paper could throw some light upon it. The child had entered the hospital with enteritis. This had improved, but the child gradually became cyanotic, the whole body becoming more or less blue. The pulse was 80 and remained the same until death. No post mortem had been secured.

Value of Small Amounts of Human Milk in the Treatment of Infantile Atrophy and the Infections of Infants.—Dr. F. P. DENNY of Brookline read this paper, emphasizing the value of human milk in cases of infantile atrophy or any infection where the life of the infant was threatened. He assumed as a working basis that the human milk was of value in these conditions through the action of ferments. His experience had been chiefly at the Infant Asylum in Boston. The sick babies seldom had more than three nursings a day and four bottles. Only the sickest babies were nursed, and usually improvement began within a few days. This was attributed to the few ounces of breast milk received during the day. Cases were cited in which everything was done in artificial feeding to nourish the child, but in which the only hope lay in securing breast milk. In one case a wet nurse could not be obtained, and an effort to have a woman nursing her own child draw off some milk was successful. About three ounces of breast milk were given on the first day, resulting in a marked improvement. The practice of wet-nursing as now carried out should be revised. It was poor practice and not right to have a woman abandon her own baby for the nusing of the sick baby.

The Wet-Nursing of Foundlings a Pernicious Practice.—Dr. WILLIAM T. WATSON of Baltimore severely criticised this practice, and cited an instance occurring in Baltimore in which the nurse acquired syphilis.

Dr. H. MCCLANAHAN of Omaha cited a case in which a small amount of breast milk secured for an artificially fed baby enabled the infant to pass the critical point in its illness. Relative to the second paper, while he did not think foundlings should be deprived of any measure conducive to their well-being, he thought a satisfactory plan was not to allow them to be nursed until after three months of age, by which time if syphilis were present it would be manifest.

Dr. I. A. ABT of Chicago agreed that breast milk would tide over a great many sick children.

Dr. THOMAS MORGAN ROTCH of Boston endorsed Dr. Denny's estimate of the value of human milk in the feeding of infants with atrophy and other infections.

Dr. WATSON, in closing the discussion of his paper, emphasized the fact that he was speaking only of the practice of wet-nursing foundlings. In the case reported the baby was the child of a prostitute. He emphasized the fact that the syphilization of innocent women was inherent in the system and could not be prevented by the most rigid inspection; also that infection could be communicated by the most minute lesions in the baby's mouth and of the mother's breast.

Some Unheeded Principles Involved in the Dietetic Management of Infants in Hot Weather.—Dr. GODFREY R. PISEK of New York City presented the following conclusions: (1) In warm weather keep a light woolen garment over the abdomen to prevent sudden chilling of the skin and consequent heat retention by suppression of perspiration. (2) Bathe infants twice daily. (3) Give plenty of cool boiled water to drink, to replace that lost by evaporation. (4) Pasteurize the food to retard its decomposition. (5) If the weather is close or muggy, or the humidity is high, dilute the food with one-half boiled water. In very humid weather, with high temperature, stop milk altogether, and feed gruels until the humid condition is past. (6) On warm, humid nights do not give milk feedings, because the humidity is higher at night than in the daytime. (7) For diarrhea give calomel or castor oil to eliminate decomposing food. Stop all milk feedings temporarily. If the air is hot, but dry, milk feedings may be resumed quite rapidly. If the relative humidity is high, feed gruels to reduce heat production and also to starve out putrefactive bacteria and cautiously get back to the milk feedings. (8) Provide a circulation of air, as stagnant air soon becomes saturated with water vapor and no more perspiration can evaporate and absorb heat.

Dr. R. W. HASTINGS of Brookline spoke of the installation in one of the local hospitals of a plant the object of which was to freeze out the moisture of the air and make possible the bringing into the wards of air at a temperature of 70° with a humidity of 50; in other words, bringing to a baby in July and August a temperature and humidity like that of October.

Dr. SAMUEL AMBERG of Baltimore detailed a number of observations, the results of which seemed to be in accordance with Moro's observations, according to which the bactericidal power of the serum of breast-fed infants markedly exceeded that of artificially fed ones. But the variations observed within the single groups did not permit us to ascribe the higher value purely to the peculiar kind of

food given. It seemed that the state of the nutrition and the constitution might play a rôle in regard to the opsonic contents of the blood of infants.

Cerebral Palsies.—Dr. William J. Butler of Chicago, in presenting this paper, stated that the etiology of cerebral palsies in individual cases was not always easy to determine, because of late observation of the cases, or because autopsy findings obtained long after onset of the disease may, instead of the initial lesion, show secondary pathological changes. Prenatal palsies, it was stated, were due either to development defect or to vascular lesion. Birth palsies were due to trauma of the child's head, whether from prolonged pressure or unskilled forceps delivery. Asphyxia might be an active factor. Postnatal palsies were said to result from (1) trauma, resulting in hemorrhage and sometimes brain contusion; (2) vascular lesions, hemorrhage, embolism, or thrombosis; (3) inflammatory changes; (4) rarely a tumor. The pathological changes of infantile cerebral palsies were to some extent similar to the changes found in adults.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, May 14, 1906.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Rabies and Its Etiology.—Dr. Ira Van Gieson, after discussing the possibility of the occasional spontaneous development of rabies in dogs and other animals, spoke of a new, rapid, and certain procedure for the detection and study of the Negri bodies in hydrophobia. This method was particularly valuable in making the diagnosis of street rabies in dogs, as the whole procedure could be completed in two or three minutes. The method consisted of two steps: First, the preparation of a form of smear of the central nervous system; and, secondly, the application of a new staining solution. The important part of the method was the preparation of the smear technique, which was valuable not only for the study of rabies and the Negri bodies, but for the normal and pathological histology of the nervous system in general. The speaker had used this method for several years in the study of the nervous system, particularly in the investigation of the normal structure of the neuron bodies, and in their degenerative changes in a variety of nervous and mental diseases, and he was at present attempting to apply the technique in the study of the neurofibrils. If smears of the nervous system were made by the ordinary fashion of preparing blood smears, they were of little or no value. If, however, a portion of the gray matter, say the size of a bird-shot, was placed on one end of the slide, then covered with a cover-glass, gently squeezed out with the ball of the finger, and the cover-glass shifted across the slide, very beautiful preparations of the neuron bodies, with their dendritic and axonal prolongations, might be secured. The method was particularly valuable in recognizing pathological changes in the nervous system, and determining the plan of technical procedure for the subsequent study of sections. In its application to the study of the Negri bodies, these squeeze smears, dispensing with the time and trouble of preparing sections, might be fixed while moist for a few seconds in methyl alcohol, or dried in the air. The smears were then stained by pouring a few drops of the staining solution over them, and held over the flame until the dye steamed. They were then rinsed, dried in the air, and this finished the procedure. The stain was prepared as follows: Add to 10 c.c. of distilled water, two drops of a saturated alcoholic solution of rose anilin violet, and two drops of a saturated aqueous solution of methylene blue, diluted one-half with water. The Negri bodies took a distinctive deep crimson color, with their chromatin particles blue. Dr. Van Gieson then described and illustrated with charts the structure of the Negri bodies, and stated that this method, in the hands of Dr. Williams, of the Research Laboratory of the Board of Health, had added very materially to the knowledge of the structure and significance of the Negri bodies. He also referred to some experiments made in conjunction with Dr. Poor to determine the significance of these bodies. These experiments consisted in subjecting portions of the nervous system of rabid animals to various chemical agents, with a view to destroying either the bodies or the rabic virus, which could be confirmed by animal inoculation.

A Study of Seventy Cases of Brain Tumor.—By Dr. Arthur Conklin Brush of Brooklyn. (See page 215.)

Aphasia.—Dr. Edward D. Fisher read a paper on this subject, in which he said that aphasia was divided properly into motor and sensory, both functional areas of the brain being necessary for the acquisition of speech. A receptive center was necessary for hearing the spoken word, and also a motor center to translate the memory of words into active expression. Speech was synthetic; that is, while its acquisition was essentially through the hearing and motor centers, and these were probably the only necessary means, still, the sight of the written word, as we later acquired the power of reading and writing, aided largely in speaking, and in aphasia might be an avenue for the reacquirement of the impaired function. We could include as aids to speech also our general information of the nature of the subject or object to be spoken of. Motor aphasia, Dr. Fisher said, was not always absolute. Some few words or expressions might remain, as, for instance, yes or no; but frequently, in those cases, the answer to all questions, whether requiring a positive or negative reply, would be yes or no. A peculiarity of some of these patients, again, was their ability to sing some familiar song, correctly carrying the air or joining in a chorus, although unable spontaneously to speak more than a few words. This was evidently a purely mechanical process, various memory centers sending through association fibers impulses to the motor centers for speech. In many cases of motor aphasia incomplete in character, and associated with right hemiplegia, there was considerable amnesic aphasia, *i.e.* a loss of the memory of the names of things, with no impairment of the understanding of them when spoken. This was due, probably, to the involvement of the fibers in the island of Reil which had come from the first temporal convolution to the third frontal. The speaker mentioned an interesting instance of a certain small residuum of speech being left in a case of motor aphasia. The patient was a woman, about eighty, who could only say in reply to any question, although she understood it, "The Bishop to himself hath said." It was impossible to learn where she had obtained this expression. It was probably some vivid or last impression, heard or read just before the onset of a slight apoplectiform seizure. Agraphia, Dr. Fisher said, was almost invariably present in amnesic aphasia, showing the secondary and subsidiary relationship of writing to speech itself. It would be difficult to think of agraphia as other than motor, *i.e.* a loss of the memory of the necessary coordination of the hand muscles for writing. In word deafness we might have perfect power of speech, although the patient did not understand when spoken to. Still, in many such cases we had a form of paraphasia or jargon speech, which was not perceived by the patient, as he was word deaf. In paraphasia with a lesion in the motor or adjoining centers the speech might also be of this jargon type; but under those conditions the patient recognized it as such. The commonest form of aphasia was motor, with some amnesia and agraphia, the lesion involving the subcortical portion of the third frontal convolution, and the Island of Reil.

Dr. William M. Leszynsky said there was one point in regard to the subject of brain tumors that should be emphasized, particularly to the general practitioner; namely, that every patient, young or old, who complained of con-

tinuous headache, either with or without vertigo or vomiting, should be subjected to an examination of the ocular fundus. The importance of this was evident, for although optic neuritis did not occur in every case of brain tumor in the early period of the disease, it did occur, sooner or later, in from 80 to 90 per cent. He could recall a number of cases in which the patients were totally blind when they first came under his observation, the symptom resulting from an optic neuritis which was primarily due to a brain tumor. Dr. Leszynsky said he had seen six cases of brain tumor during the past year, and three of them had come to autopsy. Two of these cases were rather remarkable, and presented the following analogous features: The patients were intelligent young adults; both had frequent attacks of intense headache, vomiting, delirium, and convulsions; a high degree of bilateral papillitis accompanied by early, total, and permanent blindness; astereognosis, without any disturbance of general sensibility; absence of paralysis involving the extremities; only a slight, transient hemiparesis. The diagnosis of brain tumor involving the right hemisphere was made, but the exact location of the neoplasm could not be determined *intra vitam*. In both cases the tumor was found in the right lateral ventricle, and proved to be sarcomatous. Dr. Leszynsky said that in another case which was under his observation at present the patient was a girl of twelve years, whom he first saw with her physician the early part of last spring. She then showed all the indications of a brain tumor; a correct localization was made and an exploratory operation advised. After several months' delay, during which time the patient became totally blind, an operation was consented to, and a subcortical cyst was found involving the Rolandic area. Prior to operation this girl, in addition to her blindness, was completely paralyzed on the affected side of the body. Immediately following the operation the paralysis began to improve, and the only symptom that now remained was the blindness. In that case, the speaker said, if the operation had been done early, the patient's sight would have been saved. In speaking of brain tumor of traumatic origin, to which Dr. Brush had referred in his paper, Dr. Leszynsky said he recently saw a man who gave the history of having received a blow over the right temple with a man's fist two years before. The blow staggered him, but he did not fall. A few weeks later he began to complain of somnolence, with occasional attacks of headache and vomiting. When he entered the hospital he was blind, and an examination of the eyes showed choked disks. A diagnosis of tumor involving the right hemisphere was made, and an exploratory operation was under consideration when the patient suddenly died. At autopsy it was found that a spiculum of bone had broken off at a point just about an inch above the internal auditory meatus and had perforated the dura, and from this a large tumor had developed, which pressed upon the temporal and parietal lobes of the right side. The case would have proved an ideal one for operation. As to the treatment of brain tumor, the speaker, after referring to medication, said that in some cases lumbar puncture had given relief, while in others it had aggravated the pain, and even produced death. It could not be looked upon as a safe measure in these cases. The decompression operation, as practised by Cushing of Baltimore, was of distinct value in relieving the pressure symptoms, and even the optic neuritis. In dealing with cases of aphasia, Dr. Leszynsky said that a guarded prognosis should always be given as to a return of the power of speech.

Dr. Calvin F. Barber of Brooklyn said that, in operating on these cases, it rested with the surgeon whether to make a bone flap or remove the bone entirely. Both measures had strong advocates, and doubtless both had their advantages. Personally, the speaker said, he was in favor of removing the bone entirely, and leaving it out. This did no harm, as the uncovered section of the brain became well protected in the course of time, whereas one objection that might be raised against the use of the bone flap was that it frequently gave rise to necrosis. In the removal of tumors of the brain, Dr. Barber said, a sufficiently large section of bone should be removed to enable the operator to work safely. The removal of tumors that were circumscribed and favorably located was comparatively easy. Those located in the region of the medulla were the most difficult of access. The speaker said he did not consider it advisable in every case to incise the dura at the primary operation, and he could recall cases in which the mere opening of the skull brought marked relief to the patient. He did not have much fear of sepsis in these operations, and had never seen it. He agreed with Dr. Leszynsky that trauma was at times the causative factor of brain tumor.

Dr. J. Ramsay Hunt, in speaking of the diagnosis of tumor of the brain, emphasized the importance of other pathological conditions that produced the general and focal symptoms of central neoplasm. Among these he mentioned acquired internal hydrocephalus, syphilis, and toxic states of obscure nature. Nonne had recently called attention to the importance of this group of cases under the title of pseudotumor of the brain, and had recorded cases, with autopsy, in which no pathological lesions could be demonstrated which would explain the symptoms observed during life; also cases which were clinically tumor, but in which the symptoms cleared up entirely, and where syphilis could be ruled out. In this connection, Dr. Hunt said, he wished to call attention to chronic progressive softening of the brain, two instances of which had come under his observation. In one, a localized parietal arteriosclerosis, situated at the junction of the internal carotid, middle cerebral, and posterior communicating arteries, had induced a gradual and successive obliteration of the central perforating vessels of the anterior perforated space, with small areas of necrosis, cavity formation, and sclerosis in the corpus striatum, optic thalamus, and internal capsule. The successive obliteration of the central vessels had occurred in such a way as to produce a hemiplegia, with sensory irritative symptoms of very gradual development, involving, first, the face, then the arm, and later the leg, simulating the progressive lesion of a tumor. In the other case a progressive hemiplegia developed on the right side, with all the general symptoms of brain tumor, including optic neuritis. Post mortem, the vessels of Willis were found free from sclerotic changes. The small, multiple foci of softening which were present in the internal capsules and basal ganglia on both sides were referable to arteriosclerotic occlusions of the central perforating vessels. The optic neuritis might have been due to diabetes, which was present. As regarded surgical intervention in cases of cerebral tumor, Dr. Hunt thought that an exploration was not only justifiable, but indicated in all those cases in which the probable localization could be determined, and if the cerebral or basilar situation of the growth did not preclude absolutely the possibility of removal. Even if clinically the symptoms indicated a subcortical growth or deep-seated tumor, but with focal symptoms referable to the superior or lateral aspect of the brain, an exploratory procedure would be advisable, for even if the growth could not be extirpated, the relief of tension would tend to favorably modify the general symptoms, and preserve the optic nerves. In cases of nonlocalizable and inoperable brain tumors the speaker thought that the palliative operation should be performed earlier and more frequently than was now the custom. Cushing's procedure of decompression, forming a temporal or occipital muscular flap to prevent the formation of a hernia cerebri, was a most admirable one, and should be accompanied with but little danger.

Dr. L. Pierce Clark emphasized the importance of having every case of brain tumor operated on before pronouncing it hopeless. During the past year the speaker said he had seen three cases in which a material improvement, if not an actual cure, might have been effected by surgical interference. The ultraconservatism that had been thus far

shown in dealing with these cases from a surgical standpoint was no longer justifiable. Cerebellar tumors were not as inoperable, at least in the early stage, as had been heretofore held. In the medical treatment of syphilitic gumma of the brain, Dr. Clark said, too much stress had been laid upon the value of the iodides in preference to mercury; the latter drug should be pushed to the extreme before the iodides were given.

Dr. C. G. Am Ende said that a number of years ago he experimented quite extensively with protozoa under the microscope. In conducting these experiments he obtained very reliable results by using a solution of one ounce of boric acid in equal parts of alcohol, water, and glycerin. This left the most delicate tissue uninjured, but destroyed the life of the protozoa.

Dr. William B. Noyes said that in a case he had observed about six years ago, in which all of the classical symptoms of rabies were present, the autopsy showed a massing of the round cells in the capillaries of the cord. This was before the discovery of the Negri bodies.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting Held April 17, 1906.

Dr. Warren Coleman, Chairman.

An Unusual Case of Gonorrheal Endocarditis.—Dr. Morris Manges reported this case, and showed the specimen. The patient was a married woman, twenty-five years old, who was admitted to Mount Sinai Hospital on February 8, 1906. Her family history was negative, with the exception of the fact that her husband gave a doubtful history of venereal disease. The patient had measles when she was five years old, and typhoid fever seven years later. Her habits were good. She had been married three and a half years, and had one living child; none dead; vaginal discharge during past year. Her present illness was of two weeks' duration. It began with fever, headache, malaise, and chilly sensations, together with swelling of the left hand and wrist. The involved joints had all the characteristics of gonorrheal joints. The swelling steadily increased, so that on admission the patient was unable to use the hand. No other joints in the body were involved. The physical examination was negative, with the exception of a loud, blowing low-pitched systolic murmur at the apex, transmitted to the axilla and back, and upward to the base. There was also a soft systolic murmur accompanying the first pulmonic sound, and the second pulmonic sound was accentuated. The pulse was normal. The spleen could not be felt. Urethral smears, cultures, and spreads were negative for gonococci. The urine was negative. Blood cultures were negative. On February 28 the patient was distinctly worse. She was delirious and had a septic appearance. The tongue was dry; there was marked pallor. The heart murmurs were harsher and more distinct. The patient died on March 2, 1906. The autopsy proved the cause of death to be an acute gonorrheal endocarditis. The right heart showed nothing abnormal. On the posterior flap of the mitral valve was a large soft mass the size of a cherry, in the interior of which was a small collection of pus. Especially remarkable was the fact that the entire heart was sterile except the small collection of pus in the interior of the large vegetation, in which Dr. Libman found characteristic gonococci. This will explain why the blood cultures were negative. Two other facts are interesting, one is that no gonococci were to be found in the urethral or original discharges. The other was that the diagnosis of gonorrheal rheumatism could not be doubted clinically in spite of these negative findings because the joints were so characteristically gonorrheal. The Bier treatment was used and its effects considered bad in this case.

A Case of Primary Sarcoma of the Stomach.—Dr. Manges reported this case, with specimen. The patient was a woman, nineteen years old, who was admitted to Mount Sinai Hospital on March 14, 1906. Her family history was negative. The patient had typhoid fever eight years ago. After she had been subjected to great privations during the recent trouble in Russia she began to complain. Her present illness was of two months' duration, and began with epigastric pain and vomiting. Since that time she had suffered from pain in the left hypochondriac and epigastric regions. She vomited once or twice daily. The abdomen was rounded, and there was tenderness in the left inguinal region. The lumbar muscles were somewhat rigid, more marked on the left side. There was a mass like an enlarged spleen, extending well beyond the middle line. On March 18 the patient complained of epigastric and general bodily pains, and vomited a brownish material. The appetite was poor. The stool contained a heavy trace of blood; the vomitus contained no blood. On the following day the patient vomited some undigested food which was blood flecked. On March 26 she was much worse; vomited small greenish purulent masses. The moderate temperature now rose to 103°, there was great tenderness in the upper abdomen; peritoneal rubbings could be heard over the tenderness and the mass in the upper abdomen was less perceptible on account of its tenderness. The following day she became worse and an operation was decided upon. The abdomen was opened in the median line, allowing an escape of bloody serum from the peritoneal cavity. Further inspection showed a large tumor, moving with the respirations, and adherent to the parietal peritoneum. It was hard, and sprang from the greater curvature of the stomach. The case was regarded as inoperable, and the abdomen was closed. A section removed from the growth was submitted to Dr. Mandelbaum, who pronounced it a sarcoma. The patient died on March 27, 1906.

Dr. Harlow Brooks referred to the difficulty of recognizing primary sarcoma of the stomach during life. In the specimen shown by Dr. Manges, the degree of involvement was greater than in any case he had ever seen. Lymphosarcoma was the most common variety of the disease met with in this region.

The Bacteriology of the Blood in Sepsis.—Dr. Robert J. Wilson said that Canon distinguished three stages in the course of sepsis: 1. In the first stage, the bactericidal power of the blood was still unimpaired. The pus organisms might get into the blood, but were rapidly killed off, so that in general they were not demonstrated by cultures. 2. In the second stage, the bactericidal power had decreased; the organisms which entered lived rather longer, and were usually more readily cultivated, though, as a rule, only in small numbers. 3. In the third stage the bactericidal power had been used up; the bacteria multiplied and were readily demonstrated even in small quantities of blood. This last was called septicemia in contradistinction to bacteriemia, which was merely the presence of bacteria in the blood. In speaking of the frequency and severity of sepsis, Dr. Wilson said that the blood infections with streptococcus took first place. Others frequently met with were the staphylococci, pneumococci, and the colon bacilli. The streptococci gained an entrance into the blood either through the lymphatics or directly. Formerly, a large number of cases were met with in which the bacteria were carried into the blood stream by broken down infected thrombi. That was not nearly so frequent now. If only a few organisms got into the circulation, the bactericidal power of the blood might be sufficient to kill them off. Very likely that happened very frequently, and there might not be any appreciable external lesion infection through the tonsils. The localization depended on the anatomical conditions, and also on the receptor apparatus of the tissues. Thus, the streptococci seemed particularly

partial to joints, serous membranes, and kidneys. Of course, the organ which offered the least point of resistance would be invaded. A positive blood culture possessed both symptomatic and diagnostic value. It showed the extent of the bacterial development in the affected area, and, above all, it showed that that area was no longer able to control the streptococci. It also made the existence of metastases more probable. So far as metastases were concerned, Lenhartz had published the following figures: Of 160 cases of streptococcus sepsis, 65 per cent. were without metastases and 35 per cent. were with metastases; of 22 cases of staphylococcus sepsis, 5 per cent. were without metastases and 95 per cent. with metastases; of 20 cases of pneumococcus sepsis, 75 per cent. were without metastases, and 25 per cent. with metastases; of eight cases of colon bacillus sepsis, 78 per cent. were without metastases, and 22 per cent. with metastases. In connection with these figures it should be borne in mind that the development of metastases was more probable with increasing duration of the disease. In 29 cases of puerperal sepsis, of which seven recovered, Lenhartz found the streptococcus twenty-five times, the colon bacillus twice, the proteus once and the gas bacillus once. Canon had published a number of staphylococcus findings in puerperal cases; these were next numerous, in his experience, to the streptococci. Lenhartz had found that a puerperal sapremia was often accompanied by a genuine bacteriemia.

The Puerperal Types of Sepsis.—Dr. William S. Stone read this paper. (See page 213.)

The Medical Aspects of Bacteriemia, with Special Reference to Diagnosis.—Dr. Harlow Brooks said that a distinct etiological focus could be discovered in the majority of cases of bacteriemia; in many, an abscess, an infected wound, or a thrombosed vessel was found, which, taken in connection with the temperature curve, the pulse and the blood findings, as well as the history and general picture of the case, rendered a probable diagnosis a practical certainty. It was particularly those cases, however, in which treatment was relatively obvious that did not fall to the lot of the physician, but came within the realm of surgery. Such instances of bacteriemia, therefore, were of but little interest to the physician, who was called upon to face quite different and infinitely more obscure aspects of the disease. The conditions which were most frequently confused with medical bacteriemia were certain specific hemic infections, such as enteric fever and miliary tuberculosis; also, some of the more obscure forms of pneumonia, malaria, osteomyelitis, rheumatism, and an occasional instance of myeloma. In the recognition of medical bacteriemia, a careful history of the case was of primary importance. The general appearance of the patient, an examination of the skin, the presence of local lesions, etc., often led to the correct diagnosis. The spleen was enlarged in most cases of bacteriemia, and was often palpable, together with hepatic swelling and tenderness. The cardiac area, as a rule, was somewhat increased, particularly in those cases complicated by endocarditis. In typical cases the pulse rate corresponded fairly well with the degree of temperature present at the same time, but in some cases a slow, full pulse was found with the pyrexic stage. Although the presence of temperature was one of the most significant and constant indications of bacteriemia, the precise manifestation of this symptom was among the most irregular of the disease. The typical temperature curve of most infected cases showed a rapid rise, usually in the afternoon, with an equally speedy fall beginning very soon after the highest point of temperature had been reached. The highest temperature might occur in the morning, or at any other time. Occasionally, periods of pyrexia were separated by considerable apyrexic epochs, or they might be preceded by a short space of subnormal temperature. In some cases, particularly where endocardial infection was present, regular paroxysms closely simulating those of malaria might be seen, preceded oftentimes by chill, pains in the muscles, tenderness over the superficial bones and muscles, and succeeded by profuse perspiration and somnolence. Temperature variations were very slight in a certain number of cases, even in some of great severity. The speaker said he had been unable to trace any definite connection between either the severity of the disease or the temperature curve and the particular microorganism responsible, even when tests as to virulence had been made, and he was firmly convinced that the clinical aspects, in most instances, were more dependent on the reaction of the body organism against the infection itself than on the special microorganism and its degree of experimental virulence. Albumin and casts were found in the early stages of most instances of the disease. They might persist throughout, especially when true renal infection took place. Blood, mucus and renal epithelium might also appear. Bacteriological cultures of the urine, as well as the bacterial examination of a discharge of any nature whatsoever, might furnish data of a highly instructive character, but the careful examination of the blood unquestionably furnished the most absolute data for the diagnosis of bacteriemia. For satisfactory results, considerable quantities of blood were usually necessary. Furthermore, the culture media employed should be abundant. Several cultures were oftentimes necessary before the true nature of the condition could be demonstrated. He believed that positive results were secured with much greater certainty when the cultures were taken with the rising temperature, and were the more favorable the nearer the summit of the temperature wave was approached. Leucocytosis, while usually present, was by no means invariable, and was frequently absent, especially in severe cases of overwhelming infection. On the other hand, leucocytosis might be absent or very slight in severe, though favorable cases. As a rule, however, the number of leucocytes corresponded in general to the relative number of bacteria present in the blood, though in some instances localized and well-encapsulated septic foci gave rise to very pronounced leucocytosis. Hypoleucocytosis was present in certain cases, notably in tuberculous or typhoidal infection, in which the condition was usually associated with a relatively high percentage of mononuclear elements. In nearly all instances of bacterial infection of the blood, a falling hemoglobin percentage was demonstrable, even in those advancing to recovery, though not yet convalescent.

The Surgical Types of Sepsis.—Dr. John A. Hartwell, in discussing this phase of the subject, said that if one consulted the bacteriological reports from the cases found in any general surgical ward, a vast majority of them showed either the *Streptococcus pyogenes*, or one of the staphylococcus groups, occurring alone or in combination with each other, or with other organisms. These infections presented themselves in a mild or severe form, whether they were superficial or deep, so that the only safe rule was to consider every infection with the streptococcus, and to a lesser degree with the various staphylococci, as having latent possibilities for great damage. Any other course invited disaster. We were all familiar with the superficial abrasion or prick, which seemed so innocent that to dignify it as serious appeared an overcaution, but which in twenty-four hours might threaten limb, or even life. As yet, we were in total ignorance of the underlying factors which determined when such a thing was to happen. To say that its occurrence depended on the virulence of the infection, as compared to the resistance of the individual, gave no real information, because both of the factors in that formula were at present indeterminate, until the course of the case had determined them. The speaker mentioned a case of severe infection resulting from a lacerated wound over the dorsum of the thumb, where more than a week elapsed from the time of the original injury before the tissues established sufficient reaction to produce any pus. Prior to that, the bacteria grew unopposed in all directions. The infection was one of strepto-

coccus. Ludwig's angina, the acute infection starting within the submaxillary capsule, and usually terminating fatally, was another example of the same nature. In such cases, nothing indicated this lack of resistance until the damage had been done. The surgeon was seldom called on to treat any condition where a ripe experience and a well balanced judgment were so requisite as in determining the probable ratio between virulence and resistance, and the treatment depended on its answer. We know that any tissue that was subject to an attack from pyogenic bacteria showed, first, a congestion of the blood-vessels; second, an exudation of its lymph fluid; and, third, a marshaling and proliferation of the phagocytes. Those were the factors that made up the entity called resistance, and upon their successful establishment the tissue was prepared to fight the infection. The idea had long prevailed that the congestion or hyperemia was a deleterious condition, and one to be combated, and the first impulse usually was to adopt means to "reduce the inflammation." What was the significance of this congestion? Was it a sign of weakness on the part of the tissues, or was it a sign of strength? Did it indicate a surrender, or a calling out of the tissue defense? Judged purely from the side of reason, and leaving out of consideration the teaching of experience, one was at a loss for proof that it was not a conservative rather than a destructive process. Unless the pressure from the exudate became so great as to threaten a stoppage of the actual flow of blood through the veins, or the bacterial invasion into the capillaries was sufficient to do that, the mere presence of the excess of blood in the parts seemed harmless. On the other hand, there was evidence that this congestion was of benefit. Bier and others, noting the fact that pulmonary tuberculosis was rare in persons suffering from cardiac lesions that produced pulmonary congestion, had suggested the production of a passive congestion in the treatment of surgical tuberculosis. Experience had amply justified the soundness of that principle, and of late it had been applied, with modifications, to the pyogenic infections. The second stage of defense, the pouring out of the exudate, followed as a result of the congestion. All observers were now agreed that the active combatants against infection were the leucocytes, and the polynuclear leucocytes probably took the lead. Sondern, however, had called attention to the fact that when the total leucocytes were increased in a less degree than the polynuclear, the prognosis was not good, and Gibson, working on that hypothesis, followed a large number of cases of surgical infection, and found that the prognosis bore a very close relation to the relative leucocytosis and the polynuclear-cytosis, a preponderance of the latter being unfavorable. No explanation of these findings offered itself. It was probable, however, that much of the battle was fought by the fixed cells of the part, and that the conditions found in the blood elements were more an expression of the way in which the fight was going than a representation of the fighting force.

Dr. Herman J. Boldt said there was perhaps no phase in the specialty of obstetrics and gynecology that had interested physicians more than septic infections. Since the discovery of Semmelweiss that puerperal fever was dependent upon definite, and, as he believed, avoidable causes, attention to this subject had steadily increased. Although great strides had been made in the study of this subject, it was likely that much time would still elapse before a unanimity of opinion was reached on the many mooted points. It seemed that a much more rapid progress should have been made in the study of puerperal infections, when it was considered that Semmelweiss proved that after it had become compulsory, through his influence, that the hands should be thoroughly disinfected before the examination of any pregnant or puerperal woman was undertaken in the hospital in which he was assistant, the mortality rate at once changed as from night to day. For example, in 1846 before hand washing, as recommended by Semmelweiss, was practised, the mortality among 3,354 women was 459. In 1848, after chlorine hand disinfection had become compulsory, the mortality among 3,356 women was only 45. Numerous forms of microorganisms had been found in puerperal patients: streptococci, *Staphylococcus albus* and *aureus, Bacterium coli, Bacillus aerogenes capsulatus, diplococci* and *diplobacilli.* Investigations had shown that genuine streptococci lived in the vagina of clinically perfectly healthy women as innocent saprophytes; that during their ascent their character might become entirely changed, their virulence being increased through changes in the fostering soil during labor or at the beginning of the puerperium. Theoretically, the most rational method by which to combat septic infections was by means of serum therapy, analogous to the treatment of diphtheria with antitoxin, but, unfortunately, nearly all fatal cases of puerperal infection were examples of mixed infection. The most recent contribution on the prognosis of puerperal fever, as determined from examinations of the blood, had been made by Kownatzki of Berlin, from studies in the Charité. His conclusions were as follows: 1. Favorable prognosis, if there were no deterioration of the neutrophile blood picture, or only a slight one; the presence of eosinophile cells. 2. Unfavorable prognosis if the leucocytosis was more than 50,000, with serious deterioration of the neutrophile blood picture; absence of eosinophile cells; decided diminution of the number of red blood corpuscles. 3. An improvement was shown by betterment of the neutrophile blood picture and an increase of the eosinophile cells. 4. Retrogression was manifested by a deterioration of the neutrophile blood picture and diminution or disappearance of the eosinophile cells. 5. Those cases were prognostically absolutely uncertain in which there was an appearance of poikilocytosis combined with polychromasia, and nucleation of the red blood cells.

Dr. John B. Walker said his hospital experience was in accord with that of others to the effect that cases of staphylococcus infection were less serious than those in which the streptococcus was found, and that surgical measures undertaken for the relief of the former were proportionately more satisfactory than for the latter. In the streptococcic cases, as Dr. Hartwell had pointed out, more was to be gained from general systemic treatment than from operative interference.

Dr. Ellice McDonald said that streptococcus infection in the puerperium differed from all other streptococcus infections in that it occurred in organs whose anatomical relations and blood supply were temporarily altered. This was of as great importance in determining the extent of the infection, as was trauma in favoring its origin. The lessened resistance of the pregnant woman to infection was also a predisposing factor. Infection with this form of organism differed from many other infections, because the human blood serum was not supposed to acquire bactericidal properties. The destruction of the microorganisms and the relief from the infection, was brought about by phagocytosis. If the leucocytes were active and fulfilled their part, the infection was overcome; in other words, if the opsonin was sufficiently increased, the streptococci were destroyed. In the study of any infection, it was of importance to understand the location and character of its lesions. The most common lesion of puerperal infection was an endometritis, and with it was usually associated a periuterine thrombophlebitis or lymphangitis. Grossman, in a study of 51 cases dying from puerperal infection, found periuterine thrombophlebitis alone in 14 instances, and associated with lymphangitis in 13 other instances. Lymphangitis was found alone in 24 instances. Trendelenburg found thrombophlebitis in 21 of 43 fatal cases of puerperal infection. In 14 cases, it was bilateral and in only four was it associated with lymphangitis. This led him to advocate his operation of ligation of the uterine and

ovarian veins in such cases. From this focus, the infection may extend through the lymphatics of the broad ligament, and cause a peritonitis. Streptococcus infection alone very rarely affected the tubes; when a pyosalpinx occurred, it was usually due to the gonoccocus. Puerperal streptococcus infection did not cause marked anatomic alteration in the pelvic structures, but was of the nature of an acute cellulitis and lymphangitis, as this infection was elsewhere. The broad ligaments became thickened, and the cellular tissue was edematous and infiltrated. From this, it might extend to cause a peritonitis, which did not come from the tube, but through the lymph channels. This peritonitis was often general in character. General septicemia was an infrequent termination of puerperal infection; it might be shown as pericarditis, septic pneumonia, or septic pleurisy. Pyemia was, as a rule, a late evidence of streptococcic infection, and sometimes occurred months after an attack of puerperal infection. The abscesses were usually located in the broad ligament, and not infrequently pointed anteriorly. The diagnosis, then, of puerperal infection depended upon the presence of constitutional symptoms of infection, the discovery of streptococci in the genital canal, and the location of the lesion. Among the more important of the constitutional symptoms was Mahler's *Klettersymptom*, or rapid pulse. The presence of streptococci in the genital canal was not alone sufficient evidence of puerperal infection. Pathogenic microorganisms often existed harmlessly in the lochia. Before any operative measures were undertaken, the course of the infection must be thoroughly understood and the lesion recognized. The futility of curettage in thrombophlebitis and lymphangitis was readily recognized. Its only effect was to stir up the infection, make new raw surfaces, and thus open new portals for the entry of the microorganisms. Celiotomy in cases of peritonitis was at the best only a palliative measure and neglected the condition of the broad ligaments and uterine veins. Of local measures, the most important was uterine packing. This seemed to have a salutary effect. Iodoform gauze was most commonly used, but why such a poison, without any antiseptic qualities, should be used was beyond comprehension. A 3 per cent. quinine gauze offered a very convenient substitute, excelling iodoform in cheapness and antiseptic qualities. Quinine was an antiseptic which held a place midway between bichloride of mercury and carbolic acid. It possessed no poisonous qualities and it was easily prepared. Webster's glycerine and formalin gauze was better than iodoform gauze. Antistreptococcic serum required a further trial in the treatment of this infection, more particularly on account of the favorable reports of English obstetricians with regard to the polyvalent sera. In dealing with septic involvement of the peritoneal cavity, Dr. McDonald said celiotomy was, at best, only palliative. He advised simply opening the abdomen and draining, after Murphy's method, with rubber tubes. The abdominal cavity should not be irrigated. Rectal salines, given by means of the gravity bag, and continued from one to four hours, were an important aid both in the treatment of the peritonitis and of puerperal infection generally. The cardinal principles in the treatment of puerperal infection were the absence of meddlesome surgery, when no definite lesion presented itself, and the endeavor to improve the patient's general strength, so that the constitutional defenses to the infection might be increased.

Dr. Manges said that attention had been called to the similarity between pseudocardiac murmurs and those met with in ulcerative endocarditis. Whether the former were due to abnormal muscular action or to a hemic condition or to some unknown factors in the pericardium was still open to question. The criticism was made that in the diagnosis of ulcerative endocarditis too much stress was laid upon the murmur and too little upon the presence or absence of petechiæ and other phenomena which accompany that condition. In regard to the Bier method of treating inflammatory conditions of the joints, to which Dr. Hartwell had referred, Dr. Manges said he had resorted to it in his case of gonorrheal endocarditis in order to relieve the swelling of the hand and wrist. Instead of relieving the condition, it gave rise to intense pain, and the speaker said he regarded the method as not only unsatisfactory, but as harsh and cruel.

Philadelphia County Medical Society.

At a stated meeting held May 9 Dr. Hilary M. Christian presented a communication entitled "Hematuria of Renal Origin." He pointed out the several conditions most commonly responsible for hemorrhage from one kidney, namely calculus, tuberculosis, neoplasm, nephritis, but he dealt especially upon the disorder unattended with pain and apparently of functional origin and designated essential hematuria. Various explanations of the affection have been given, but none is entirely satisfactory. By some it has been compared to hemophilia, while by others it has been considered angioneurotic. Dr. Charles P. Noble read a paper entitled "Fibromyomata of the Uterus: A Study of One Hundred Consecutive Cases Treated by Hysterectomy." He undertook an estimate of the gravity of fibroid tumors of the uterus by an elaborate study of the complications and degenerations encountered in a consecutive series of 2,274 cases from several sources, in addition to his own personal experience. Of the entire number complications were present in 1,553. From the statistics a conservative estimate may be made that 15 per cent. of women having fibroid tumors of the uterus would die without operation as a result of degeneration in the tumor and complications present in the uterus. Adding complications outside of the tumor and uterus the estimate deaths would be increased by from 15 to 25 per cent. The frequent coincidence of carcinoma of the uterus with fibroid tumors was referred to. The conclusion was considered inevitable that fibroid tumors of the uterus predispose to the development of carcinoma of the body of the uterus and probably also to carcinoma of the cervix. By reason of the foregoing conditions early operation is advised as a life-saving measure, the mortality from the operation being less than 5 per cent. in competent hands, as against the much higher death rate in cases not operated on. There is room for difference of opinion with respect to small subperitoneal fibroids causing few or no symptoms. Unless the future shows that the liability to carcinoma is the same from this type of tumor as from others it may be proper to continue the present policy of advising expectancy. All other fibroid tumors of the uterus should be removed when discovered, unless in the particular case there exist good grounds to the contrary.

Treatment of Cutaneous Sarcoma by Roentgen Rays.—Vincenzo Chirivino has made use of the Roentgen rays in the treatment of a case of cutaneous sarcoma that was multiple and pigmented, with good results. He recommends its use in such cases when the lesion has not become generalized and extended to the internal organs. The rays seem to have a better effect on sarcoma than on epithelioma, contrary to the general opinion, which is that the rays have selective action on epithelium. The lesions treated by the author consisted of very abundant vascular elements, amounting to vascular lakes, with a cavernous tissue about them, with fragile vessel walls and cells consisting of young elements, of new formation and low vitality, especially susceptible to the action of the *x*-ray. The application should be made only to localized nodules.—*Giornale Internazionale delle Scienze Mediche.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery.	Montgomery	Sept.	6
Arizona*	Ancil Martin, Phoenix	Phoenix	October	1
Arkansas*	J. P. Runyan, Little Rock	Little Rock	October	9
California	Chas. L. Tisdale, Alameda	Los Angeles / San Francisco	Aug.	21
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	October	2
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	Nov.	13
Delaware	P.W.Tomlinson, Wilmington.	Dover	Dec.	11
Dis. of Col'bia.	W.C.Woodward, Washington.	Washington	October	11
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	October	17
Georgia	E. R. Anthony, Griffin.	Atlanta	October	9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October	2
Illinois	J. A. Egan, Springfield	Chicago	October	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October	23
Iowa	J. F. Kennedy, Des Moines.	Des Moines	Sept.	—
Kansas	T. E. Raines, Concordia	Topeka	October	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans.	New Orleans	October	19
Maine	Wm. J. Maybury, Saco	Portland	Nov.	13
Maryland	J. McP. Scott, Hagerstown.	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept.	11
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	October	9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October	2
Mississippi	J. F. Hunter, Jackson	Jackson	October	9
Missouri	J. A. B. Adcock, Warrensburg.	St. Louis		
Montana*	Wm. C. Riddell, Helena	Helena	October	2
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City		
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch.	Trenton	October	16
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C.F.Wheelock Univ of State of New York, Albany	New York, Albany Syracuse, Buffalo,	Sept.	25
N. Carolina*	G. T. Sikes, Grissom	Morehead City.	May	1907
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks.	October	2
Ohio	Geo. H. Matson, Columbus.	Columbus,	Dec.	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Sept.	25
Oregon*	B. E. Miller, Portland	Portland		
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	Dec.	—
Rhode Island.	G. T. Swarts, Providence	Providence	October	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	1907
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May,	1907
Texas	T. T. Jackson, San Antonio.	Houston	October	16
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.	October	1
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant.	Clarksburg	Nov.	13
Wisconsin	J. V. Stevens, Jefferson	Madison	January	4
Wyoming	S. B. Miller, Laramie	Cheyenne	Sept.	5

* No reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Illinois.—After 1910 this State will cease to recognize medical colleges that do not require in the entrance conditions at least nine months' work in biology, botany, and chemistry in a high school.

Iowa.—The State board of medical examiners has been enjoined from arbitrarily annulling the certificate of a licensed physician in this State. The District Court for Polk County granted a permanent injunction restraining the board from canceling the certificate of the plaintiff.

Texas.—Effort is being made to secure a new Medical Practice Act. Its object is to create one board of medical examiners for the examination and licensing of all physicians, surgeons, and obstetricians; to prescribe their qualifications; to provide for their proper registration, the revocation of their licenses for flagrant offenses, and to fix suitable penalties for illegal practice. The present law, according to the *Texas State Journal of Medicine,* is weak or deficient in many respects.

Washington.—Several would-be practitioners of Washington State who are unable to secure licenses to practise because they cannot produce the diplomas of an authorized medical college required by law have commenced a suit in equity against the State medical examining board, the president of the State Medical Association and the president of the King County Medical Association in the federal court at Seattle, contending that they are denied their constitutional rights. The court is asked to declare that all of the statutes regulating the examination of surgeons and physicians be declared unconstitutional and void on the ground that the provision requiring the possession of a diploma is class legislation.

Pennsylvania.—As a result of the recent examination of applicants for license to practise medicine in the State of Pennsylvania licenses were granted to 345 graduates, of whom 17 were women.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending August 4, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	406	157
Diphtheria	159	17
Measles	144	10
Scarlet Fever	56	4
Smallpox	—	—
Varicella	8	—
Typhoid Fever	133	17
Whooping Cough	57	12
Cerebrospinal Meningitis	14	6
Malarial Fever	.....	.....
Totals	977	223

An Exception to Colles' Law.—W. A. James reports this case. The patient, a woman thirty-nine years old, when first seen by the writer had an ulcer on the areola of the right breast. There was a large tender gland in the axilla, as large as a bantam's egg. The patient's baby had bitten her some days before. The wound healed in about five days, but seventeen days after the bite a blister appeared at the old wound, which in three days broke and became painful. Rapid ulceration set in and a week later the patient had a typical roseola rash on the chest and back; the hair fell out; there was hoarseness, mucous patches appeared on the inside of the cheek, tongue, and lips; pain in the jaws, some bone pains, tenderness over the sternum, and general glandular enlargement developed. Mercury was begun, and a few days later a papulo-squamous rash appeared on the legs and arms especially. A superficial reniform ulcer developed on the right tonsil. The baby also showed definite signs of syphilis. All of the medical men who have seen these cases agree that the mother is a secondary syphilitic, and that the child is a congenital syphilitic. The writer holds that this case is an undoubted exception to Colles' law.—*Intercolonial Medical Journal of Australasia*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending August 3, 1906:

SMALLPOX—UNITED STATES

		CASES	DEATHS
Florida, Duval County	July 21–28	1	..
Kansas, General	June 1–30	150	..
Massachusetts, Boston	July 21–28	1	..
New Bedford	July 21–28	5	..
Oklahoma Territory, Oklahoma	July 7–21	5	..
Tennessee, Memphis	July 21–28	3	..

SMALLPOX—FOREIGN.

Africa, Cape Town	June 16–23	1	..
Brazil, Pernambuco	June 1–15	..	4
Chile, Antofagasta	June 2–9	14	2
Iquique	June 24	..	Present.
France, Rheims	July 8–15	12	..
India, Madras	June 16–23	.	3
Italy, General	July 5–12	31	..
Panama, Colon	To July 18	32	..
Russia, Odessa	June 30–July 7	3	2

YELLOW FEVER.

Cuba, Matansas Province	Aug. 1	1	..
Mexico, Merida	July 8–21	14	7

CHOLERA.

India, Madras	June 16–22	..	2
Persia, Seistan	June 25–30	..	1

PLAGUE.

Brazil, Bahia	July 2	1	..
Pernambuco	June 1–15	..	1
Chile, Antofagasta	June 2–16	18	2
Egypt, Alexandria	July 8–9	3	1
India, General	June 9–16	2,224	1,904
Japan, Formosa	June 20–30	110	120
Peru, Paita	June 15–22	4	1

Medical Record

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Original Articles.

MEDICAL EDUCATION AND MEDICAL PROGRESS.*

BY GEORGE H. GRANT, M.D.,

RICHMOND, INDIANA.

MEDICAL education has a traditional history as old as the earliest record of the thoughts and acts of men. Fragmentary, disconnected, valueless except as ethnological curiosities as these records are, they are found the world over, in the hieroglyphics of the Egyptian pyramids, in Babylonian and Greek inscriptions on ruined temple walls, on Aztec altars, and in the sign writings of savages.

In this dim voiceless past the healing art in every quarter of the globe was a part of the mysticism of the priesthoods, having no existence as a separate profession. Knowledge of the charms and incantations, as well as of material remedies and surgical procedures, was revealed in great secrecy by the aged priests to the novice who had proven his worthiness to receive the holy mysteries, or was imparted by fathers to their sons so that certain families would control one entire specialty. But wherever civilization advanced, the mysteries and incantations were gradually worn away by the attrition of common sense. While the practices remaining were crude, very often dangerous, and almost invariably based on illogical premises, due to a lack of anatomical and physiological information, they had the merit of being reasoned out from the total of knowledge then at hand, minus the mysticism which was the foundation of the priestly system.

But medicine became a pursuit *per se* with Hippocrates, one of the greatest teachers the world ever knew; so great, indeed, that for centuries his writings inspired all medical literature, and his teachings sufficed for a changeless system of practice.

And with the brilliant Galenus, skilled anatomist, able surgeon, and careful generalizer, the profession lost many of its remaining errors, and took on a fundamental nature which may fairly be called philosophy. Seven hundred years after the death of Galenus, the Persian sage, Avicenna wrote his "Canon of Medicine," based on the systems of Hippocrates and Galenus, and in the far east the Canon is to-day revered and followed. Influenced by various causes, perhaps by personal selection or through the eloquence of some teacher, or on account of the traditions of a school of medical philosophy, the systems of Hippocrates and Galenus had equally their partisans throughout the civilized world. And so the profession was divided and remained content to quarrel through the intellectual gloom of the Dark Ages, blindly following the one or the other master mind with no application of personal observation, and bitterly denouncing in ponderous Latin theses the adherents of the other school.

But a period of mental unrest, of awakening and illumination came. Columbus sailed away and came back with a golden empire for mighty Spain, and the sails of the Argonauts of every nation caught the westering winds. Civilization's horizons had infinitely broadened. The little black friar of Erfurt had nailed his defiance to Rome on the doors of Wittenberg's town hall and had set in motion the mighty Reformation.

Through all this turmoil of political, commercial, and religious upheaval, medicine as well shared in the world movement. A Swiss chemist, surnamed Bombastus, had a son who had taken up the study of medicine. By an odd combination of his various names, converted into Greek and Latin, he became known as Paracelsus. Never did a son deserve a father's patronymic as did he. Through the assistance of a powerful friend he had the fortune early in his professional life to deliver a course of medical lectures at Basel.

At the very outset of his career he betrayed his ill-balanced methods which so soon resulted in his downfall. On the occasion of his first lecture he ostentatiously burned the almost sacred works of Hippocrates and Galenus and introduced a system of medical and surgical works of his own, which, he announced, contained the entire scientific information in all branches of these arts. But "he was one of the first physicians to profit by a mode of study which is now reckoned as indispensable. . . . . He broke away from tradition and delivered his lectures in German, not in Latin. They were expositions of his own experiences, his own views, his own methods of curing, adapted to the diseases that afflicted the Germans in the same year, and they were not commentaries of the text of Galenus or Avicenna." On account of this departure from the time-honored method of lecturing in Greek or Latin, and because of his introduction of his own personal method, and doubtless, too, because of his successes, he was denounced, despised, and finally killed by his professional enemies. The special value of Paracelsus' work, in additon to having contributed some minerals to the pharmacopœia, was in teaching the application of an individual treatment to each case, based on its particular study, and not merely following the unvarying dicta of an antiquated philosophy. The unfavorable opinion of Paracelsus usually held by historians was not shared by Robert Browning. He idealized Paracelsus, making his life and work typify renunciation. Less boastful are the noble lines in which Browning makes him say, "I profess no other share in the selection of my lot than this my ready answer to the will of God, who summons me to be his organ, and appoints no less the way to praise than the desire to praise, and such praise is best attained when man attains the greater welfare of his kind."

Gradually through the years that stretched out into centuries, the idea of personal research and observation permeated and directed medical instruction. Through this developmental period that comes down to this very day, standing out like great sun-

*Presidential address delivered before the Indiana State Medical Society—1906.

illumed headlands above the foggy levels of mediocrity and nonachievement, are such names as Paré, Sylvius, Harvey, Morton, Lister, Pasteur, Koch. These and others that time prevents naming have put the solid foundations under medical education of to-day.

In a comparatively young nation like ours the opportunites for college education, as preliminary to the medical course, were, until the last few decades, either not considered or obtained with great difficulty. For many years medical educators in the United States felt the humiliation of the unfavorable estimate in which their student bodies were held abroad. Within our own borders the older, wealthier, and better organized institutions of the Eastern States discredited medical graduates from the West or South. This discrimination was not due to a spirit of Phariseeism or aloofness as much as to a proper enough comparison of the preliminary educational requirements, plus the thoroughness of the course in medicine existing in the older and in the newer institutions. No more helpful thing could possibly have happened to the obscure little Western school than the realization by its faculty of the entire propriety of this attitude of the powerful colleges, for a certain percentage of the teachers in these small schools were graduates of the greater institutions, and therefore they earnestly labored to elevate the standard and strove to equalize the premedical as well as the medical requirements in the East and the West.

Almost every medical man here has seen the fruit of these efforts, first in a more comprehensive medical course of two years in college and a year with the preceptor, then added entrance requirements and three years in college, and finally four full years in college with a preliminary education equal to that of a high school as a minimum requirement of every matriculant for a medical degree, as is the case in Harvard and Johns Hopkins.

While at present the Indiana State Board of Medical Examination and Registration does not require a college degree from matriculants, it is a matter of pride to note that our State is one of six that requires a preliminary examination over work equivalent to that of a four years' commissioned Indiana high school of all matriculants who have not a high school diploma. The board announces a considerable diminution in the number of prospective medical students, an abundant evidence that the student body and graduates are of a greatly improved character,

But the most important work of the board has been on behalf of interstate reciprocity. Aided by Michigan and Wisconsin, Indiana has done more in this matter than all the licensing boards of the United States combined. In his farewell address to the profession in the United States, Dr. Osler said: "In this country reciprocity between the State licensing boards remains one of the most urgent local needs. Given similar requirements and examinations, practically of the same character, with evidence of good reputation, the State Board should be given power to register a man on payment of the usual fee. It is preposterous to restrict in his own country, as is now done, a physician's liberty. . . . I would urge you all most strongly to aid the movement now in progress to place reciprocity on its proper basis."

This board has done excellent work, when the difficulties they have encountered are considered, in ridding the State of quacks and illegal practitioners. First and worst of these difficulties is the jury. Acquittals in the most flagrant violations of the law are obtained through the sympathy of the unthinking laity for what they consider persecution. But lack of funds, weak spots in the statute, and apathy on the part of the profession are among the other obstacles that hamper their work. Better men because of their superior mental training are studying by better methods a far better system of medicine, and if the result be not better practitioners, the fault must lie with the sudent.

The possession of a degree and a license to practise medicine does not justify the graduate in believing that his medical education is complete. At his earliest opportunity he should join the County Medical Society and take an interest in the district and State medical associations. Society work of this kind will broaden a man by bringing him in contact with older practitioners, hearing and discussing their views, and acquiring a more friendly relation with these brothers in medicine. In effect, the work of these societies will be to him an actual post-graduate school.

The past year has been one of the most important in medical affairs in the history of this association. The establishment of the Epileptic Colony at New Castle, in the first place, is a great philanthropic as well as professional advance. The commission in charge has wisely purchased a highly cultivated tract of land, although by doing so their appropriation was so drawn upon that but two buildings can be erected at present. However, this will enable the institution to begin its beneficent work with seventy-five inmates next autumn. As rapidly as possible the colony will be enlarged to accommodate 1,500 persons, now, unhappily, dwelling in jails and infirmaries.

Next, the Laboratory of Hygiene has started on its successful labors. This institution has a double function. For the general public it stands between them and impure and unwholesome food, and provides the possibility of pure water. For the profession it will secure reliable drugs, assist in obtaining an absolutely accurate diagnosis in suspected cases of fever or tuberculosis, and within a few hours furnish positive knowledge as to whether a given case is tonsillitis or diphtheria. In addition to these material advantages there accrues to those who are remote from institutions devoted to scientific medical work that feeling of satisfaction which results from the possession of the same laboratory advantages, which until now have been the privilege of city practitioners only. The stimulation to do better work must result in an added dignity to our ministrations, thus removed from dubiety and placed on the level of true scientific labor.

The prestige of medicine in Indiana has been greatly advanced by this acquisition. Since this association proposed, and by its corporate influence, as well as by the individual efforts of its members, has secured the enactment of most of the health laws of the State, and since this interest has continued and thereby assisted in the enforcement of these acts, it is proper that the achievement of public health work be reviewed. Complete mortality statistics have been collected over the entire State since 1899, and these are tabulated and scientifically analyzed. The excellence of these compilations has resulted in their being sought by libraries all over the Union, and by many foreign governments, and the future issues have been requested for all these institutions.

The people are constantly advised in sanitary matters, the authorities are aided by pertinent suggestions, school children are daily examined by simple methods, as to sore throat, eruptions, etc., and in many counties the sight and hearing of the pupils are now as carefully tested as is their mental status.

In 1905 Indiana's death rate decreased 0.3, as compared with that of the last six years, a net saving

in lives of over 700 per annum. In 1904 there were 4,948 deaths from tuberculosis in Indiana, and in 1905, 4,492 deaths, a decrease of 356, or nearly one life a day saved.

Although this question is to receive your attention in the symposium on tuberculosis, the opportunity to urge united and individual effort in securing the enactment by the next Legislature of a statute providing for a sanatorium for the treatment of tuberculosis cannot be passed; we must urge the commission appointed to investigate the question to report with a recommendation that this great work be at once instituted, and that a sum of not less than $150,000 be appropriated to inaugurate the work.

Typhoid fever killed 1,013 citizens in 1904, and 928 in 1905. None should have died, but hundreds escaped the disease through the tireless crusade of our members for purer water, purer food, and more sanitary homes.

A discouraging item appears, however, when it is shown that 178 mothers perished from puerperal infection last year, an increase of eight over the year before, but the large number of accouchements either unattended or, worse, attended by ignorant midwives, may clear us of some of this disgrace. Yet the dirty-fingered doctor still exists, and is most often met with in the city.

There is a grim significance in the mortality of cancer, which claimed 1,159 victims in 1904, and 1,425 in 1905, an increase of over 6 per cent. Fifty-three citizens in every 100,000 of our population died of cancer. While this disease has had longer and closer study than any other of the great assassins of humanity, it is apparently increasing in all parts of the world. I say apparently, for the conclusion is deduced from statistics, necessarily imperfect and without regard to the irregular increase of population. However, even though the returns are faulty, and not the proper basis for the support of a theory (for instance, that of contagion or heredity, or of the existence of a cancer parasite), more deaths are known to occur each year wherever records can be obtained. It is a familiar saying among pathologists that the discovery of the real cause of cancer, or that which is more vitally of interest, of some biological, or other method of curing it, is quite as likely to occur in a small, obscure laboratory as in the perfectly equipped pathological department of a great university.

But by far the most important event that has occurred in the State in the last year, with which the medical profession is concerned, is the union of all the medical colleges in the State, as the Medical Department of Purdue University. In discussing the progress of medical education, Dr. Osler (if I may be again permitted to quote from his great farewell address) said: "The urgent need is a consolidation of our medical schools. Not only in this city, but in Richmond, in Nashville, in Columbus, in Indianapolis, and in many other cities, a merger is needed. Even the larger schools of the larger cities could pool their scientific interests to the great advantage of the profession."

In briefly reviewing the world's medical progress in the past year, some noteworthy work is observed, and no subject in pathology has received closer attention than cancer. The opinion hopefully advanced a few years ago that cancer was certainly of parasitic origin has quite generally been reversed and is no longer entertained, except by a small minority of competent investigators. In the third report of the Carolyn Brewer Croft Cancer Commission of Harvard Medical School details of exhaustive experiments are presented and the conclusion in every instance fails to show the slightest evidence of simple parasitic infection. These experiments were made by pathologists of the highest skill and of unbiased minds, and their deductions are authoritative. The negative results obtained by the members of this commission have, to their minds, left the theory of Cohnheim unshaken. In a review of the year's work on cancer in the *Interstate Medical Journal* for January, 1906, Karl Fisch said: "The reports of the different cancer institutes and laboratories, except that of the New York Institute, are uniform in their conclusions. They have done a great deal to bury finally the parasitic theory based on the presence of cell inclusion." In a personal letter an eminent New York pathologist says: "So far as I have been able to learn, pathologists quite generally discredit the work of the Buffalo Laboratory." But the work of the Buffalo group of investigators, even if not accepted, has been very important. The question must be admitted to remain an open one.

In April, 1905, Drs. Schaudin and Hoffmann of Berlin published a report of work which they have done in reviewing the investigations of Dr. Siegel, also of Berlin, on protozoa he had found in luetic lesions. By the aid of very powerful microscopes they detected constantly another very minute organism in these lesions. This organism they called *Spirochæta pallida*. Following their announcement, in the past year over a hundred observers have confirmed the regular presence of this *Spirochæta* in the initial lesion, in buboes, in twelve or more hereditary luetic infants, and in the tissues of various internal organs. In Metchnikoff's experiments with lues in anthropoid apes the organism has been found in four out of six cases.

While at present the demonstration of *Spirochæta pallida* as the single cause of lues is not positively accepted, the constancy of its presence in a luetic during the contagious period of the disease, and its absence in a nonluetic have a significance that merits the most thoughtful attention and expectation that its causative relation may be ultimately proven.

Since the discovery that the malarial parasite was introduced into the blood through the sting of the anopheles mosquito, and that the bacillus of plague was disseminated by rats, the part played by insects and animals in spreading infectious disease has received careful study. The first very important result was that infection through the sting of the stegomyia was the sole cause of epidemics of yellow fever, and, what was of vastly greater benefit to humanity, that the destruction of their breeding places and larvae, and the exclusion of the mosquitos was an absolutely certain method of checking the disease. In the past year this line of investigation has shown that bed vermin, having bitten a person sick with pneumonia, will infect others by transferring the *Bacillus lanceolatus* through their bite. Also that the lanceolatus, having passed through the respiratory and alimentary systems of the common mouse, becomes vastly more destructive when reintroduced into the human organism. These are facts of practical importance, suggesting as they do the abatement of this form of infection through domiciliary cleanliness.

The most valuable contribution to parasitology in the past year was made by Robert Koch. In his "Preliminary Report of an Expedition to East Africa," published in November, 1905, and abstracted in the *Post-Graduate* for January, he gives the most minute account that has yet been written of three diseases intercommunicable between domestic animals and human beings—African recurrent fever.

Texas fever, and the sleeping sickness. His observations of the habits of the insect carriers whose bite disseminates these diseases have enabled him to suggest valuable expedients in avoiding these infections. Our own fellow-countrymen, Novy and Vaughan, had already made very valuable contributions to the study of the protozoal diseases. It is research work of this character that must ever command our highest professional respect. Animated by no other interest than a purely scientific one, a scholarly desire to know the cause of these diseases, and without any prospect of gainful advantage, these scientists have spent time and treasure for this end.

Time forbids even a brief consideration of the year's surgical progress. Conservatism is probably its dominant note, and the startling successes attained in nerve, brain, and blood-vessel operations indicate that surgery's next triumphs will be in this field.

The ceaseless demands of medical science require a diversity of effort that is infinite. None can shirk his part in the great plan. Some will achieve largely and reap rich harvests of temporal gain or eternal remembrance, but most of us will quietly do our work; our greatest fame the fealty of a few grateful hearts; our recompense a final peace at life's twilight hour. Yet each of us may profit in that larger sense which, recognizing worth in another, seeks honorably to emulate his efforts by producing better results in our own chosen labors; and while in our ethical relations we do well to affirm our abiding veneration for the oath and gentle admonitions of Hippocrates, let us take heart at the memory of the struggles that our patron of independent thought endured, with a mantle of charity for his faults and a grateful recognition of his lesson of personal research.

In his beautiful word-picture of the passing of Paracelsus, Browning says: "Meanwhile I had done well, tho' not all well. As yet men cannot do without contempt. 'Tis for them, good, and therefore fit awhile that they reject the weak, and scorn the false, rather than praise the strong and true in me. But after they will know me. I press God's lamp close to my breast. Its splendor soon or late will pierce the gloom. I shall emerge one day."

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THE INSANE LOVERS.

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The poets tell us that love blinds, and we all know that it makes fools of all lovers on occasion. Let any man who doubts this look back in his own experience for incontrovertible evidence of the truth of my statement, or, if he has not been so fortunate as to have been so affected, let him but spend a day in a Pullman car with a newly married couple. Thus it might be said that in this sense all of us might be included under the above caption, and that a certain degree of physical and mental aberration on this subject will be the *normal* experience of each of us. It is not with the normal, however, that I would deal here, but with the abnormal, those presenting a true mental disease, the prominent clinical feature of which is the existence of a love unfounded upon reality, unsought and unsuggested by its innocent victim, and having its only basis and origin in the disordered and diseased imaginings of the patient.

This subject is one of much importance to the general practitioner. Such cases are not uncommon in asylums and in neurological practice. The patient may seem so clear and rational on all subjects aside from this particular delusion that those with whom he is in daily contact may for a long while be deceived into believing him entirely sane. It is the general practitioner who will first see these cases, and hence it is very essential that he should have a clear conception of the condition, so that the patient's mental illness may be early discovered. When the patient is a young woman who coherently, with detail, and with seeming rationality, recites to her friends her story of disappointment and desertion, one may readily see what serious consequences might befall the innocent object of her delusion, if her mental disturbance were not recognized. No doubt many a suit for breach of promise of marriage is to be traced to the existence of such delusions in the plaintiff.

These cases do not in themselves constitute a separate clinical entity, but come from the ranks of the victims of three great mental diseases—paranoia, dementia præcox, and manic-depressive insanity, this insane love being but a prominent symptom. In paresis and senility, and possibly in some other deterioration processes, we sometimes meet with a condition approximating this in certain features, which I will touch upon in passing.

The Paranoid Class.—Here the love is a part of the systematized delusional state that goes to make up the clinical picture of paranoia. This psychosis is a disease of early adult life, usually making its appearance during the third decade, though in a small number of cases not before the involutional period. It develops upon a defective constitutional basis, congenital or acquired, as manifested through the presence of the stigmata of degeneracy, both psychical and physical. Probably no mental disease in its etiology depends more completely upon heredity. "So seldom, indeed, can the disease be traced to post-natal causes that the paranoiac may be said to be one predestined to his morbid peculiarities." (Berkley.) This does not mean, however, that a history of well-defined insanity must be found in the family. The various nervous diseases, alcoholism, criminality, prostitution, eccentricities, etc., in his antecedents, indicating the degeneracy of the stock from which he springs, endows him with a deficient and structurally weak nervous system. This is often shown in the peculiar mental makeup of such persons. From childhood they are often marked as strange and peculiar. At school they may be precocious in certain lines, but unequally so, and are apt to be deficient in the exact sciences. They are frequently shy and seclusive and fail to associate with other children. They may show a lack of affection, moral lapses, etc. As they grow older, there may be undue irritability with outbreaks of furious passion; others are suspicious, dreamy, mystical, or unduly pious. At puberty sexual perversions may appear. As they reach maturity and their sphere of activity and association enlarges, their earlier tendencies become more marked, and they are often flighty, unsettled, and unstable in business and their other undertakings. Their one-sided development may bring forth a genius in special lines of work with brilliant attainments. Associated with these mental deformities are many physical stigmata of degeneracy, such as facial and cranial asymmetry, illformed and unevenly placed ears, defects and abnormalities of the palate, asymmetrical limbs, etc.

The heredity and early history of these cases is very important to the clinician, often furnishing the first clue to the true mental condition of the individual. This abnormal love springs from some autocthonous psychic process in the patient, the pri-

mary origin of which must remain shrouded in mystery. The first expression of the psychosis, paranoia, is manifested in the patient's peculiar mental attitude toward the world, the misinterpretation of the simple events of everyday life, and a tendency to find in the most commonplace words and actions of others a hidden and occult reference to himself. Various abnormal somatic sensations accompany this mental change, for which the patient seeks an explanation, and then closely following, hallucinations of the various senses occur. A direct statement may be thus received from the "voices," finding the ready acceptance in the mind of the patient that we all give to impressions received through the medium of our senses. These hallucinations may first occur at night, and be half dreamy in character. So, in the presence of abnormal sensations in the region of the genitalia, there may arise delusions of sexual intercourse, with the subsequent evolution of a delusion of marriage. Be its origin what it may, there arises the fixed and unshakable belief in the existence of a love and understanding between himself and another, proof of which he finds in an unmistakable line of circumstances pointing thereto.

Though the details of the clinical picture may vary considerably in the different cases, the fundamental condition is the same in all, viz., a chronic progressive system of delusions in no essential points different from any other case of paranoia.

In the milder cases the patient may be so clear and rational on all topics aside from that of his delusion as to be able to maintain his relations with the world, and continue his regular occupation for a long time. His everyday associates may for a long while fail to recognize his delusions as such. In others this love is but one of a multitude of delusions. These patients, as are other paranoiacs, are coherent in thought, and able to converse quite well upon ordinary topics. When the realm of their delusions is entered, they become illogical in their reasoning and the conclusions which they reach, because of their erroneous premises based upon a misinterpretation of facts. Consciousness is clear, and orientation unimpaired, save in respect to person, when they not infrequently mistake the identity of individuals. Delusions of reference, wherein they misconstrue simple events as proof conclusive of their delusional beliefs, and retrospective falsification of memory whereby they find in their past life occurrences now having an altogether different meaning than they gave them at the time, are characteristic symptoms.

Not that there is any essential fundamental difference between them, but for the sake of easier description, the "lovers" may be divided into four classes:

First: Those in whom this love and the belief in a marriage to occur or already consummated, with the ideas going to confirm this belief, constitute the clinical picture.

Second: Those cases in which the delusions of love and marriage are associated with many others which upset entirely their relations with the world.

Third: Those in whom there are many delusions of grandeur and persecution, the patient attributing this persecution to the machinations of disappointed suitors.

Fourth: Those in whom there exists a distant, holy, and altruistic affection, without any active effort toward a material union with the loved one.

Such a division is really of little practical worth, since there is no sharp dividing line between the different classes, and as the years go by they all come to present practically the same clinical picture.

The First Class.—The general manner and behavior of these patients may be so little different from that of the normal fiancé as not to at first arouse any suspicion of the mental disorder present. It may be a nice medicolegal question to decide whether the patient's story of love and courtship is a delusion or the truth. There gradually arises in the mind of such an individual a belief that he is to be wedded to a certain person, whom he may know only slightly or has not met at all. This belief may find its origin in hallucinations, day-dreams, etc. He gradually comes to know that she loves him because of her peculiar expression and manner while in his presence. A chance word, look, or act reveals to him her feeling. He may at first be surprised, but looking back into the past, he sees many little things that he now understands in an entirely different way than he did at the time of their occurrence. She always seemed embarrassed while in his presence, flushed when he spoke to her; once in passing, she brushed against his hand, etc. Having been casually thrown in contact by their daily duties, he looks upon this as an intentional act upon her part that she might be near him. At one time she made some commonplace request of him, such as any woman might make of any man whom she has ever met, which he now sees indicated her affection for him. He now begins to watch her and finds that she wears her hair in a certain way, walks on a particular street at a given time where he meets her, and a hundred other little things in her daily life which really have no reference whatever to him, but which he interprets as clear proof of her love. He notices that her father is making certain changes in his business, which means that the father is preparing a place for him. Their residence is being repainted; a new house is being built in some part of the town, all in preparation for his approaching marriage. Evidence of the same thing may be found in chance words and phrases in the daily papers, which he believes she has caused to be inserted to indicate her love, what is being done in preparation for their marriage, etc. This latter is particularly apt to be the case if the loved one is a person of high degree whom he has never met. Not infrequently the published accounts of the approaching marriage of some prominent person brings forward one of these individuals. Just before Miss Roosevelt's marriage a man presented himself at the White House and declared that it was he, and not Mr. Longworth, that was to marry Miss Roosevelt. He explained that his mother was the Queen of Denmark and that she had arranged his engagement to Miss Roosevelt. The looks that the servants and passersby on the street give him, show that they know he is soon to be the husband of the daughter of the house, and she communicates with him by signs, such as the burning of a light in a window, or the drawing of a shade. Hallucinations may be present in such a case, and the patient hears people on the street talking of his love; he hears her voice, particularly at night, and she may appear to him. He may believe that she comes to his bed, and that he has intercourse with her. Others may mistake the identity of their lewd women associates, believing one of these to be his loved one who has sought this method to reach him. In due season he proceeds to prepare for the wedding, and notifies his friends of the approaching happy event. He buys the ring and gifts for her, and presents himself at her house for the ceremony. Up to this point his conduct may not have differed from that of the normal lover, save that it is based upon delusions. The belief arises in some that the ceremony has already been performed, and he simply prepares to take up

living with her in the usual way. He endeavors to reach her, and when deterred by her relatives, or refused by her, there arise delusions of a conspiracy to keep them apart. At first, and even for months, his attitude toward those who are, or he believes to be, keeping him from his loved one, may be one of mild but persistent protest, gradually becoming stronger, until he becomes quite determined in his demands. Finally, from exasperation, or at the behest of his hallucination, he may resort to violence or even homicide in his endeavor to reach her. It may be that the one upon whom he directs his attack has really had nothing whatever to do with his case. Whether actual violence is attempted or not, he sooner or later grows so annoying that his confinement becomes necessary. As the years go by his delusions multiply, his ideas of persecution or grandeur gradually evolving and extending in their scope.

In other instances of this first group, a woman develops an abnormal love for some man, frequently a favorite minister or priest. This may arise in the case of a young woman, or a spinster at the involutional period. Clouston described the latter under the caption of "Old Maid's Insanity." No man in the community is normally so much in the minds of all the women as is the dominie, and even the staid and settled old married woman has a great deal to say about her preacher. Next, and a close second, comes the family doctor, but any man of her acquaintance may be selected. I will take the case of the minister as the type. The patient is an individual of degenerate tendencies. From a lack of attractive qualities, perhaps, she fails to receive the same degree of attention from the men as do her more fortunate sisters, or from an inherent tendency to mysticism and piety she devotes much time to religious matters and church work, with a consequent close association with the priest or minister. At first, probably through her idealistic reverence for his holy office and high character, she lifts him to a pedestal of admiration in her mind, endowing him with all the qualities of goodness and virtue that she holds as her standard. This gradually evolves itself into a love of more or less pure and exalted type, which she may or may not in course of time come to believe that he reciprocates. In case of the latter belief, she finds evidence of this in his attentions and manner toward her, which are in reality of the most ordinary and disinterested nature. She then begins to try to show him in various ways her feeling toward him, writes affectionate letters, follows him about in the course of his duties, etc. Her attentions become embarrassing and annoying, at first probably occasion great surprise, are ignored, politely discouraged, and finally, in desperation, she is ordered to discontinue her undesired attentions. This is not effective, however, and she continues her manifestations of affection, gradually presenting evidence of the delusional basis of it all in her misinterpretations and misconstructions. She may at first be hurt and much cast down that her love is thus rejected, speak of her own unworthiness, and take to herself the blame for his neglect. The presence of delusions of reference is here brought out in the excuses she offers for herself and her attempts to secure his forgiveness for wrongs that she thinks he believes she has done him. Thus, two years afterward one young woman wrote begging to be forgiven for having refused to go on a sleigh-ride to which she had been casually invited along with a dozen others. She admitted that she did not go because she was "jealous," but of whom she did not state. Such delusional interpretations or hallucinations may exist for years before they so affect the patient's behavior as to make her mental disorder recognizable. Also, such a condition of mind may possibly exist for months, or even years, without active efforts on her part toward the attainment of the object of her love. Or, on the other hand, because of her belief, founded upon her delusions and misconstructions, that he knows and reciprocates her love, she quietly and systematically goes about the preparations for her marriage. Through the presence of sexual perversion, undue sexual excitement, or pathological sensations in the genitalia, half-dreamy sexual hallucinations may occur at night, from which there develops the delusion of sexual congress with her lover. Ultimately her delusions so increase in prominence and scope, and she becomes so troublesome that her confinement in an institution becomes necessary.

The following patient, an example of the first class, has given us a great deal of trouble for nearly two years:

H. S., female, white, age 32, single, formerly a nurse in the Long Island Home. Family history negative so far as I am able to ascertain. Facial asymmetry and badly formed features. In disposition reticent, seclusive, and exceedingly suspicious. Because of her peculiarities, she was discharged from the employ of the institution in May, 1904. It was subsequently discovered that she had, previous to her discharge, developed a line of delusions in reference to Dr. X., one of the assistants. Just before leaving, she purchased several hundred dollars' worth of clothing in anticipation of her marriage to him, though she did not state so at the time. Some weeks after leaving, she wrote the doctor asking for money, but did not give any explanation for making such a request of him. Her letter being ignored, she wrote again in a few days, addressing him as "My dear husband," and signing herself "your loving wife." Dr. X. at once wrote to her sister, telling her that H. S. was insane, and inclosing to her the letter he had just received. The family took no action in the matter. A month later H. S. returned to the Home and asked to see Dr. X. When told that she could not see him, she threatened suicide, and was at once taken into custody by the officers of the Home. Several articles of jewelry with the doctor's name engraved thereon were found in her possession. Upon her brother's arrival in response to our message, he told us that his sister had left home with the statement that she was going to Amityville to be married to Dr. X. He and the rest of her family and friends believed her story to be true. She had told him that an addition to the female department, in course of construction when she left, was being built for her and Dr. X. to live in. Even after being shown the completed structure, which it would be absurd to believe had been built for any such purpose as she stated, he was still unconvinced that she was mistaken. Though he removed her as we directed, yet he left with the feeling that his sister had been wronged and deceived by Dr. X. Since that time the patient has continued to deluge Dr. Wilsey and Dr. X. with appeals for assistance in securing work, in spite of the fact that she has been told time and again not to communicate with us further, and that we would have nothing to do with her. After the one instance, she always signed her letters with her right name, and until recently she did not directly mention her love for Dr. X., nor the relations she believes to exist between herself and him. When about to leave the employ of the institution, she did not go on the date set for her leaving. She told Dr. X. that she could

not go until she received a remittance from her brother, she having spent all of her own money, and asked Dr. X. to allow her to stay until she did hear from her brother, which request he naturally granted. She afterward laid great stress upon this as an evidence of the doctor's love for her. In reality, there was never the slightest foundation in fact for her belief that Dr. X. cared for her. He never paid the slightest attention to her, and it is doubtful if he ever spoke a dozen words to her except in relation to her work. Since she left the institution, she has spent part of her time with her sister, but for a year or more past has been employed as a domestic. In the community in which she lives she is looked upon as a normal individual, and I believe her family consider her as such. Seemingly of late her delusions have become more active, if such a term is permissible, and I cannot better indicate her present condition than by giving copies of her last three letters. The incident of the sleigh-ride of which she speaks was really very unimportant. As I recall it, a party of a dozen patients and nurses was being made up, and she was simply told that she might go if she wished.

O——, N. Y., Jan. 26, ('06).

Dr. X.: I am going to do a daring thing. I am going to ask you to send me some money. perhaps you will say I am crazy that "I spent my money all on your account" and "I imagine you knew I was" and why dident you tell me I was foolish to do so. But I don't suppose you realize what that money was to me, as you have everything in plenty. I hope you always will. The name you have given me, I suppose my word is void, but there are a few that think me the same as of old, my minister for one. Only hoping you will look at this in the same light as I do. If you do think me crazy, don't for pity sake tell it to the whole world again, of course I don't think I am crazy, but I do think I have been most ungirlishly foolish. hoping you will have a little mercy, I close hoping to hear very soon.

Yours truly, H. S.

In a postscript she gives some details of her daily life.

The following was written under date of February 5, 1906:

Dr. X.: I feel as though I must tell you all tell you that I love you, and that if you was only mine I think I would be the happiest girl in the world.

Dr. X., will you not forgive me for not going on the sleigh-ride that night. I was a little jealous and it was very rude of me not to go, and had I thought how discourteous it was to you, and perhaps to Dr. Wilsey, I would not have done it for the whole world. Won't you please forgive me? I worshiped you Dr. X. when I was sick in bed down there, if you knew how much good it done me, only to hear your voice, and how I longed to put my arms around your neck, and tell you that you was dearer than anything else in the world to me. Dr. X. if you only care for me, I will go any place, or grant any wish which you may ask, that lies in my power. I will say good night, hoping you will write me soon as you receive this, I remain sincerely yours.

H. S.

O——, Feb. 10, 1906.

Dr. Wilsey: You have told me again for the 175th time I guess, not to write to you again, but will you not forgive me for writing? and will you not forgive me for not going on the sleigh ride, truly I never thought how rude I was acting. Please forgive me for everything I did that was wrong. Dr. Wilsey havent I done as you wished when I told Dr. X. I loved him? I imagined I had, am I right. I wish I had told him before I left, so I would have known whether or not he cared for me, one reason I did not tell him, I was afraid he might take it as an imposition.

Now if I have done as you wish Dr. Wilsey, you will help me will you not. Let me come back or something. I see no pleasure in life in doing housework outside of your own home, but I sometimes think now, I might be obliged to, or work out all my life. Wont you please write and tell me Dr. Wilsey. I am so anxious to know. If you could only realize my trouble.

"Without a home," the reason all this is such great trouble to me.

I cease with good night only hoping to get just one line of good news. If it cannot be, I want to know the worst, as it is very important to me.

from H. S.

The Second Class.—In this group the love is associated with a mass of delusions involving all the individual's relations with the world. Ideas of grandeur are often a prominent feature. It seems more probable that here the delusion of love and marriage is a secondary one, arising as a part of the systematization of other primary morbid ideas. These patients, like those of the other class, are individuals of degenerate tendencies, are different from their kind, often shy, timid, and seclusive, and not infrequently there exist sexual perversion, habits of onanism, etc.

The psychosis once established, there rapidly appears the common symptom, hallucinosis of the various senses, with a special prominence of abnormal sensations in the genitalia. From these arise delusions of sexual intercourse. God, Christ, or the Holy Ghost nightly come to her arms, or, instead of such supernatural lovers, her prince, knight, or it may be but an ordinary individual of her acquaintance, lies with her. From this point it is an easy feat for the diseased mind to pass on to the belief in a supernaturally performed marriage. With her illogical reasoning, misinterpretation of the commonplace events in the lives of those about her, her delusions of reference, retrospective falsifications of memory, and hallucinations, she builds up a coherent system and explanation for her delusions. She looks back into her past life and reads into its events a system of evidence showing that from the first she was predestined to a high and honorable marriage. In fact, that she herself springs from high and noble lineage, and on some delusional premise, explains the fact that her early life was spent amidst adverse circumstances and poverty. Those with whom she has lived are not really her parents, but she is the daughter of some wealthy and high-born person; was stolen by her foster parents as a part of a conspiracy to deprive her of her deserts, or that she might pass through this probationary period of reverses in order that she may the more brightly shine when she finally does come into her own. Proof of all this is received through the medium of hallucinations, or in the misinterpretations of simple events of the past and present. Now that she has discovered her true position, she may calmly and quietly await the coming of her lover or husband, knowing that all will come out satisfactorily in due time, or, as is more often the case, she attempts to establish communication with him, writes many letters to him, and finally tries to reach him in person. It is at this point that these patients become particularly dan-

gerous. The rebuffs from the man himself, his denial of all connection with her and refusal to see her, are due to the machinations of her enemies, who have control of him, as are the attempts of his or her friends and relatives to keep her from him. She finally sees that she will be able to accomplish her desires only by violence, and, fixing upon a particular individual as the instigator of her troubles, a tragedy follows. Should she thus resort to violence, little or no effort is made to escape detection, since all the world will now see to what persecution she has been subjected, and realize that she has taken the proper course. Her actions may be dictated and governed entirely by hallucinations, the "voices" telling her what to do.

Such are the individuals, male and female, who follow about from place to place and annoy men and women in public office or prominent position. Usually the object of this love is in a relatively much higher social position.

The Third Class.—These patients, along with their delusions of persecution and grandeur, assume a different attitude toward their supposed lovers. The majority of this class, I think, are women.

Because of her great wealth or unusual beauty and accomplishments, many men of more or less importance seek her hand in marriage, and in their disappointment at her refusal of their offers, do all sorts of things to annoy and persecute her, and even attempt her life.

Such is the condition present in a patient now under my observation. Many men of prominence have sought her hand because of her great wealth, but she has spurned them all. In their disappointment they have combined, and seek to destroy her. The officers and nurses of the institution are their agents. They annoyed her for years in her own home, and finally caused her to be sent here. She is constantly spied upon, her food contains poison, and the most disgusting filth; electricity is used upon her, foul odors are blown into her room, carbolic acid put into her drinking water, etc., all at the instigation of these men. These delusions are well systematized. Hallucinations of hearing, taste, and touch are present.

Some years ago there was brought to the Home a young man presenting a line of symptoms corresponding to those of both the first and third group of lovers. He fell in love with a young woman who worked in the office opposite his. He had never been formally introduced to her, and his acquaintance with her was limited to one or two casual meetings in the corridors of the building and on the elevated train. He spoke to her and had some little conversation with her on one occasion, but she maintained that she neither said nor did anything that would justify his after-conduct. He believed that she was in love with him, in spite of her statements to the contrary, and on two or three occasions he went to her father's house and demanded her hand in marriage. He became so excited and threatening when his demands were refused that it was necessary to drive him from the house. He grew very despondent in his disappointment, abruptly gave up a very profitable business, and announced his intention to go to another city and begin life over again. He now began to imagine that the people on the street made insulting remarks about him as he passed. This was particularly true of young women, and often the girl would turn to her companion and say, "I would marry him," referring to the patient. This annoyed him greatly, and he wandered from town to town, but the same condition met him everywhere. He actually feared that he would be married against his will and efforts. He believed that everyone knew of his love affair. He showed no mental disorder aside from this, and while at the institution, behaved in a very pleasant and gentlemanly way at all times.

As a fourth class I will mention those cases described by authors as having sexual hallucinations and maintaining a holy and distant love for the object of their affection without ever openly announcing to him its existence, or seeking for its material consummation.

In the recognition of the paranoid lover a study of the individual's heredity and early history is important, the discovery of a defective heredity and of physical and psychic stigmata of degeneracy being of value as presumptive evidence. In many cases the presence of frankly expressed and easily discernible delusions of persecution and grandeur, hallucinations, etc., or the exalted position of the loved one renders such a claim so absurd and impossible as to make the true nature of this pathological love readily apparent. As we all know, the paranoiac is always capable of more or less logical reasoning on any point off the subject of his delusions, and as is limited the scope of his delusional beliefs, so will it be increasingly difficult to entrap him into a palpably insane statement. Along certain lines he may be capable of even brilliant intellectual work. As a matter of fact, he is more or less influenced by his delusions in everything he thinks and does, but he is often able to conceal this from others for a long time. Also quite a degree of cunning is a very marked characteristic of the paranoiac, he at times being even more adept in simulation and deception than a normal individual.

At the present time I have under my care a young man, a paranoiac, who for eight years past has spent most of his time in institutions. Yet after coming to us a year or so ago, he so cleverly covered up his delusional ideas that it was two or three months before we were able to elicit from him any expression of them. During this period he was allowed many privileges, and was in constant association with normal individuals, where he comported himself in as irreproachable a way as they did. There came a day when the mask was dropped, and he revealed a wealth of delusions impossible to enumerate, ramifying into and involving every act of his daily life. They, too, are of the most fantastic and grandiose type—he is ordained of God to reform the world, all present forms of government are wrong and he is going to right them, he knows more about political matters than anyone else in the world, but he has been hounded and persecuted by the Jews for years, and prevented from putting his ideas into effect. Many attempts have been made upon his life, and he is constantly in mortal fear. Every act of his daily life, and of those about him, has some reference to and bearing upon his case. Yet two days after telling me these things, at a judicial inquest to determine as to his sanity, not one delusional admission could I wring from him, though I faced him with his own words. He either denied the statements implied to him, or adroitly explained them away.

If such difficulty is to be met with in a case possessing hundreds of delusions, then we may readily understand how difficult it often is to settle the question of the sanity of some of the less effulgent types.

In the "milder" cases of the lovers we must consider the relative positions of the two individuals, and take cognizance of the degree of probability that might be attached to their claims. There may be a manifest improbability or impossibility of such a

union occurring. It may be found that the two have never even spoken to each other, or that the lover is totally unknown to the loved one.

Having established the real existence of facts upon which he bases his claims, then must be determined the rationality of such deductions. Search should be made for hallucinations of the various senses, delusions along other lines, and retrospective falsifications of memory.

The fact that despite every effort on the part of the loved one to discourage her advances and to show how distasteful to him are her attentions, she does not desist permanently, as a normal person ordinarily would, is a point of importance, particularly in women.

Dementia Præcox.—We find an occasional example of the lovers here. In the paranoid type of the disease cases may be met resembling in a superficial way the true paranoiac lover. We have usually a degenerate basis. A delusion arises that he is to wed, or is already wedded to an heiress, popular actress, or other woman, and hallucinations, which are usually very active, confirm his belief and direct his conduct. He may seek to reach his loved one. Restrained from doing so, he manifests no strong feeling either of disappointment or resentment. He makes no special resistance when detained, and in an indifferent sort of way, details his delusions. These will be found to be of a silly and absurd character, and with little or no system. Hallucinations are usually a prominent symptom. After being sent to an institution he may retain his delusions for some months or years. He makes little effort to act upon them, may express them only as a result of questioning, and fails to show any strong feeling about the matter. This emotional deterioration is a prominent feature, and is manifested in other lines, as his lack of interest in anything, indifference toward his family, his own future, etc. In the course of time, as a rule within two or three years, he settles down into a condition of dementia, with possibly a few residuals of his former delusion. Patients of the hebephrenic type, in the presence of deterioration and increased sexual desire, may seek promiscuous intercourse among their acquaintances.

This latter statement is often true of the paretic, who may be led to form many liasons. Occasionally he limits his attentions to one or two women, but more often this is not true, and his illicit relations are multitudinous if the opportunities present themselves. These patients are absolutely unable to realize that there is anything wrong in such conduct, but on the contrary often feel proud of the fact, and make no effort to conceal it from their wives or husbands. Such behavior, of course, arises as a result of deterioration, which, with his elation, expansive delusions, and the physical signs of the disease, make the diagnosis easy.

The childishness and weakened judgment of the senile frequently leads him into inadvised courtship and marriage. Frequently we see these old men enmeshed by some scheming woman whose only aim is to fleece him of his property, which he, in his weakness, is unable to realize.

Where deterioration is further advanced and the ethical sensibilities blunted, we find him forming disgraceful liasons. Some years ago such a case was aired in court. Improper relations arose between an old white man of eighty odd and a negro woman, who got more than half a million dollars from him. While the courts did not restore his property to him, holding that he had given it to her willingly while in a responsible mental state, yet we are forced to believe that there must have been considerable deterioration present to have led him to thus give away his property to such a woman instead of to his children.

The next group of cases to be considered are those found among the victims of manic depressive insanity, during the manic phase of that disease. Here the love is rarely a true delusional condition as it is in the paranoid states, and is present only during the existence of the manic symptoms, disappearing in the normal intervals. It finds its origin in the eroticism, the patient's tendency to tumultuous overresponsiveness to stimuli, and the lack of restraining ethical sensibilities in the presence of the elation and self-approbation characteristic of this disease. The tendency of the manic patient in all things is to an immediate response to his every impulse, and the restraining influence of a calm judgment is lacking. This is manifested in his many whims and vagaries, foolish pranks and doings, restless activity and multitude of new schemes, unstable emotional attitude, and over-susceptibility to suggestion.

The conditions exist alike in both male and female patients, though really it does seem that abnormal sexual excitement is of more frequent occurrence in women than in men. Of course the difference in the standards for behavior of men and women make lapses more noticeable in the latter. Still, it is a rare thing to see a maniacal woman in whom eroticism is not a very noticeable symptom, which certainly cannot be said of all maniacal men. Even though we grant that it is present in equal intensity in both sexes, yet we must admit that its manifestations are much more noticeable in the female, and also that, for obvious reasons, it is a more serious matter. Because of this lesser prominence in the male, and because of his greater opportunities to gratify the passions that do arise, I think it is doubtful whether we find very marked examples of the "lovers" among men suffering from this disease. A condition of excessive sexual desire, which if present in a woman, would send her to an institution, might be entirely overlooked in a man. Probably another reason why we do not notice sexual excitement so much in the maniacal man after he has reached a condition necessitating his being sent to an institution, is the fact that he there seldom comes in contact with members of the opposite sex. This is not true of the woman, for ordinarily her physician is a man, and it is generally he with whom she falls in love.

Upon this basis of changed mental condition and eroticism, the woman forms a sudden infatuation for the first man who shows her a little attention, or in whom she thinks she sees an attractive quality. This leads her into saying and doing things that in her normal mental condition she would not do for her very life. The degree of intensity of her mental disturbances determines the extent to which she oversteps the bounds of propriety.

Thus in the milder hypomaniacal cases, she manifests her feelings in a rather exaggerated phase of the little wiles and coquetries of her sex. She seeks every opportunity to be in his company, blushing, sighing, and simpering the while, shows her jealousy of his every attention to other women, makes him presents of flowers, candy, jewelry, etc., calls upon him to perform all sorts of little trumped-up duties for her, writes him sentimental letters, and does a thousand other little things that go to show a woman's love for a man. The erotic element present is shown by her insinuating and suggestive remarks and actions, and her tendency to the unnecessary exposure of her person.

As the degree of excitement increases, the conduct

of this woman ranges through all grades from that condition in which she openly tells him of her love, publicly embraces and fondles him, and seeks to keep him with her constantly, to that in which she openly and in the presence of others exposes and offers herself for intercourse.

In the milder hypomaniacal cases her love may be directed toward a single individual, but as her mental disturbance increases, so does her sexual excitement, with a consequent offering of herself to every man she sees. Even the hypomaniacal patient, though, is not absolutely constant in her love, and it is the man of the moment in whom she is the most deeply interested. Still, after all, and in spite of her many flirtations with other men, there is nearly always one particular individual for whom she has a preference.

This abnormal sexual excitement may be the first and almost the only evidence of mental disease in certain cases, and not infrequently it is this symptom alone that necessitates the young woman's confinement in an institution. Often she has a quite clear insight into her own condition, and recognizes the abnormality of her behavior, but is unable to control herself. Masturbation is not infrequent.

I will briefly outline below three such cases:

Miss K., æt. 24, at puberty manifested excessive sexual excitement, which was about the only recognized symptom of mental disorder. This subsided in a few months, only to reappear six months later. This time she was a bit restless, emotional, and slept badly. She was cared for at home during three or four such periods, but when at the age of 18 the same condition reappeared, her parents questioned their ability to protect her, and sent her to the Home. Since then she has been admitted five times, each time remaining three or four months. In the intervals she has had several periods of mild depression. Each time that she has been here she has presented practically the same condition. She is mildly elated and rather unstable emotionally. There is some increase of motor activity as manifested by her busyness in many directions. There is practically no disturbance of thought, she is perfectly clear and rational on all points, so that as far as her limited education will permit, she is able to make herself quite entertaining in company. As an evidence of how controlled she is, I will state that she usually makes the journey of several hundred miles to and from the institution unaccompanied.

Yet, as she fully realizes herself, recognizing its pathological nature, she is in a very erotic state at the time. During her last three trips to us she has each time lavished her affections upon the same man, one of the physicians. Her advances are, of course, firmly repelled, yet she makes the doctor's life a burden while she is here. She follows him about the halls and parlors, seeking every opportunity to be near him, and when this is not possible she takes her stand where she can see him, and would remain there for hours at a time, gazing at him in the most lovelorn manner. She is exceedingly jealous of any attention shown by him to any other woman in the course of his duties, this jealousy often sending her to bed in a storm of tears. She frankly admits her feeling for him and likes to make insinuating remarks about their marriage. In his presence, regardless of others, she tries to take his hand, to lean against him, etc. When reproved for her conduct she weeps and admits that she should not act so, but says that she cannot control herself. She begs us not to believe that she is always so. In the presence of other men, if the opportunity presents itself, she is prone to be insinuating in her words and behavior, but after all, she is completely the doctor's own.

She masturbates somewhat during these periods. In the intervals between these attacks, so her parents tell me, she is a very proper and reserved young woman.

Miss H., æt. 30. She springs from a markedly degenerate and neurotic family, both her father and mother having frequent periodic attacks of depression. The mother is of such an abnormally jealous disposition that she cannot tolerate her husband's attention to their own daughters. Miss H. has for ten years past had regularly recurring attacks of mild depression, alternating with a state of hypomania, which has once or twice passed on to a marked maniacal condition. These periods last two or three months, and are usually separated by a somewhat longer period of normal mentality. In the states of elation, eroticism is the predominating feature, and were it not for this she could be easily cared for at home. She is naturally a very refined young woman, and these qualities continue to influence her in her illness. Thus, while each time she usually selects some man to fall in love with, yet she is generally very ladylike about it. The very serious feature of her case is that during this excitement she makes all sorts of charges of improper conduct on the part of her supposed lover. She tells this in such a straightforward way, with such attention to details, and is seemingly so clear and rational, that on more than one occasion she has come near causing serious trouble for some innocent man. She always tells these stories very frankly to her father, simply as a report of happenings, often not seeming to feel it necessary to excuse herself at all. She once told her father, in minute detail, about how she started down a back stairway with a man, and that they had intercourse together there. On another occasion she came to the Home simply on a visit, and not as a patient. One of the physicians, Dr. M., in the course of ordinary civility toward her as a guest, showed her some little attention. The next morning she claimed that the doctor had gone to her room during the night and sought admittance. At first she said that she had received him, but later denied this. She remained a day or two longer, and then went back home. On the way she stopped and purchased a ring. When she reached home she showed this ring to her father, and gave him a detailed account of her marriage to Dr. M., and said that they had spent the previous night together in a hotel in New York. There was no question of the falsity of her story from start to finish, but she stuck to it for some weeks, when she finally admitted that she had concocted the whole thing. This, however, not until Dr. M. had suffered considerable embarrassment.

The third patient, Mrs. M., though the mother of three children, and in her normal periods a loving and dutiful wife, is yet ready at the onset of her manic period to desert her husband for the other man of her choice. It has been the same man, a physician, each time for the last five or six years, during which she has passed through three or four attacks. She recognizes her feeling for the doctor as abnormal, but says she cannot control it. She seeks his company, writes long letters to him, telling him of her love, and goes still further in her confessions as her excitement increases. Much of the time her excitement does not progress beyond the hypomaniacal stage, and aside from eroticism, and an increased motor activity as manifested in her exceeding busyness and multiplicity of new schemes, she shows little evidence of mental disorder. Once

the doctor reproved her for her actions and her improper feeling toward him, telling her that when she recovered she would regret her conduct. "Why," she retorted, "should I regret what I may have done in my mental illness any more than I should regret having had a rapid pulse during a fever?" It is a most remarkable thing that these three women, particularly the first and second, should have escaped thus far with their virtue intact, as they have, so far as we have reason to believe.

In certain prominent features the maniacal insane lovers differ from those of the paranoid class. In the maniacal case the origin of this love is always to be traced to the abnormal sexual excitement, increased susceptibility to stimuli, facilitated release of impulses, and the lack of the restraining influence of the ethical sensibilities in the presence of the elation and sense of well-being.

Delusions and hallucinations are nearly always absent at the inception of this love, and if arising later are but concomitant symptoms of the condition already established. On the other hand, in the paranoid case this love is but a part and parcel of a fixed, progressive, and systematized delusional state, frequently originated and fostered by hallucinosis. A strongly erotic element is not necessarily present. Further, the maniacal patient often recognizes the abnormal nature of her impulses, which is never true of the paranoiac. The paranoiac is practically always monogamous so far as personal inclinations go, the maniac often polygamous. In mania the love disappears with the subsidence of the active symptoms of the individual attack, while in paranoia it remains through life.

Since beginning the preparation of this paper a very interesting case has arisen here at the Home.

Mrs. Z., aged 42, was admitted to the Home in 1893, remaining with us since then. On admission she gave a history of alcoholic neuritis of eighteen months' duration, mental disturbance having been presented during the twelve months preceding her admission. The records indicate very active hallucinosis, and frequent outbreaks of boisterous excitement during the first two or three years of her residence here. There gradually supervened a condition of mild deterioration, as shown mainly in a defective judgment and a loss of energy or ambition to change her mode of life. For the past five or six years, aside from this deterioration, she has shown little mental abnormality; so little, in fact, that we have always accepted without question her statements about happenings of which she had knowledge. We have used her as a sort of watch dog to report any irregularity that might occur.

She has been a regular member of the choir and orchestra for years. One of the medical officers was greatly amazed when he received the following letter from her recently:

"You don't know a good thing when you see it. I bet I can knock out in one round *all* your New York friends, in that line spoken of. Not that I want to brag, but experience is the best teacher, and that was the unanimous verdict formerly. I wish often I was as free as I was then. Guess you know why; if you don't, you must be stupid, and that I know you are not, although such a performance as that the other evening with S. and M. (referring to the night nurse and another patient) hanging around would argue that. I or anyone else could give you cards and spades on it. If you only knew how ardently I desired that spoken of, you would lose no time whatever in making permanent arrangements suitable all around. That is, if you are not altogether *non est*, as your looks indicated. But I can rejuvenate all the same. I have done it before. Now don't be a fool, and let's hear of the grand change lively.

"Hotly,

"Yours—

"Etc.

"Don't think I am going to deluge you with notes. This is my last."

When questioned by the doctor as to what she meant, she was greatly surprised that he did not understand, and became much embarrassed. He elicited from her that she believed that on the night previous he had come to her where she was sleeping in the dormitory, with eight or ten other patients, and had made improper proposals to her. She related in detail the whole conversation she believed to have occurred, with all the associated incidents thereto. She gave the hour of his supposed visit, mentioned the door through which he entered, the names of the other persons present, just where he stood, what he said, did, etc., and altogether demonstrated the existence of a false memory picture as clear and vivid in her mind as could be the impressions left in the mind of a normal individual by an actual occurrence.

It was, of course, impossible to convince her that he had not been there as she believed. When he denied it, she begged that he would never mention the matter again.

I have puzzled over this a great deal, trying to determine whether this belief had its origin in a dream or hallucinations. I am inclined to attribute it to the former. Her letter is very suggestive of what her past life probably was, though we know nothing positively about it.

This woman has for years been in such a mental state that, were it not for the fact that she has money for her support here where she wishes to remain, she would be out in the world, where I have no doubt she would be received as a normal individual. Imagine what might follow her charges under the latter circumstances!

Finally, in closing the consideration of these cases, I am forcibly impressed by two thoughts:

First, of the consequences that might befall these female patients of the maniacal class, if unsurrounded by due precautions and protection. Second, of the injustice that might be, and doubtless often has been, meted out to both men and women as the result of charges laid against them by these patients.

MEDICAL INSPECTION IN PUBLIC SCHOOLS.*

By INEZ C. PHILBRICK, A.M., M.D.,

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WHAT the eighteenth century established for man, and the nineteenth for woman, the twentieth will establish for the child—the principle of liberty; in case of the child, freedom from handicaps of birth, from unhygienic and immoral environment, from the degrading tendencies of industrial enslavement.

In the light of to-day's philanthropic agitation and effort, the present trend of legislative enactment, we may confidently predict that this century will direct its chief effort and realize its most vital accomplishment in the interests of the child. The State is more and more assuming paternal supervision of the child; witness child labor and compulsory education laws,

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the juvenile court with coercive power over the parent, and laws requiring medical inspection of all pupils in public schools.

Of movements for the betterment of child life, none takes precedence of that which is the subject of this paper—medical inspection in the public schools. Medical and lay literature attest public interest in this movement, as does also the considerable recognition in practice it has received. Indeed, so considerable has the literature of the subject already become, that all possible to each succeeding writer upon it is reiteration (which the subject will abundantly bear), and the addition of each writer's mite of result.

As indicative of the trend of medical and lay thought upon this question, let me instance the resolution adopted by the American Medical Association at New Orleans in 1903, urging boards of health, boards of education, and school authorities to adopt measures looking to the examination of the eyes and ears of all school children. This resolution was later adopted by the Mississippi Valley Medical Association and by twenty-one State societies, Nebraska being of the number, by the American Public Health Association, and by the State boards of health of twenty States, and by the State boards of education of eight States.

A committee appointed by the American Medical Association at New Orleans to look into the matter of public school inspection reported in the *Journal* of the association, April 15, 1905, urging complete and systematic examination of schools and school children. This committee has been continued at the subsequent meetings, the General Secretary informs me, but no further action has been taken by the association. At a conference this year in London, Eng., of 170 delegates from various educational and medical societies, preliminary to the International Congress of School Hygiene to be held in London in 1907, a resolution was adopted that medical inspection of pupils should be instituted in all public schools, and that women, as well as men, should be made inspectors.

The urgent need of medical inspection of public schools is attested by the results of work done here and abroad during the last decade. In Edinburgh, in 1903, a medical census of the public schools showed 70 per cent. of the children actually diseased. Thirty-six medical inspectors, appointed in Berlin in the spring of 1904, report that out of 15,000 examined, 25 per cent. were suffering from general physical debility, 5 per cent. were tuberculous, 10 per cent. were undeveloped mentally, 15 per cent. were suffering from anemia, rickets, scrofula, etc.

Dr. Armand Levy, in Paris, in 1904, examined 710 children from 4 to 13 years of age, and found 29.6 per cent. suffering from disease of the rhinopharynx. Dr. Lewis Somers, in his exhaustive essay, Medical Inspection in the Public Schools, published in the *Medical News* of January 17 and 24, 1903, gives an epitome of the collective results of an examination of 104,629 school children by several European investigators. Eliminating acute and accidental illness and myopia, the morbidity varied from 20 to 61.7 per cent. (the latter percentage in girls in Stockholm). Dr. John Cronin, chief of the Division of School Inspection, New York City, reported in May, 1905, that under the new system of inspection instituted in March, 1905, from March 27 to April 28, 1905, out of 7,166 school children examined, 33 1-3 per cent. had defects interfering with proper study. In the latest report of Health Commissioner Darlington on Inspection in the New York schools, he states that during the year there were 55,332 children examined, and 18,844 were excluded from school for contagious disease. Of those excluded, 8,833 were for disease of the eyes, 4,692 for pediculosis, 2,018 for disease of skin, 312 for measles, and 74 for diphtheria. Sixteen thousand, three hundred and ninety-four or 29.6 per cent., had defective vision, and 18,182 had defective teeth.

In the Report of the Bureau of Health of Philadelphia for 1904, we find that the number of pupils excluded from the schools was 11,317. Of the exclusions, 737 were for acute infectious disease, or contact therewith; 6,690 for parasitic skin disease; 117 for other disease of skin. There were found 1,756 cases of disease of the eye outside refractive errors, and of the latter there were 6,438. There were 1,012 cases of disease of nose and throat, and 80 of disease of middle ear. Four cases of tuberculosis, 2 of epilepsy, and 18 of chorea are tabulated, beside infected wounds, fractures, etc. Three hundred and twenty-eight unvaccinated children were found in the schools. Recently the Child-Study Department of the Board of Education of Chicago found, on examining the eyes of all public school children in the city, 32 per cent. of boys and 37 per cent. of girls had defects of vision, falling two-thirds below normal. In Cleveland, Ohio, examination of 32,939 pupils showed 18.7 per cent. having defects of vision. In Minneapolis, 32 per cent. of 25,000 pupils showed defective vision. The investigations of six observers in eastern cities (quoted by Somers) showed impaired hearing in 20.33 per cent. of children examined.

Medical inspection, if it meet the two-fold need of pupil and public, must include supervision of the sanitation of the schools, and systematic, complete and frequent examination of the pupils. The requirements of efficient inspection are well set forth in the Rules of the Bureau of Public Health of Philadelphia, 1904, from which I quote. Under the head of Sanitation must be considered questions of overcrowding, heating, ventilation, illumination, cleanliness, water-supply, toilets, cloak rooms, cellars, and playgrounds. Inspection of the child should include detection of defects of vision—myopia hypermetropia, strabismus, astigmatism; defects of hearing, by watch and rule, with inspection of external ear; ophthalmic disease—conjunctivitis, trachoma, obstruction of lacrymal canal; diseases of throat and nose—tonsilitis, diphtheria, adenoids; disease of skin; of thorax; malnutrition; parasitic diseases. In New York, to these requirements are added inspection of teeth, and bacteriological tests of all suspicious deposits in the throat.

Various systems of medical inspection are to-day in operation. There may be required the complete examination of every pupil at stated intervals; or the medical inspector may be subject to call by the principal of the school, examining fully all children brought before him—the emergency system, so-called. There may be required examination of the eyes and ears of every pupil by the physician or by the teacher, the latter obtaining under the Allport system. Inspectors may give their services (the voluntary system) or be paid. Under any system, to obtain effective service, there must be organization of forces under efficient direction from within and from without. Chief inspectors should be sanitarians, chosen solely because of their interest in public health problems and their willingness to devote time and labor to the work. There should be frequent meetings of medical inspectors for the discussion of public health questions and for helpful exchange of opinion. Societies of Medical Inspectors have been founded in Philadelphia, Boston, and New York. The system of public school inspection should be subordinate to the State Board of Health,

or the municipal Board of Health, where one exists, worthy the name.

From the above enumeration of the requirements of efficient inspection, it clearly appears that the complete physical examination of the child can be made only by the physician; and that such examination must be systematic and individual. The emergency system is open to the objection that a large percentage of physical disabilities will inevitably escape the observation of the lay principal. Besides lack of medical knowledge sufficient to make the principal a competent observer, there will often be lack of interest, and possibly occasionally real hostility to the work. Medical inspection, if it be satisfactorily performed, must be remunerated. No competent physician can be expected to relinquish so large a share of time and income as his duties as inspector, if conscientiously performed, would necessitate. Voluntary inspection proved a failure in Philadelphia, where it was instituted in 1898, with 200 inspectors. Somers reported in 1902 that only about 10 per cent. of the original inspectors remained on duty, and medical inspection in Philadelphia had lapsed into a state of masterly inactivity. Now Philadelphia has 48 medical inspectors, paid $1,200 a year; Boston, 50 inspectors, paid $200 yearly; Chicago, 12 inspectors, paid $50 a month each; New York 53 inspectors at $1,200 a year. Chicago alone of these cities has the emergency system. Of special features of medical inspection which obtain in certain cities may especially be commended the psychologic tests made in the Chicago schools; the special classes for mental defectives, in Boston, and the nursing corps in New York. Health Commissioner Darlington, in his latest report, highly commends the work of the nursing corps at present in Manhattan, composed of 19 nurses. This feature was added in 1902. The following diseases are treated by the school nurses: Pediculosis, conjunctivitis (*never* trachoma), ringworm, scabies, impetigo, favus molluscum contagiosum. Through the work of the nurses many children remain in school who would otherwise be excluded.

For the routine examination of eyes and ears alone, necessarily the specialist's services are most valuable; next, those of the general physician; and, lastly, those of the teacher. However, for practical reasons, undoubtedly the Allport system is the most feasible for obtaining results. The majority of teachers in our secondary schools being women, true to the instincts and traditions of their sex, they for the most part uncomplainingly assume any added burdens which boards of education and superintendents, mostly men, true to the instincts and traditions of their sex, thrust upon them. This system, with which doubtless most of you are familiar, requires the use by the teacher of Snellen's test types, and the answering by her, through information gained from the pupil or from observation, of the following questions: First—Does the pupil habitually suffer from inflamed lids or eyes? Second—Does the pupil fail to read a majority of the letters in the No. 20 line of Snellen's test types with either eye? Third—Do the eyes and head habitually grow painful after study? Fourth—Does the pupil appear to be cross-eyed? Fifth—Does the pupil complain of earache in either ear? Sixth—Does matter (pus) or a foul odor proceed from either ear? Seventh—Does the pupil fail to hear an ordinary voice at twenty feet in a quiet room? Eighth—Is the pupil frequently subject to colds in the head and discharges from the nose and throat? Ninth—Is the pupil an habitual mouth-breather?

In case of affirmative answer to any of these questions, the teacher sends a card of warning to the parents. Dr. Cronin says that in New York 50 per cent. of children whose parents were notified of their showing defects of vision, were fitted with glasses.

What can medical inspection accomplish for the pupil? Alone considering eye and ear, it can remove the chief handicap to the obtaining of a common school education, and can lay the foundation in physical health for further years of study and the practical duties of life. For the myope it can create a new heaven and a new earth. Dr. Allport, in his address before the Minnesota Academy of Medicine, February 6, 1895, quotes M. Francesque Sarcy, the French critic, a high-grade myope whose experience doubtless many here present have duplicated.

"I was born myopic. One day prompted by a spirit of mischief, I got hold of the big silver spectacles which my father wore, and clapped them on. Fifty years have passed since then but the sensation I experienced is keen and thrilling to this day. I gave a cry of astonishment and joy. Up to that moment I had seen the leafy dome above me only as a thick, green cloth, through which no ray of sunlight ever fell; now, Oh wonder and delight! I saw that in this dome were many brilliant chinks; that it was made of myriad separate and distinct leaves, through whose interstices the sunshine sifted, imparting to their greenery a thousand forms of light and shade. But what amazed me most, what enchanted me so that I cannot speak of it to this day without emotion, was that I saw suddenly, between the leaves and far, far away beyond them, little glimpses of the bright, blue sky."

By the correction of hypermetropia and astigmatism, the nervous, inattentive, ungovernable pupil, with constant complaint of headache, may be veritably transformed. Like marvelous transformation often follows the removal of adenoids, with correction of mouth-breathing, with its attendant anemia, malnutrition, irritability, and dullness.

Medical inspection will discover children of marked mental deficiency, who, removed to special classes, will acquire vastly more and quicker than could they in the regular grades. The child's whole mental, physical, and moral constitution will be safeguarded by thorough and competent medical inspection; inherited tendencies will be combated and present vices of constitution corrected. There is no limit to the good it can accomplish within the beneficent possibilities of medical science.

What can medical inspection do for the public? It can, and will reduce marvelously the prevalence of contagious disease and the mortality therefrom. Reason would dictate what experience proves—that medical inspection, in its public health function, finds wider scope in the large centers of population, with their overcrowding, poverty, and filth. The Massachusetts State Board of Health, as quoted by Somers, enumerates three new factors in the suppression of epidemics of diphtheria,—antitoxin, bacteriological examinations, and, last and most potent, daily medical inspection of the public schools. In Boston, during fourteen months ending December 31, 1895, 77 cases of diphtheria were found in their seats at school. In Newark, N. J., 13 cases were found in four months. In Chicago in four months, 233 schools were visited, and 1,417 cases of diphtheria found. From January to May, 1901, 401 cases of scarlet fever were found in the schools of Chicago. In Boston, in 1900, 23 cases of diphtheria were discovered in the schools. In Philadelphia, 231 cases of diphtheria were found in the schools, which cases led to the detection of 745 other cases in the homes.

The above facts are sufficient to suggest the vast possibilities in medical inspection for the mainte-

nance of public health and the reduction of mortality. Abroad, inspection of the eyes of school children has been practised, in isolated cases, since the first year of the nineteenth century. Risley, in Norris's and Oliver's System, gives an epitome of the results of such inspection, the most important being those of Cohn from the examination of 10,000 school children of Breslau in 1865-66. Risley states that up to 1897 the eyes of 200,000 children had been examined by competent persons.

Complete medical inspection, in the United States, is of twelve years' standing. Boston, led thereto by an epidemic of diphtheria, instituted medical inspection in the public schools in 1894; New York, in 1897; Philadelphia, in 1898; Chicago, in 1900. Other cities mentioned by Somers where it is in effect are Orange, N. J.; Brookline and Newton, Mass.; Jersey City, Asbury Park, Milwaukee, Minneapolis, Salt Lake and Cleveland. There are recent references in medical literature to its adoption in Cincinnati and Kalamazoo. Doubtless it has been instituted in many others. Two states, Connecticut and Vermont, have enacted laws requiring partial inspection; Connecticut requiring examination of the eyes only, by superintendent, principal, or teacher; Vermont requiring examination of the ears also, and fixing a stated time, September of each year, for such examination. Dr. Allport informs me that, if the present Massachusetts legislature has not already passed a law similar to the Vermont law, it will do so before the close of the present session.

Medical inspection of the public schools has had a nominal existence in Lincoln since December, 1901. For general medical inspection, the voluntary emergency system prevails. Inspectors are not paid for their services, and they are subject to the call of their respective principals. Routine, individual inspection of every pupil is not required. Two physicians, appointed by the Board of Education, together with the President of the Board of Health, constitute the Board of Medical Inspection of Public Schools, which board, with the approval of the Board of Education, appoints an assistant inspector for each public school. It is the duty of the chief inspectors to visit, at least twice yearly, their respective schools, in order to determine the sanitary conditions prevailing therein; to aid assistant inspectors in the event of any formidable epidemic, and to receive weekly reports from the assistant medical inspectors. Experience has here, as elsewhere, already demonstrated the inefficiency of a voluntary emergency system of medical inspection. For the examination of the eyes and ears of children in the public schools, through the effort of Dr. W. M. Cowgill, the Allport system was adopted last fall, and two specialists were assigned to each school to direct the work of the teachers. It is, as yet, too early to obtain a report of the first year's work.

In the fall of 1903, on my own initiative, I began a systematic individual inspection of the pupils of the Everett School; the following year like work was done in the Capitol School, and this year, in the Park. In each of these schools I have had the hearty co-operation of the principal, Misses Sarah Rands and Anna Tibbetts, and Mrs. Mary B. Fleming. These three schools are fairly representative of the school population of Lincoln. The Capitol School is attended largely by children from well-to-do families, and has, probably, as little foreign admixture as any. The Everett School, with 1 2-3 as many children of foreign parentage, draws much more largely from the poorer classes. The Park School is more than one-half of foreign parentage, predominantly German.

Lincoln is a healthy city. We have no slums, no overcrowding, little real poverty. W. C. Rohde, Health Officer of Lincoln, has kindly furnished me with the mortality records for the past five years. Placing the population of Lincoln at 42,000 in 1901 (the census of 1900 showed 40,000), with an estimated increase of 2,000 each year, the death rates are as follows:

1901,	10.42	to each 1,000 of population.
1902,	7.07	to each 1,000 of population.
1903,	8.39	to each 1,000 of population.
1904,	8.56	to each 1,000 of population.
1905,	7.94	to each 1,000 of population.

During the past five years there have been 323 cases of diphtheria quarantined, with 44 deaths, or 13.6 per cent.; and 264 cases of scarlet fever, with 1 death, or .3 of 1 per cent.

Not being familiar with methods of medical inspection elsewhere employed when I entered upon this work, nor with the Allport System, the plan which I then formulated was not as comprehensive as I now would make it. My record contains name, age, nationality, grade, sex (when name not distinctive), race; the results of eye-tests with Snellen's test types, the eyes being examined singly, except in the First Grade; tests of hearing, with improvised acoumeter at increasing distance, each ear being tested with the other covered and the eyes shut; inspection of throat, lids, posture, general appearance; also, answers to questions as to the fact of headache, its frequency, severity, and location when present. The examinations were made singly, in an unoccupied room. From 20 to 25 children were examined in a morning's work. In all, 1,018 children were examined—262 at the Everett, 414 at the Capitol, 342 at the Park. Of these, 519 were boys and 499 girls. The percentage of children of foreign parentage was 21 in the Capitol, 35 in the Everett, and 55 in the Park. Forty-five per cent. of children in the Park School were of German parentage; in fact, of foreign parentage, German largely predominates in all the schools; next following in order, Swedish, English, and Bohemian.

In the Everett School were found the following percentages for the various defects: Myopia (20-40 or less), 13; defective hearing, 9; hypertrophied tonsils, 21; spinal curvature, 53; appearance of poor health, 16; mouth breathing, 3.6; deafness associated with hypertrophied tonsils, 56.

In the Capitol School were found the following: Myopia (20-40 or less), 9; defective hearing, 7; hypertrophied tonsils, 22; spinal curvature, 66; appearance of poor health, 18; mouth breathing (all suspicious cases), 9; deafness associated with hypertrophied tonsils, 23.

In the Park School were found as follows: Myopia (20-40 or less), 11.6; defective hearing, 8; hypertrophied tonsils, 17; spinal curvature, 54; appearance of poor health, 8; mouth breathing, 12; deafness associated with hypertrophied tonsils, 10.

Myopia is the only refractive error of which my tables give an accurate estimate. To arrive at an estimate of the relative prevalence of other refractive errors we may include, as presumably associated therewith, cases of persistently recurring and severe headache induced by study; cases which wear glasses, but in which the test type fails to reveal myopia, and cases of severe chronic conjunctivitis

In the Capitol School there were found 21 cases of follicular conjunctivitis, 33 cases of headache, and 17 who were wearing glasses without discoverable myopic error; a total of 71 cases, or 17 per cent. of the whole school.

In the Park School were found 11 cases of follicular conjunctivitis, 32 of headache, and 6 wearing

glasses without discoverable myopic error; a total of 49, or 11 per cent.

Risley, from result obtained from examination of the eyes of all children in the public schools of Philadelphia by specialists, without the use of a mydriatic, but with attention to every detail helpful to accurate results, puts the ratio of normal vision and of the various refractive errors as follows: Emmetropia, 11.19 per cent.; hypermetropia, 31.23; hyperopic astigmatism, 42.81; myopia, 2.68; myopic astigmatism, 11.02; mixed astigmatism, 1.07.

According to this ratio my tables should give 61.40 per cent. of errors other than myopia.

Allport gives the percentages found by Erismann of St. Petersburg, in 1871, of myopia and hypermetropia, in his examination of the eyes of 4,368 school children.

Class.	1	2	3	4	5	6	7	9	10.
Myopia	13.6	15.8	22.4	30.7	38.4	41.3	42.	49.8	41.7
Hypermetropia	67.8	55.6	50.5	41.3	34.7	34.5	32.4	36.2	40.

This table shows the steady increase of myopia in ascending grades, and a less marked decrease in hypermetropia. It, as well as Risley's table, stamps my percentages of refractive error other than myopia as untrustworthy.

Of all refractive errors, myopia is the one detection of which is most important, because of its progressive and dangerous character. To point its progressive character. Risley, in Norris's and Oliver's System, quotes Cohn's figures: In 5 villages, 1.4 per cent. of myopia; in 20 elementary schools, 6.7 per cent. of myopia; in 2 higher girls' schools, 7.7 per cent. of myopia; in 2 intermediate schools, 10.3 per cent. of myopia; in 2 realschulen, 19.7 per cent. of myopia; in 2 gymnasia, 26.2 per cent. of myopia; in the university, 59.5 per cent. of myopia.

My percentages of defective hearing, 9, 7, and 8, fall much below the only percentage I can find based upon a large number of cases—20.33 per cent.—the result obtained by six observers in eastern cities, quoted by Somers. My percentages of spinal curvature, from the slightest detectable to real deformity, obtained by inspection alone, without removal of clothing, 53, 66, and 54, are sufficiently large to indicate the need of other methods of seating, writing, etc., than at present obtain in our schools. Contrary to expectation, and to results obtained elsewhere, boys showed curvature in slightly greater number than girls. The percentages in the Everett and Capitol schools of children having the appearance of poor health are almost identical 16 and 18 per cent. The small percentage, 8 per cent., at the Park is noteworthy. These children, whose parents were German colonists in Russia, are unmistakably better nourished and more robust than native American children. It seems as though the process of natural selection through rigors of climate and deprivations of poverty must in part account for the sturdy health of these children. Certainly every, to us, essential law of hygienic living is violated in their homes. As might be predicated without investigation, the children of the Capitol School have received far more medical attention than those of the Park, there having been performed on them 6 tonsillotomies, 5 adenoid operations, 1 mastoid operation; 22 were wearing glasses and 4 had worn them; the eyes of 9 others had been examined. At the Park School 4 were found wearing glasses and 2 had had operations performed, on eye and nose respectively in each case for accident.

No record was made of skin disease brought to my attention by the principals, of which there were a few. No systematic investigation was made as to the prevalence of skin disease, although very little, if any, present on visible portions of the body, could have escaped attention. No special inspection of teeth was made, a serious omission.

A study of the colored population of these three schools shows 15 in the Everett, 3 in the Capitol, and 6 in the Park—a total of 24, 12 boys and 12 girls. Nine of the boys and 6 of the girls showed normal vision and hearing. Five were myopic and 3 showed defective hearing (one being almost totally deaf); or 20 per cent. were myopic and 12 per cent. deficient in hearing, percentages higher than for other children. The small number of children examined renders these percentages of little value. The only statistics I have found relative to colored children are those of Callan of New York, quoted by Allport, who examined 457 negro children between five and nine years of age, and found 2.5 per cent. myopic.

Let me instance a few special cases. In the Everett I found P. W., aged 14, Fourth B Grade, daughter of a well-to-do saloonkeeper; vision in right eye 20/50 and in the left, 20/100; almost totally deaf in the right ear; tonsils large and pitted; mouth-breather; notched teeth; very unhealthy in appearance. When notified of her daughter's condition, the mother visited the school and soundly berated the principal and myself (who fortunately was absent) for presuming to suggest the presence of any defect. In this case nothing has been done. Presumably unfortunate domestic conditions eventuating in the divorce of the parents may be partially responsible for the neglect. In the same school a feeble-minded boy, who, because of his irritability, was a constant menace to school discipline, was, through the cooperation of principal, medical inspector and sensible parents, removed to the Institute for Feeble-Minded at Beatrice, where he is contented, docile, and is making marked progress. In default of visits from the chief inspector of the district, the principal and myself addressed to the Board of Education a statement regarding the disgraceful condition of the toilet rooms, especially the boys'. This was signed by the principal, the janitor, and myself, and was sent to the board. No action was taken by the board. Perchance the information and suggestion did not emanate from the proper source.

In the Capitol School was found an epileptic whose attacks were infrequent, but which occasionally occurred in school. The principal had already called the attention of the superintendent to this case, who had reported the parents unwilling to have the boy removed from school. He is still in school, now seventeen years of age, and in the Eighth Grade. The first day of school this year he had an attack; but he does fairly well in his studies, and is docile. He should be in a special class. A feeble-minded child in this school should have been sent to Beatrice, but in this case the necessary adjunct to successful accomplishment—sensible parents—was wanting.

At the Park School, during the present year, one boy appeared for the routine examination presenting clinical evidence of diphtheria. Three cases of scabies, in children just returned from the beet-fields, were excluded, and a visit made by myself to the home to instruct in the treatment. Examinations at the Everett School were, during the first half of the year, conducted in a cellar with brick walls and floor. Later, this being required to accommodate a class of beet-field children, I withdrew to a darker and mustier cellar, so poorly lighted that the work could be carried on only on sunny days. Being situated beneath the kindergarten, extreme patience and ingenuity were required to sandwich in the tests for hearing between the marching, singing, and shuffling of the kindergartners.

REMOVAL OF AN INTRALIGAMENTARY CYST AND BILATERAL OOPHORECTOMY DURING EARLY PREGNANCY WITHOUT INTERRUPTING GESTATION.*

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Mrs. B. L. first came under my notice for her present trouble on August 3, 1903. She was twenty-eight years old, married twelve years, and had given birth to four children, the youngest being eight months old. Her confinements had been normal with the exception of the last, in which dystocia was due to a breech labor. Her puerperal weeks had been without accident, and she looked like a fairly healthy type of woman. Her menses, since her last childbirth, had come on when her baby was four or five weeks old, and had been rather profuse. Recently she had begun to complain of a left-sided abdominal pain, which had a tendency to spread over to the right side. Excepting a moderate leucorrheal discharge, she complained of nothing more. Bimanual examinations revealed a normally placed uterus, somewhat large, and, behind it, a soft, fluctuating tumor about the size of an apple, which was regarded as an ovarian cyst.

On December 2, 1903, the patient reported again. Her periods had recurred at regular four-weekly intervals, had become more profuse, and were associated with pains all over the abdomen and back. The pain was now present in the intermenstrual epochs and was becoming more severe over the right side. The tumor lay quite low in Douglas' sac and had distinctly increased in size. She rejected operation.

I lost sight of the patient for more than a year. In the early part of December, 1904, she called again. She was seven weeks pregnant. The tumor seemed to be larger in size, and she readily submitted to my proposition that she be operated upon.

On December 19, 1904, at Beth Israel Hospital, laparotomy was performed through a suprapubic, transverse incision. On the right side and behind the uterus the intraligamentary cyst presented to-night was found and removed in one mass with the intimately connected Fallopian tube and cystic ovary. The ovary of the left side was found enlarged and microcystic. It had a rather broad attachment to the posterior surface of the broad ligament, which was clamped and the ovary exsected. The stump, was sewed over, and it is likely that a small fragment of the cortex of this ovary may have been left attached to the broad ligament in the suture. Convalescence was uninterrupted and the wound healed by primary union. The patient left the hospital after several weeks, pregnancy not having been disturbed.

She went on to term and was delivered of a fine baby, which is now ten months old. Menstruation has been fairly regular since she left the hospital, and, on one occasion, she called in great alarm at my office to learn whether, in spite of my assurance to the contrary, pregnancy had not again set in. Local examination negatived this suspicion. She last saw her menses on April 28, 1906, and they lasted five days. The abdominal wound showed at no time, during the pregnancy or since, any sign of weakening or hernia. The patient is still nursing her child.

*Read at the special meeting of the Deutsche Medizinische Gesellschaft, in honor of Professor Dührrsen, on May 15, 1906.

This case is reported in order to emphasize three features of interest, all of which may be of practical value:

1. The comparatively small risk of doing intraperitoneal surgery on the pregnant woman.

2. The value of the transverse incision in order to guard against hernia in cases of progressive pregnancy.

3. The practically complete removal of both ovaries was not followed by disturbance of the impregnated ovum.

Regarding the first proposition, the question naturally suggests itself as to whether it would not have been wiser to have artificially interrupted the pregnancy and then to have proceeded to the removal of the tumor. While I have, on occasion, followed this method myself, I think the consensus of gynecological opinion is to avoid double work by attacking the chief factor at once, especially as by modern methods this can be done with comparatively little danger. Thus Heil has reported 241 ovariotomies done during pregnancy, with a mortality of only 2 per cent. On the other hand, it is highly dangerous to leave such tumors undisturbed until labor has set in. McKerror collected 720 cases of this kind, and records a maternal mortality of 21 per cent. In my studies made ten years ago, I found that ovarian cysts and those of the broad ligament complicating pregnancy at term showed a maternal and fetal mortality of about 50 per cent. Of course this fearful mortality rate applied only to the older statistics collected up to that time. The risk of interrupting pregnancy is considerably augmented when operations are done in the advanced months of gestation. Thus, in recent times, Audebert finds that 60 per cent. of these cases are followed by an interruption of pregnancy.

During the past eighteen months I have done five laparotomies on pregnant women, the pregnancy being interrupted in one of the cases. Briefly narrated, the cases were as follows:

Case I.—A young recently-married woman was willing to be operated upon on condition that every effort should be made not to deprive her of the possibility of maternity. From the uterus—in an early stage of pregnancy—grew six sessile pedunculated myomata, the largest reaching as high as the umbilicus. Multiple myomectomy was done and the patient left the hospital after three or four weeks with the pregnancy undisturbed.

Case II.—In this patient (who was also in an early stage of pregnancy), an ovarian cyst, the size of a football and with twisted pedicle, was successfully removed without disturbing the pregnancy.

Case III.—This was the case reported to-night. An intraligamentary cyst and both ovaries were removed in the seventh week of pregnancy and the patient carried her child to term.

Case IV.—This intervention was followed by spontaneous abortion. Laparotomy was done for an intraperitoneal purulent collection which had formed about the fimbriated extremity of a left-sided pyosalpinx. The diseased adnexa were removed from this side. On the right side another pus tube was discovered and removed. The corresponding ovary was exsected in part only. Drainage was deemed necessary in this case through the lower angle of the abdominal wound. On the third day a small fetus with placenta was expelled from the uterine cavity. Convalescene was otherwise undisturbed.

Case V.—This was a case of appendicitis operated on during the third month of pregnancy in a primipara, without interfering with the gestation.

I have resorted to the transverse suprapubic inci-

sion of Pfannenstiel several dozens of times without mishap. In this country I think that Stimson has made use of this incision in the largest number of reported cases. Very rarely, because of the need of more room, I have been obliged to add a median longitudinal incision, converting it into an anchor-shaped wound. This has not been followed by any marked interference with the proper healing of the wound. While the applicability of the incision has its limitations, I have done a large range of operations by its means: hysterectomy when the size of the uterus was not prohibitive; operations on tubes, ovaries, and intraligamentary tumors; ventrofixation and appendectomy. In two instances at least I removed fairly large pus tubes. In one case I removed through this incision a multilocular ovarian cyst on one side and an intraligamentary cyst on the other. Tumors the size of two closed adult fists and larger are readily removed through this transverse cut.

In the case reported to-night I believe that the idea of the transverse incision was a particularly happy one, because the woman was in an early stage of pregnancy and had before her seven months of progressively increasing tension on the abdominal scar. At no time during pregnancy was there any evidence of thinning of the scar, and at present, long after delivery, there is not the remotest suggestion of a hernia.

Finally, it seems to me that this case deserves to be placed on record as one in which the removal of both ovaries was not followed by an interruption of the pregnancy. I make this assertion deliberately and advisedly, with a full knowledge of the fact that a small fragment of the cortex of one ovary was left in the pedicle attached to the broad ligament.

Mandl states the theory of Born to be that the corpus luteum of pregnancy has as its function the implantation of the impregnated ovum in the uterine mucosa, with its further growth and development safely controlled. More than ten years ago Sokoloff described atrophic phenomena in the uterine muscle following castration, and assumed that this atrophy was due to trophic disturbances in the nerves and nerve centers. He first castrated animals in the second and third weeks of pregnancy. At the end of two months the animals were killed, and while no trace of the fetus could be found, atrophic changes were discovered in the uterine structures. From this he concluded that after castration a degeneration of the embryo ensues, terminating in its complete absorption.

Fraenkel, whose views are accepted by Fleck and others, goes further. He attributes menstruation to the influence of an internal secretion of the corpus luteum. He regards the corpus luteum as a glandular structure with a special secretion formed in regular cycle periods, which supplies a trophic impulse to the uterus. One of the results of this influence he claims to be the retention *in utero* of the impregnated ovum. From his experiments on rabbits he lays down the law that "the retention of the impregnated ovum is dependent on the presence of the ovaries." Animals castrated shortly after intercourse fail to become gravid at all. He draws the practical conclusion, in the human female, that ovariotomy should be postponed until the latter end of pregnancy, or at least "until the corpus luteum has fulfilled its function."

While Halban is inclined to oppose Fraenkel's theory in regard to the corpus luteum, he seems to agree with him in regard to the influence of the ovaries in controlling the implantation of the fructified ovum.

On the other hand, Skrobansky, in about one-third of his experiments on gravid rabbits, found that if, between the tenth and sixteenth days, the ovaries were carefully removed, pregnancy would continue undisturbed and delivery take place at the right time. These experiments would seem to dispose of the question definitely. The author adds, however—and this strikes me as illogical—that the removal of the corpora lutea, leaving the ovaries otherwise intact, should render a continuance of gestation impossible.

From observations and studies on the human subject, Zacharias concludes that the persistence of pregnancy in those cases in which double oophorectomy had been performed is explained by the presence of small portions of ovarian tissue left in the stump. He thus accounts for a case of Pozzi. If this explanation does not stand fire, he still clings to the idea of an accessory ovary having been overlooked at the time of operation. Prof. Elis Essen-Möller, however, in reporting a case in which pregnancy went on to term after bilateral oophorectomy done in the early period of gestation, distinctly denies both of these contingencies in his particular case. The same is true of Kosmiuski's case.

I submit the report of this case to your consideration for what it is worth. A third ovary was certainly not present. Whether the minute fragment of ovarian tissue left in the stump sufficiently explains the retention of the fructified ovum *in utero* with the persistence of menstruation since, I leave to you to determine.

Note.—Since the above was written the following facts have come to the writer's notice: In 1895 Mainzer was able to collect statistics of sixteen cases of double ovariotomy done during pregnancy, in which gestation was interrupted, as a result of the operation, in five. Orgler, in 1902, added fourteen cases, with one interruption of pregnancy. Graefe, this same year, added two more cases, with one interrupted gestation. In 1904 Heil collected eleven additional cases, with two interrupted pregnancies. Adding Essen-Möller's and Kosmiuski's cases, we have two more cases in which pregnancy was not disturbed. Besides the writer's case reported in this paper, Dr. G. M. Edebohls has, in an unpublished case, also done bilateral ovariotomy without interrupting the associated pregnancy. Up to date the number of double ovariotomies done during pregnancy amounts to forty-seven cases, with interruption of pregnancy in nine, or 19 per cent. of the cases. Finally, it may be of interest to note that the mortality of ovariotomy during pregnancy was placed by Fehling at 5 per cent. Orgler, by studying later statistics, was able to reduce the death-rate to 2.7 per cent., and Graefe, still later, reduced it to 2.3 per cent.

112 East Sixty-first Street

A CONTRIBUTION TO THE ETIOLOGY OF OTITIS MEDIA ACUTA SUPPURATIVA POST MORBILLOS.

By GUSTAV BAAR, M.D.,
PORTLAND, OREGON.

In March, 1904, there came into my office the farmer B., who had just come with wife and five children from a place in Colorado, situated at an altitude of about 8,000 feet, to Portland, with an altitude of about 100 feet. He reported the following: Eighteen days ago his daughter Clara, 11 years old, became ill with the measles; two days later his daughter Anna, 13 years, and at the same time his daughter Lily, 9 years; after three days more

Margaret, 2 years, and after three more days also his 7-year-old Francis, became ill in the same manner. After the disappearance of the eruption all the children were seized with earache, which lasted about one day, following which the ears began to discharge.

The following report on the course of the five cases lays no claim to scientific preciseness. The fact that it proceeds from the day-book of a busy general practitioner may excuse many a fault in form.

I. Anna (thirteen years old).

May 15.—The child for the last week has had pains behind her left ear and purulent discharge. The mastoid process is very painful on pressure and edematous, as is also the region before the auricle. Temp., 101.8°; pulse, 120. Right ear normal. At the left the exterior auditory meatus is narrowed by the swelling of the anterior and posterior wall; there exists fœtor ex ore. Treatment: Compresses with Burow's solution.

May 16.—Considerable pain during the night, ceased this morning. Temp., 99.2°. Purulent discharge profuse. Edema has almost disappeared. Only some sensitiveness on pressure.

May 17.—Last night temp. 104°. Mastoid process again painful. Secretion of pus profuse. Temp. in the morning, 99.6°.

May 18.—Temp. during the night, 102.0°; in the morning, 99.8°. Mastoid process is still painful; secretion profuse. The examination of the pus taken from the depth of the exterior auditory meatus shows the following: Numerous pus corpuscles, moderately numerous cuboidal cells, now and then mucus corpuscles, moderately numerous diplococci, resembling the gonococci in shape and size, without capsules, singly or in groups and in chains of from four to six pairs, mostly intracorpuscular, now and then also extracorpuscular; otherwise no other cocci nor bacteria.

May 19.—Swelling and painfulness of the mastoid process lessened. Patient slept well. Temp., 98.8°. The membrana tympani bulging out and swollen in its posterior part; in its anterior part two granulations; secretion diminished. Treatment: Drainage with gauze soaked in Burow's solution.

May 20.—Left membrana tympani red and swollen; mastoid process still painful, little purulent secretion. The stab and streak culture made with the pus of the ear on Koch blood serum showed a broad streak consisting of white pointed colonies, which when melting together, appear yellowish; positive to Gram's stain; but among them are groups of cocci of the same shape and grouping as the former, which are, however, negative to Gram.

May 21.—Yesterday afternoon temp. 101.0°; this morning, 98.8°. The point of the mastoid process is still painful upon pressure, the depth of the exterior auditory meatus and the membrana tympani is still red and swollen. Secretion slight.

May 23.—Temp., 101.2°. Mastoid process still sensitive. Secretion slight.

May 24.—Temp., 100.4°. Mastoid process still painful. Membrana tympani red and swollen; from the perforated spot arises a small granulation.

May 25.—Temp., 101.4°. Membrana tympani not swollen; but little secretion; now and then pains behind the ear.

May 28.—The patient spent a sleepless night in consequence of pains behind the ear; there is nausea; the tongue is coated. Temp., 103.5°. But little secretion. Operation by Dr. Coffey. Opening of the mastoid process and of the antrum with evacuating of a few drops of pus; curettement of the cavum tympani through the exterior auditory meatus. The pus evacuated by the operation consists of pus corpuscles, mucus corpuscles, and blood corpuscles, as also of cuboidal ephithelia; no cocci, no bacteria.

June 8.—Discharged as cured.

II. Margaret (two years old).

May 16.—Otitis media acuta suppurativa bilateralis without complications. Treatment: Irrigations with solution of boracic acid.

May 18.—Temp., 100.0°. On both sides purulent secretions. Membrana tympani red and swollen. In the auditory meatus vesicular eczema. With Margaret the pus consists of numerous pus corpuscles; cuboid cells and mucus cells; numerous diplococci, singly, in chains of from four to six, or in groups, mostly intracellular, but also extracellular; in shape and size they are like gonococci. Otherwise in the pus no other cocci nor bacteria; discolored by Gram's stain.

May 19.—Temp., 98.7°. Still profuse secretion on both sides; membrana tympani red and swollen.

May 20.—Temp., 99.0°. Still secretion on both sides; membrana tympani very red on both sides. The streak-culture made with the pus of the ear on Koch blood serum, shows after eighteen hours a considerable growth, consisting of white pointed protuberances which, when conglomerating, appear yellowish. Numerous cocci, singly, in pairs, or in short chains of from three to five pairs of the size of gonococci, mostly Gram-positive, a few Gram-negative.

May 21.—Temp., 100.4°. There is yet considerable secretion on both sides; membrana tympani on both sides red and swollen.

May 23.—On both sides considerable purulent secretion.

June 4.—Right side secretion moderate; left membrana tympani of normal color; no secretion. The mother reports that the child, for three days has had fever, coughed, and complained of pains on the left side of the chest. Temp., 105.0°. Dullness in left posterior inferior region.

June 6.—Temp., 103.5°. Pulse, 160. Respiration, 60-70. Pulmonary condition: Right posterior vesicular breathing; normal pulmonary sound; at the left posterior, dullness and distinctly bronchial breathing. Treatment: Inf. fol. digit. 0.3 = 180.0. Tablespoonful every three hours.

June 8.—Temp., 103.5°; pulse, 160; respiration, 80 (!). Pulmonary condition: Left posterior, bronchial breathing; left posterior below, lessened breath-sounds and complete dullness: Treatment: Injections of camphor oil; cold packs.

June 9.—Temp., 102.9°; pulse, 160; respiration, 72. During the night the patient was cold and quite blue in the face.

June 10.—Temp., 102.0°. Pulse, 160; respiration, 72-82. Pulmonary condition: Left posterior, absolute dullness, bronchial breathing, above and over the center of the scapula lessened breathing; right posterior normal pulmonary sound, vesicular breathing.

June 11.—Temp., 104.2°; pulse, 170; respiration, 80. Prolonged paroxysms of coughing. Pulmonary condition: Right: posterior-superior region, absolute dullness; posterior inferior region, relative dullness; breathing of the whole right side bronchial; left posterior, somewhat sharpened vesicular breathing; left anterior, at center tympanitic sound.

June 12—Nine A.M., temp. 98.0°; pulse, 160; respiration, 40. Patient was delirious and screamed all night. Pulmonary condition: At right posterior-inferior and at the level of the scapula the pulmonary

sound is clearer, the breathing sharp and vesicular; right superior-posterior still dull and bronchial. At left posterior the same condition as yesterday.

June 14.—Temp., 98.2°; pulse, 126; respiration, 40. Pulmonary condition: Pulmonary resonance, left posterior superior still somewhat dull, everywhere else cleared. Breathing posterior left superior, bronchial, at the level of the scapula vesicular.

June 15.—Temp., 97.5° = 98.5°; pulse, 120; respiration, 38. During the last thirty-six hours still some paroxysms of coughing; the ears began again to discharge. Pulmonary condition: Pulmonary resonance and breathing both normal, except a little dullness and lessened breathing at the right posterior inferior region. Later cured.

III. Lily (nine years old).

May 16.—Otitis media acuta suppurativa bilateralis, without complications. Treatment: Irrigation with solution of boracic acid.

May 17.—Mastoid process painful on both sides.

May 18.—Temp., 99.6°. Mastoid process on both sides painless, normal. Secretion at the right side diminished; membrana tympani red and swollen. Secretion at the left purulent; posterior half of membrana tympani bulged out and red; anterior half covered with pus. Treatment: Irrigation, dry dressing of auditory meatus and insufflation with boracic acid.

May 19.—Temp., 100.0°. Right ear: No secretion. Membrana tympani less red and swollen. Left ear: Secretion moderately purulent. Membrana tympani in the posterior region bulged out and red.

May 20.—Temp., 99.8°. Right ear dry. Left ear: Membrana tympani still somewhat red; secretion slight. The streak-culture made with the pus on Koch blood-serum shows, after forty-eight hours, yellowish, dome-shaped, scattered protuberances of the size of a pin's head and smaller; these consist of cocci, which are arranged singly, in pairs or in short chains, but mostly in groups and are Gram-positive. The secretion of the left ear shows in cover-slip preparations pus corpuscles, cuboid cells, leucocytes, detritus, but no cocci and no bacteria.

May 21.—Temp., 99.2°. Right side no secretion, left the posterior-superior quadrant of the membrana tympani is red, swollen, and bulged out.

May 23.—Right side no secretion, left side but little.

May 25.—Temp., 99.0°. Profuse secretion left side; mastoid process not sensitive; right ear dry.

May 27.—No secretion.

June 12.—Yesterday the patient was seized with considerable pain in the right ear which, on opening the mouth, increased in such a manner that she refused nourishment. The anterior wall of the exterior right auditory meatus is bulging; the posterior half of the membrana tympani is red. Temp., 100.2°. Patient complains of excessive pains in head and neck; vomiting. The membrana tympani is again perforated; there is renewed secretion.

June 14.—Temp., 99.8°. Patient vomits and constantly complains of headache. Right ear: Upper posterior wall of the exterior auditory meatus protrudes; posterior half of the membrana tympani considerably red and bulged out; in the anterior half there is a perforation. Profuse secretion. Enlargement of the perforation by paracentesis.

June 15.—Right ear: Mastoid process painful; profuse secretion. In left ear also profuse secretion. Temp., 9 A.M., 98.8°; 6 P.M., 100.0°.

June 16.—Patient spent a sleepless night; no appetite; tongue coated. Temp., 100.0°. Right ear: Mastoid process very painful on pressure; the covering skin red; excessive purulent secretion. In the depth of the auditory meatus the posterior superior wall is bulging out and red; pus oozing out of the anterior half of the membrana tympani. Left ear: Mastoid process not sensitive; membrana tympani pale; place of perforation in the anterior-superior quadrant, purulent secretion. Operation at the right side by Dr. Coffey. After opening the mastoid process about a teaspoonful of pus oozes out from its posterior-superior regions. While following this direction the dura is laid open, after which some more purulent fluid discharges. Drainage, dressing. The cover-slip preparation made with the pus issuing from this extradural abscess shows numerous pus corpuscles, moderately numerous red blood corpuscles, very numerous diplococci, singly and in groups, extra- and intracellular, apparently in capsules, discolored after Gram's method.

July 8.—Dismissed as cured.

IV. Clara (eleven years old).

May 16.—Otitis media acuta suppurativa bilateralis, without complication. Treatment: Irrigation with solution of boracic acid.

May 17.—Temp., 102.0°. No pains.

May 18.—Temp., 101.2°. Mastoid process at the right side is sensitive on pressure, also the region in front of the ear; depth of the right auditory meatus red and swollen; membrana tympani not visible. Mastoid process at the left side also sensitive on pressure. Perforation in the anterior-inferior quadrant of the membrana tympani; the patient is hard of hearing on both sides. Treatment: Drainage with gauze soaked in Burow's solution. The pus of the ear consists of numerous pus corpuscles, also numerous cuboid cells, moderately numerous leucocytes, excessive bacteria which, however, stain less in the aqueous methylene blue than the diplococci present in the pus. The latter have the shape and size of the gonococci, are individual or in oblong groups of fifteen to twenty, or in chains of three to eight, mostly intracorpuscular, now and then extracorpuscular; all bacteria are discolored after Gram's method.

May 19.—Temp., 100.0°. Right ear: In the depth of the exterior auditory meatus the posterior superior wall is pressed downward; mastoid process sensitive on pressure; secretion slight. Left ear: Membrana tympani red and swollen; in the anterior-inferior quadrant is a small perforation. Mastoid process more sensitive than the right; secretion unchanged.

May 20.—Temp., 100.2°. Mastoid process still painful on both sides. The streak-culture made with the pus on Koch blood-serum after twenty-four hours shows a wide growth, consisting of yellow and white pointed colonies. These consist of cocci which are arranged in groups, here and there in pairs and in short chains, mostly Gram-positive (a few Gram-negative). The cover-slip preparation made with the pus from the left ear shows numerous pus corpuscles, cuboid cells with large round nuclei, moderately numerous leucocytes, and a few red blood corpuscles but no cocci nor bacteria.

May 21.—Temp., 99.5°. Right mastoid process still painful, not the left; secretion at the right, but very little, at the left moderate; membrana tympani still red and swollen on both sides.

May 23.—Temp., 100.8°. Mastoid process at the right very sensitive, at the left only at the point. Secretion from the right ear very fetid, from the left moderate.

May 24.—Temp., 100.4°. Mastoid process at the right painful, not at the left. At the right ear the posterior-superior wall of the exterior auditory meatus in the depth is red and bulged out, the membrana tympani scarcely visible; the left membrana

tympani is still red and swollen; the secretion considerably decreased; the hearing better.

May 25.—The patient cried a great deal in consequence of severe pain in the right ear. Temp., 100.4°. Right ear: Depth of the exterior auditory meatus red and bulging; membrana tympani red and swollen; secretion moderate. Mastoid process very sensitive, the covering skin red and swollen. Left ear: Mastoid process not sensitive; membrana tympani on both sides red and swollen. Hearing improved.

May 26.—Temp., 100.4°; pulse, 140. Sleepless night in consequence of pains; right ear unchanged; left ear unchanged. Operation by Dr. Coffey. The incision behind the right auricle shows no pus; after opening the antrum there discharges about a teaspoonful of thick yellow pus. The cover-slip preparation from this pus shows numerous pus corpuscles, mucus corpuscles, leucocytes, cuboid cells, red blood corpuscles and cocci arranged in clusters of six to twenty, intra-and extracellular, or in pairs, or in short chains. Gram-positive.

June 8.—Discharged as cured.

V. Francis (seven years old).

May 25.—Temp., 99.5°. From left ear profuse secretion. Membrana tympani red and swollen, perforated in the lower half. The pus taken from the ear shows in its cover-slip preparation numerous pus corpuscles, leucocytes, and cuboid cells, as also mucus cells; a moderate quantity of cocci, individual or in chains, pairs, or in groups; intra- as well as extracellular; no other cocci nor bacteria. Gram-positive.

May 24.—Temp., 101.2°. On both sides profuse secretion.

May 25.—Temp., 101.5°. Right ear: Mastoid process red and swollen; sensitive on pressure; membrana tympani red and swollen. Left ear unchanged.

May 26.—Temp., 101.0°. Right ear: Considerable secretion; membrana tympani red. Left ear: Considerable secretion; membrana tympani in the anterior-inferior quadrant perforated. In the right eye conjunctivitis.

June 4.—Left ear still shows moderate secretion, right ear dry; membrana tympani red and swollen only moderately. Later cured.

The bacteriological report on the cultures made with the pus taken from the depth of the exterior auditory meatus as well as the cultures made with the pus gained by the various operations was identical in all cases. Dr. Matson, the bacteriologist of the Oregon State Board of Health, was kind enough to place his report on the cultures sent to him, as well as the cultures themselves at the disposal for examination of Prof. Weichselbaum in Vienna. The report of Prof. Weichselbaum, to whom I here express my most sincere thanks, essentially agrees with Dr. Matson's. It says:

"The culture submitted showed: (1) A luxuriant growth on agar culture media, at incubator as well as room temperature. A few colonies attained a size of several millimeters in diameter and were protuberant, oblong, or round, sharply defined, shining, whitish or yellowish in tint. In general the appearance of the colonies as well as their growth in agar streak and stab culture completely corresponds with that of the staphylococcus pyogenes. (2) In gelatine-stab-cultures, growth along the inoculation stab with slow funnel-shaped liquefaction. (3) In bouillon cultures a diffuse exuberant turbidity. (4) Exuberant growth upon a potato in the form of a shining 'Rasen' with slight yellowish stain. The pigment formation was strong neither on agar culture media nor on potatoes and showed a faint orange tint.

"According to these facts said genus of bacteria which microscopically showed equally Gram-positive cocci, belongs to the species of micrococci and at best corresponds with a staphylococcus pyogenes with faint pigment formation and faint liquefying power for gelatine.

"Of the submitted cover-slips which were stained by Gram's method and with methylene blue, a few did not show any bacteria with certainty, probably because they already appeared considerably faded. In others, as for instance in the preparation from the cases of Francis and Clara, streptococci could be distinctly seen. The cover-slips which came from the culture media (Margaret, Lily, Anna) showed an absolutely similar appearance: Gram-positive cocci of the type of the staphylococcus pyogenes.

"From all these reports it follows that the submitted cultures have nothing to do with the *Micrococcus meningitidis cerebrospinalis* (*Diplococcus intracellularis,* Weichselbaum), and that surely in a few of the examined cases there existed infections with kindreds of the streptococci species. How far the submitted genus may be considered as its cause of the infections cannot be made out from the materials at hand."

The publication of this contribution seemed to me to be advisable for several reasons. It was not remarkable that measles occurred in all the five children of the same family; but it was very remarkable that in all of them there appeared an acute suppurative otitis media and not in such a mild form as was represented by Nadoleczny (*Jahrbuch für Kinderheilkunde,* Band 60). In three of these children the mastoid process, the antrum, and the cranial cavity respectively had to be opened on account of alarming cerebral symptoms which appeared in spite of the previous most painstaking antiphlogistic and antiseptic treatment, poultices, and drainage after careful irrigations of the exterior auditory meatus with warm solution of borax or instillation with peroxide of hydrogen and drying.

The appearance of this purulent inflammation of the middle ear, at the end of the second week of illness, seems to speak very much against the universal view, according to which the measle otitides are caused by the primary exanthem. The fact that in the pus taken from the depth of the exterior auditory meatus as well as in the pus taken under aseptic precautions during the operation from the antrum, mastoid process, and extradural abscesses, was found the same coccus—a staphylococcus—shows the latter to be the cause of the disease. Whether the infection with the staphylococcus was facilitated through lack of the proper care of the mouth or through the sudden emigrating of these children from a place situated at a height of 8,000 feet to one of only 100 feet, I must leave undecided. Whether the left pleuropneumonia and the right pleuropneumonia of the youngest child was caused by the same coccus, I have not been able to ascertain.

A Sphygmoscope for Determining Pulse Pressure.—Pal describes a rather complicated instrument which he has devised for the purpose of rendering it more easy to obtain satisfactory determinations of the systolic and diastolic blood pressure than is possible by any of the sphygmomanometers now in use. The principle consists in having a small column of petroleum dyed red contained in a horizontal capillary tube connected at either end with a system of tubes communicating with the manometer, the armlet, a pressure reservoir, and the pressure bulb. By means of a suitable arrangement of stopcocks it is said to be easy to deduce from the fluctuations of this column of fluid the values of systolic and diastolic pressure.—*Zentralblatt für innere Medizin.*

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A SUBSTITUTE FOR PASTEURIZATION.

THE artificial feeding of infants is still one of the great medical problems of the day, although the efforts of the last decade have contributed largely to its solution. It seems to be quite universally agreed at the present time that pure cow's milk furnishes the only efficient substitute for breast nursing, which must always remain the great desideratum, even though Dame Fashion and our modern mode of life decree otherwise. In view of the adaptability of cow's milk for the purpose indicated, great efforts have been made to secure this article of nourishment in as pure a form as possible, and to preserve it in this condition, particularly as regards its freedom from germs of a deleterious character. These efforts have extended in two directions. At first sterilization by boiling was regarded as a thorough method of obtaining germ-free milk, but although the bacteria were all killed, other changes took place, particularly in the albuminoid constituents, which rendered the milk unfit for food for infants. By pasteurization it was hoped that this would be avoided, until it was shown that certain harmless and necessary organisms were thereby killed, while the more dangerous spore-forming bacteria were not always destroyed, their proliferation being, in fact, occasionally favored.

But the demands of the pediatrists for a germ-free milk continued, and then the effort was directed toward enforcing extreme cleanliness at the dairies, including here the cows, the stables, and the attendants. This marked a great advance, but it has not entirely solved the problem, for although the entrance of germs from without is thus to a great extent prevented, it does not provide against the contamination from the cow's system. The milk of tuberculous cows is known to contain the specific germ, and until the diagnosis is established in any given case much harm may result. This would naturally suggest the employment of chemical agents in the milk, but their use has usually rendered the product unfit for the infant, on account of the taste as well as of other undesirable features. Peroxide of hydrogen has been largely employed for this purpose, and in many respects has been found to be very efficient; but it is necessary to devise some means for getting rid of the disagreeable taste imparted to the milk by this agent after its mission as a germicide has been accomplished. In this connection considerable interest attaches to the work of Much and Romer (*Beiträge zur Klinik der Tuberkulose*, Vol. V, No. 3), which was done at Behring's well-known experimental institute at Marburg. The method which these writers recommend for rendering milk practically germ free is briefly as follows: The milking is done directly into a sterile vessel containing a sufficient amount of hydrogen peroxide so that the proportion will be about 1-1,000, and then this is set aside for from six to eight hours, and finally heated in a water bath up to 52° C. After this has been done a special ferment is added in the proportion of from 0.5 to 1 gram per liter of milk, which entirely destroys the H_2O_2. The ferment in question is prepared from the blood of cattle according to a method devised by Senter, and has been called "hemase." The latter is free from hemoglobin and possesses a powerful catalytic action with an especial affinity for hydrogen peroxide. After two hours of treatment the milk is ready for use, and, if protected from the light, it may be kept for a considerable period. Its taste is claimed not to differ from pure, fresh milk, and it has been found free from germ growth even after twenty-one days.

The procedure referred to evidently exerts a very thorough and complete destructive effect on tubercle bacilli, for milk containing large numbers of these could, after being treated with hydrogen peroxide in the manner stated, be injected with impunity into the peritoneal cavity of guinea pigs. The writers claim that milk thus prepared will meet all the requirements demanded by pediatrists of a pure milk for infant consumption, and they also furnish sufficient data to prove the practicability of the method. Its cost has been calculated to be about one cent per quart, and although there are apparently many favorable and desirable features connected with their proposal it still requires both clinical and commercial tests, and these we look forward to. Methods of preserving milk by chemical means have never found much favor in this country, and the efforts to secure a germ-free milk have been extended rather to sanitary devices and continued cold. It may be impracticable, however, in certain instances to preserve milk by such means, and then the method advocated by the German investigators may be found to be applicable.

FOOD SCANDALS IN GREAT BRITAIN.

THE unanimity with which all the papers of Great Britain condemned the Chicago stockyards and meat-packing methods was remarkable, but, on the whole, not to be wondered at. Nevertheless, it would have been wiser on the part of some journals if they had not seized the occasion to extol the methods of British food manufacturers, and to "thank God that they were not as other men." This effusion of somewhat unctuous rectitude has been shown to be decidedly premature, for the annual report of the Chief Inspector of Factories and Workshops for Great Britain and Ireland has just been made public. That portion of the report which deals with the food factories of the United Kingdom is a very striking pronouncement. The English Government inspectors of those factories in which women are employed are of the female sex, and it is due to them that the true facts regarding the manufacture and handling of food products have been laid bare.

One Government inspector who has visited factories in Ireland, in which jam, confectionery, biscuits, condensed milk, and margarine are made, gives her opinion in an outspoken manner in regard to the lack of cleanliness observed in the majority of food-producing places in Ireland, but goes on to state that "Ireland has no monopoly of dirty factories, and throughout the United Kingdom the occupiers of food-making factories have too low a standard in general." Another inspector gives some revolting details as to the manufacture of sausages. She declares that the work is exceedingly disgusting and offensive to the senses, and states, on good authority, that it frequently disturbs the health of the women engaged in it. The same inspector says that in some of the sausage factories she has detected bad drainage and offensive emanations from the floor, due to the accumulation of offensive and decomposing animal matter, together with an intolerably fetid atmosphere and inadequate ventilation. An inspector of jam factories tells of the "disgusting smell" arising from the water in the tanks wherein jars were being washed for the reception of jam to be sold to the public. Chocolates and candy are "very much handled in the making" amid too generally prevalent dirty conditions. As a rule the workers are unable to keep themselves personally clean, as no arrangements are made for washing. The children and women workers—and this applies especially to Ireland—are seldom provided with overalls, and carry out their tasks in their oldest and dirtiest clothes. The state of the floors in some of the candy factories, according to this inspector, is offensively dirty; indeed, as the result of her Irish experiences, she declares that "the condition of the floors in very many food-making places is most unsatisfactory. In a margarine factory the floor was thickly covered with a black, greasy, sour-smelling mud;" and when the occupier was informed that the floor should be relaid with suitable material, carefully sloped, adequately drained, and means taken to prevent so much grease from falling on to it, he seemed astounded that this should be required, even though cleanliness could not be otherwise obtained.

Perhaps the most astounding feature of the situation is that as the law of the United Kingdom now stands there appear to be no effective legal remedies against such abuses. The Factory Acts do not touch such evils. What is really wanted is better and closer inspection; that is to say, that the number of inspectors be greatly increased, and that the condition of the workers should be bettered in every way; in fact, the whole matter of sweated wages should be attacked. The women employed in the British factories are, at the present time for the most part, so low down in the scale that nothing can be done to assist them.

At a meeting of the British Royal Sanitary Institute, held in Bristol on July 12, a heated discussion took place in regard to public abattoirs. During the debate on the subject a Mr. Bottomley asserted that if the public knew one-quarter of the evils that were perpetrated under the system of private slaughter-houses, the Chicago scare "would not be in it." He said he had known quite recently, in his own country district, a case in which a cow suffering from pulmonary tuberculosis had been slaughtered and eaten.

Enough, however, has been said on the question to show clearly that as regards food factories and slaughter-houses the United Kingdom is by no means without reproach; indeed, the revelations from Chicago will, in the long run, do good to both America and Great Britain. They will have attracted people's attention acutely to the subject, and will have so stirred up public sentiment that the proprietors of food factories will have no choice but to put their houses in order.

SCRAP TOBACCO.

The smoker has ever been a shining mark for the paper bullets of the unco guid, who have not scrupled to make use of all the ammunition they could induce medical science to furnish. For some reason or other the cigarette has had to bear the brunt of the onslaughts, though it has repeatedly been pointed out that when properly used by adults its power for harm must be a negligible quantity. There are possibilities attending the use of tobacco in any form, however, that probably are much more worthy of consideration than the stereotyped arguments of the anti-cigarette leaguers, and these have to do with the treatment to which the tobacco is subjected in the course of manufacture of the product that finally reaches the consumer's hand—and mouth. While the cigar butt fished from the gutter has not in this country become the article of commerce that it is in many European cities, notably Paris, where those who make a specialty of the collection of such relicts form a recognized branch of the guild of rag pickers, no doubt some unsavory enough components enter into the composition of the cheaper varieties of the tobacconists' commodities. But equally disgusting possibilities are not absent in the manufacture of wares of a much higher grade, and these both can and should be eliminated.

The fact that cigarmakers as a class are particularly prone to tuberculosis is well known; and also that in rolling the tips of cigars many workers are accustomed to moisten the end with saliva; but there is still another source of contamination that is not so widely recognized. Scrap tobacco is the trade name for the cuttings and fragments of tobacco leaves discarded by the cigarmaker and usually falling from the work table to the floor. This is a recognized by-product which is widely used and finds a ready market, but while lying about the workman's feet it is subjected to many vicissitudes, and is sure to become sullied with filth, if not contaminated with actual disease germs. Attention is directed to this source of danger to the public health by D. D. Stevens, who in a recent number of the *Medico-Legal Journal* describes a tour of inspection he made through a very large number of cigar factories. In one Southern State and adjacent islands he estimated that nearly 50 per cent. of the cigarmakers were tuberculous or syphilitic, and while in the North the workers as a class are less diseased their habits are no more cleanly than are those of the workmen in the South and in Cuba. The northern cigarmakers are mostly recruited from the ranks of the poorer class of immigrants, and consist largely of Poles, Russians, Italians, and Scandinavians. These people are very uncleanly in their per-

sonal habits and no attempt is made to prevent the material they work with from suffering in consequence. In one Harlem shop Dr. Stevens says he saw a cigarmaker at work who was suffering from advanced pulmonary tuberculosis, and who was constantly expectorating on the floor among the fragments of tobacco.

While no doubt in many of the factories the conditions of cleanliness and health of the employees are all that could be desired, it is certain that there is an urgent need for reform in this field. A majority of the male population are tobacco users, and should be safeguarded not only by regulations forbidding the sale of scrap tobacco under the present conditions, but also providing for the supervision of the health of the tobacco workers and controlling the sanitation of the workrooms. In the eye of the law the tobacco user should be regarded as deserving of as much protection as the consumer of food stuffs; and since it is certain that vast quantities of tobacco will always be consumed, it is the part of the authorities to see to it that whatever detriment to health attends its use is not added to by improper conditions of manufacture.

Senseless Cowardice.

A poor Syrian leper is living alone in a tent or hut somewhere in the wilds of West Virginia, driven there, so the newspapers report, we wish we could believe incorrectly, by the health officers of various communities in that and neighboring States. He was on his way to his far eastern home, where he hoped to end his days with his own people, but was discovered in a Maryland town, imprisoned for a time in a freight car, shipped east, then west, and finally dropped by the railway officials in a desolate region in West Virginia. There he now is, abandoned by his fellow men, and crying for some one to shoot him and end his misery. And this has happened in the year of our Lord 1906, in a Christian and civilized country. One can understand the fear of leprosy felt by the laity, who know nothing of the disease but the loathsomeness of its advanced stages and have exaggerated notions of its contagiousness, but it is inconceivable that the presence of a leper should throw educated medical men and health officers into such a panic of apprehension that they inhumanly cast him out from the community to perish in the forest. It was their duty to protect the unfortunate man and to quiet the unreasoning fears of the public, for they should know that the contagiousness of leprosy under ordinary conditions is slight. Yet the poor sufferer, a human being, has been treated by his fellows worse than a mangy dog. Surely it would be possible to have the man conveyed in a decent way to some place where lepers are segregated, there to live in comfort, provided with food and shelter. To toss him about from one place to another and finally to cast him out into the wilds is cruel and cowardly. Better almost would it be to heed the wretch's prayer and end his misery with a bullet.

The Diagnosis of Malignant Esophageal Stricture.

The recognition of esophageal stricture has been greatly simplified by the use of bougies particularly adapted for this purpose. This method, however, fails to afford any definite information as to the precise nature of the lesion, whether the constriction is due to spasm, to a diverticulum, to a cicatrix, or to a neoplasm. Spasmodic stricture is of course transitory, a diverticulum of the esophagus may usually be recognized in a fluoroscopic examination after the administration of bismuth subnitrate, but the differentiation between simple cicatricial stricture and that due to carcinoma is somewhat more difficult. In an endeavor to solve the latter problem, Marcou proposes a method which he has used successfully in several cases (*Archives générales de Médecine*, 1906, No. 15). An olivary bougie is passed into the esophagus and forced through the stricture, if this is possible, or otherwise merely pressed against it, and then rapidly withdrawn. The character of the deposit on the end of the instrument is then noted and examined. In one of his cases in which there was an indefinite dysphagia, the tip of the sound was bloody and presented a very foul odor. The deposit was stained with Loeffler's methylen blue solution and showed under the microscope, in addition to pus cells, numerous thick spirilla, while cocci and epithelial cells were present in only a limited degree. From the fact that such spirilla are commonly present in sloughing and especially in carcinomatous ulcerative processes, a diagnosis of malignant stricture was made and this was later confirmed. In another case a similar result was obtained and it would seem that in other doubtful cases the method could be employed with advantage to clear up the diagnosis.

News of the Week.

Failure of the Trypsin Treatment of Cancer.—A special despatch to *The New York Times* states that an inquiry made regarding the use of trypsin as a cure for cancer in the London hospitals has elicited unfavorable reports. The London Cancer Hospital has discontinued the use of the remedy, the surgeons having failed to obtain any beneficial results from it. In some hospitals the experiments are still proceeding, but apparently without expectation that they will result otherwise than have the tests at the Cancer Hospital.

A Tuberculosis Clinic has been opened at the Medical Department of the University of Southern California, Los Angeles, under the management of Dr. F. M. Pottenger. Its object is not only to treat free of charge the worthy poor, but more especially to teach methods of protection. Every case of tuberculosis reported will be investigated and the sufferer will be isolated or instructed in the duty of protecting others. Dr. Pottenger will be assisted by Drs. W. Jarvis Barlow, George H. Kress, and others, and the clinic will receive the support of the Antituberculosis League of Southern California.

The Study of Medicine in France.—According to statistics published in a recent number of *La Semaine Médicale*, the number of medical students in France is diminishing with considerable rapidity. The year 1906 shows a decrease of 1,044 over the year 1895, not counting foreign students, whose numbers had diminished 46.8 per cent.; that is, from 1,137 in 1895 to 604 in 1906. The falling off in foreign students is ascribed to the increasing strictness of the regulations for admission to the French schools, and the smaller number of native-born students is thought to be due in part to the same social conditions which have rendered the study of medicine less popular in Germany also, and in part to changes in the entrance examinations, military service, etc.

Care of the Insane in Illinois.—The Trustees of the Illinois Hospital for the Insane and the members of the State Board of Charities recently held a joint meeting, at which it was decided to begin at once improvements in the system of nursing and attention to patients with night supervision and medical attendance. The establishment of a modern pathological laboratory and the selection of a pathologist who will act also as instructor to the medical staff in special methods of examining cases and record keeping are planned. A training school for nurses is to be opened in September, with a three-year course.

Perils of Confectionery. — The *Lancet,* which is very fond of raking up all sorts of dangers to health in the affairs of every-day life, has recently pointed out the perils that lurk in the elaborate traceries of icing that adorn frosted bridal cakes, etc. This ornamentation is effected, we are told, by the "disgusting and filthy practice" of blowing the icing onto the cake through a tube applied to the lips of the pastry cook, and an instance is cited in which it was shown that a cook performing this function was the victim of specific disease of the mouth and throat.

Opposition to the Lourdes Pilgrimage.—The physicians and hygienists of France have been protesting strongly against the annual pilgrimage to Lourdes which takes place in August. The objectors state that the pilgrimage is not only a bad thing for the pilgrims themselves, but is also dangerous to the public health. Among the chief objects of denunciation is the piscina, in which sufferers are bathed. It is stated that the water, which is supposed to have healing efficacy, is not changed throughout the pilgrimage and is absolutely filthy. This, however, is denied by the clergy, who assert that the piscina is supplied by running water from the spring. Furthermore, it is objected, the trains conveying crowds of diseased persons, on which the most elementary rules of hygiene are violated, constitute a perpetual danger to the pilgrims, subsequent travelers, and the residents of the districts through which they pass. This is, of course, a matter within the control of the railway officials, who could insure the sanitation of the trains if they would.

Indiana Admonition Against Kissing. — The Indiana State Board of Health has decided to incorporate in its hygienic cautions to school children the recommendation neither to kiss nor to be kissed on the mouth.

Suit Against a Chiropodist. — The suit prosecuted by the County Medical Society against the negro proprietor of a so-called school of chiropody and dermatology was tried last week and resulted in the discharge of the defendant. He was arrested last May, charged with illegally issuing diplomas for his school, and the registered complainant was a man who had purchased one of these diplomas for $75. The court decided that there was no evidence that the certificate was fraudulent or unlawfully issued and that the school was organized under the laws of this State and was therefore not illegal. The alleged diploma conferred neither degree nor license, but was a certificate showing that the holder had completed the school's course of study in "theoretical and practical chiropody."

Yellow Fever in Mexico.—The dispatches from Mexico report the occurrence of twelve new cases of yellow fever, with seven deaths at Moyda and one new case and one death at Vera Cruz.

Accidental Deaths in Chicago.—Three hundred and thirty-six deaths were investigated in Chicago during July by the coroner, and of these more than 150 were due to violence; street car and railroad accidents led with 40 fatalities, followed by suicide with 33. During the month 24 individuals were drowned and but one death was charged to an automobile accident; 14 homicides were reported, and 11 deaths were due to the Fourth of July injuries.

A Peculiar Accident.—A physician residing in southern California is reported to have fallen out of bed, breaking one rib, dislocating another, and bending a third, without waking from sleep. He did not live in the earthquake belt, but probably dreamed that he did.

Pure Food Law Conference.—The pure food Board, which is made up of Dr. Harvey M. Wiley, chief of the Bureau of Chemistry of the Department of Agriculture; S. N. D. North, director of the Census Bureau, representing the Department of Commerce and Labor, and James L. Gerry, chief of the customs division of the Treasury Department, and which is formulating regulations for the enforcement of the pure food law recently enacted by Congress, has decided to grant public hearings to the food manufacturers who want to present their views as to the necessary regulations. These hearings will be held at the Department of Agriculture from September 17 to September 28, at which the manufacturers will be invited to express their views on the subject of the proper regulations.

The Canteen in Soldiers' Homes.—Commander-in-Chief Tanner of the Grand Army of the Republic has recently expressed the opinion that the passage by Congress of an act abolishing canteens from national soldiers' homes after next March was "unwise and a blow at real temperance, besides a restriction of the personal liberties of veterans of the Civil War that ought to be resented." A number of prominent officials of the organization have written General Tanner of their intention to bring the matter before the national encampment, which meets in Minneapolis.

Inspector of Nurse Training Schools.—The State Civil Service Commission will receive applications until September 4, 1906, for the position of Woman Inspector of Nurse Training Schools in the State Department of Education. The salary is from $1,800 to $2,100. Candidates must be citizens of the United States, legal residents of New York State, registered nurses and graduates of a registered nurse training school with at least five years' experience since graduation in supervision, administration or instruction in a nurse training school. Application forms and particulars of the competition may be obtained by addressing the commission at Albany.

Tri-State Medical Association.—The Tri-State Medical Association of Indiana, Michigan, and Ohio, at its annual meeting held at Put-in-Bay on August 1, elected the following officers: *President,* Dr. Charles D. Aaron of Detroit; *Vice-President,* Dr. F. T. Wood of Argola, Ind.; *Secretary,* Dr. W F. Schumaker of Butler, Ind.; *Treasurer,* Dr. J. A. Waltz of Montpelier, Ohio.

Southern Minnesota Medical Association. — This association held its annual meeting at Winona, Minn., on August 3, and elected the following officers for the ensuing year: *President,* Dr. H. L. Baker, Kasson; *First Vice-President.* Dr. G. J.

Tweedy, Winona; *Second Vice-President*, Dr. M. J. Hart, Leroy; *Secretary and Treasurer*, Dr. W. T. Adams, Elgin.

Medical Society of the Missouri Valley.—The nineteenth annual meeting of this society will be held at Council Bluffs, under the presidency of Dr. John E. Summers of Omaha, on September 6 and 7. Sessions will be held in the banquet hall of the Grand Hotel, and an excursion to Lake Manawa will be the social event of the first evening. The secretary of the society is Dr. Charles Wood Fassett of St. Joseph, Mo.

An International Congress of Life Insurance Examiners is to be held in Berlin, September 11 to 15, under the direction of Professor Kraus and Drs. Florschütz and Unverricht. The topics for special discussion will be pulmonary tuberculosis, syphilis, and obesity. The general secretary is Dr. Manes, Spichernstrasse No. 22, Berlin.

Obituary Notes.—Dr. W. J. Class of Chicago died at Benton Harbor, Mich., on August 10. Dr. Class was a member of the Chicago Board of Health and had done much work in connection with the recent epidemics of cerebrospinal meningitis and on the etiology of scarlet fever.

Dr. James Weir of Owensborough, Ky., died on August 8 at Virginia Beach, at the age of fifty years. Dr. Weir was graduated from the University of Louisville in 1878 and was the author of several medical and philosophical works.

Dr. Henry Rauch of Herod, Va., died on August 4, after an illness of several months. He formerly practised in Edgefield county, South Carolina.

Dr. Thomas D. Wooten of Austin, Tex., died at Eureka Springs, Ark., on August 1, at the age of seventy-seven years. Dr. Wooten was born in Barren county, Ky., and was graduated from the medical department of the University of Louisville in 1853. After practising in Tompkinsville and Springfield, Mo., he was in 1861 commissioned as surgeon of the Second Regiment, Seventh Division of the Missouri State troops, rapidly rising to the medical directorship of the Western Army Corps. In 1865 he settled in Lamar county, Tex., and removed to Austin in 1876. At one time he was president of the State Board of Regents, and had occupied many official positions. He is survived by his sons, Dr. Joe Wooten and Dr. Goodal Wooten.

Dr. S. A. Wilson of Battle Hill, Ga., died on August 5, after a three weeks' illness from pneumonia. He had practised medicine in Battle Hill for thirty-eight years.

Dr. George W. Mathews of Worcester, Mass., died on August 5, at the age of thirty-two years. He was graduated from the Medical Department of the University of Pennsylvania in 1895, and for three years practised in a suburb of Philadelphia. In 1898 he went to the Philippines as contract surgeon and soon after the organization of the Thirty-sixth Regiment volunteers he was commissioned captain and made assistant surgeon of the regiment. While serving in this capacity he was awarded a medal of honor for bravery by Congress for his gallantry in protecting the wounded under his care from an ambush. In 1901 Dr. Mathews was commissioned a first lieutenant in the regular army as an assistant surgeon and was assigned to duty in Fort Warren in Boston Harbor. Dr. Mathews' death was due to amebic dysentery contracted in the Philippines.

Dr. James B. McCaw died August 14, at Richmond, Va. He was eighty-four years old. Dr. McCaw was a surgeon in the Confederate Army and during the Civil War had charge of Chimborazo Hospital, in Richmond, where 76,000 Confederate soldiers were treated.

Correspondence.

OUR LONDON LETTER

(From Our Special Correspondent.)

CANCER RESEARCH—CONTRACTED PELVIS—ADENOMA OF THE LABIUM—IRREGULAR PUERPERAL SEPSIS—THE TIME-BILL OF BEER—PHARMACEUTICAL CONFERENCE—CHEAP BEDDING.

London, July 27, 1906.

The annual meeting of the Imperial Cancer Research Fund was held on Wednesday. The report of the superintendent (Dr. Ernest Bashford) stated that the results of the first three years' investigations as to the spontaneous development of cancer in human beings have led to an alteration in the details of the work. In animals statistical study has been combined with experiment, and the attempt has met with some success. The facilities of the fund for ascertaining the occurrence of cancer in native races and within different geographical areas are unique. The data accumulated strengthen the belief that the two main types (carcinoma and sarcoma) increase in frequency with age. As to hereditary susceptibility, after repeated failures for three years, offspring has at last been obtained from mice suffering with cancer. An isolated case occurred in a mouse whose grandmother had it in the same way at the same site. It took four years and the examination of 100,000 mice to discover the occurrence of twenty-eight cases of spontaneous carcinoma of the mamma. The results of inoculations with eighteen of these tumors show that the frequency with which cancer can be inoculated is incomparably greater. As to rate of growth, 25,000 inoculations show fluctuations. When a growth was obtained, it often ceased and the tumor was absorbed; when growth continued, the evidence went to show that it was due to a revival of the proliferative powers in the cancer cells. Such alternations of amelioration and exacerbation seen also in human cancer suggest that they are essential features of cancerous proliferation occurring spontaneously, not the consequences of extraneous conditions.

Attempts to modify well established cancer gave little encouragement, though it had appeared possible to make mice very unsuitable for inoculation, but the report says nothing but harm can come from ignoring the fact that experiments do not enable them to arrest or retard the development, still less to cure the spontaneous developed disease. But the results compare favorably with the complete failure of all reputed empirical remedies forwarded to the laboratory to be tested. Four years' work has enabled the features of spontaneous cancer in mice to be reproduced and healthy mice to be protected from the consequences of inoculation with experimental cancer. "This having been achieved," the report adds, "it is not too much to hope that the further development of the experimental study of cancer will ultimately yield results having a direct bearing on the nature and treatment of the disease."

Sir William Church, who moved the adoption of the report, spoke hopefully of the future. Lord Strathcona, who presided, said they wanted £4,000 a year and for such an object it should be forthcoming. The King and the Prince of Wales, he said, were deeply interested in the work.

Dr. Nepean Longridge has communicated to the Obstetrical Society an account of sixty-four cases of contracted pelvis admitted during 1905 to Queen Charlotte's Hospital, where the system of admission, he said, made it possible to recognize and if necessary treat these cases early. The results were satisfactory, no death and no complication among the mothers; eight infants died, three of which had some abornmality incompatible with life. In fourteen cases labor was spontaneous and unaided, the most remarkable being a primipara who gave birth to a child weighing 5 pounds 12 3-4 ounces, through a true conjugate of 2 7-8 inches, in ten hours. The treatment of these cases was said to be narrowing down to a choice between induction of premature labor and cesarean section. Queen Charlotte's Hospital experience seemed to show that the former was satisfactory with a conjugate of 3 1-2 inches and over. The latter was the better procedure with a conjugate of about three inches or less.

Dr. Williamson showed a specimen of adenoma of the labium diagnosed as epithelioma and removed by Dr. Champreys in 1903, no recurrence having taken place. He suggested these growths arose in connection with sweat glands. Dr. H. Spencer doubted this, also their rarity. He

had met with two cases, and the tubules had a distinct arrangement which was inconsistent with the suggested explanation. The curator of the museum at University College regarded them as arising in sebaceous glands. Dr. Williamson replied that Dr. Spencer's cases were no doubt sebaceous adenomata and belonged to a different class to the specimen he exhibited.

The Edinburgh and Glasgow Obstetrical Societies held a joint meeting, followed by a dinner, on the 11th inst. A discussion on irregular manifestations of puerperal sepsis was opened by Professor Stephenson of Aberdeen, who said a knowledge of the site and character of the local lesion was of more diagnostic value than information about the organism. The graver forms of septicemia were not those discussed, but the milder, shorter, and rarely fatal deviations from the normal. The temperature of itself, he said, was not important, but the ratio between it and the pulse was. Intermittent temperature, though it rose to a great height, was of less importance than a slight but persistent rise. Prof. Murdock Cameron of Glasgow said the worst type was that in which nothing definite could be detected in the pelvis, but the patient took on an earthy color and had nausea and diarrhea. Such a case often proved fatal in the second week.

Dr. Barbour described two cases in which a puerperal rash developed, and suggested as an explanation the absorption of a toxin produced during the muscular activity of the uterus.

Dr. Easterbrook referred to puerperal insanity, which he divided into two classes. In one it appeared in the first week with high temperature and pulse, and other indications of sepsis. In the other it came on later and the temperature was subnormal. Such a case might be due to exhaustion of an unstable nervous system.

Dr. Kerr said rashes might be caused by enemata stirring up fecal matter, and further removal of mucus from the bowel might aid absorption.

Prof. Dickinson of New York described the case of a patient who had three severe hemorrhages—the first ten days after labor, the second ten days later, the third during the fourth week. The uterus was removed by vaginal route and a small septic focus found in the wall, which had opened a large vessel.

Dr. Oliphant mentioned a case in which he obtained a culture of the pneumococcus from the interior of the uterus. The temperature had gone up to 105° a few days after delivery.

Prof. Jardine had found sudden involution of the uterus tended to produce a high temperature.

The *Times* has followed its great puff of a "drink cure" by another of the same kind on Allsopp's beer! This last opens with an article by the *Times'* (advertising) staff on the food value of malt liquors, suggesting that the "health and vigor of the race are proof that these liquors are both wholesome and nutritious." It goes on to describe lager beer as a food, wholesome, mildly stimulant, "free from the objections to temperance drinks," as containing only 3 or 4 per cent. of alcohol, so that "only fanatics can criticise it on this ground." This audacious staff of the *Times* declares "there is the highest scientific and medical authority for asserting that a small amount of alcohol is a useful food." The next is called a "scientific appreciation" of the nutritive qualities of beer, and consists of just such a hash as an advertising staff might be expected to cook. This is followed by the "History of the House of Allsopp." But though the house has considerately sent me a reprint of the *Times* articles, I fail to find any reference to its financial position or the sorrows of the shareholders.

Of course the example of the *Times* was bound to encourage other papers in the down-grade. Already the *Standard* has followed with a leader-looking article headed "Startling Advance in the Cure of Disease—Medical Enthusiasm." The startling advance is rather in the degradation of the newspapers, and the enthusiasm perhaps in the proprietors at the influx of profit.

The Pharmaceutical Conference met at Birmingham on Tuesday and continues its deliberations until this evening. It was officially welcomed by the Lord Mayor, and on behalf of the medical profession by Sir James Sawyer, who spoke of the diagnosis of disease having been wellnigh perfected, but treatment was lagging behind, as to which the aid of pharmacy could not be dispensed with. The president was Mr. W. A. H. Naylor, and in his address he touched on the possibility of a faculty of pharmacy being established in the Birmingham University. He showed the relation of the newer chemistry and physiology to pharmacy, and indicated the directions in which research by scientific pharmacists is further required. He declared that the rubric of the conference, to which every member tacitly subscribes, is to maintain uncompromisingly the principle of purity in all medicaments, and held that many engaged in their craft devote their little leisure to the prosecution of pharmaceutical research.

The latest sanitary scare is the danger of cheap bedding, on which Dr. Taylor, public analyst to the Borough of Hackney, has reported to the Health Committee. He says that flock is made from old rags, too old and too filthy to be made into shoddy clothing. The process in a flock factory is devoid of any precautions. Old rags, largely made of old clothing in a filthy condition, smelling horribly, were received in bundles and without any preliminary treatment went into the machine, which tore them to pieces, rejecting buttons or metallic substances; then straight to a revolving "devil," whose long teeth further broke up the substance and by an air current exhausted through a flue into a settling chamber the dust. The friction caused heat enough to dry the flock, which left the machine free from odor. The flock examined, Dr. Taylor reports, yielded more bacteria than sewage from Crowness, and justified fear of spread of disease. It is certainly a repulsive story and supports the idea of some that clean straw is better bedding than many a flock mattress.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

THE TREATMENT OF MENINGITIS—CONGENITAL DEXTROCARDIA—TUBERCULOSIS OF THE URETER—ALCOHOLIC CIRRHOSIS IN A CHILD—UNUSUAL POWERS OF MUSCULAR CONTROL—BALANTIDIUM COLITIS.

VIENNA, July 10, 1906.

A NEW method of treatment for epidemic cerebrospinal menigitis is being tried in Escherich's clinic with apparently very promising results. The therapeutic agent is prepared from bacterial cultures, and even in extreme dilutions it appears to be very effective against the meningococcus without possessing any undesirable properties. Escherich's assistant, Jehle, has gone to Silesia in order to test the new remedy, which is administered by subcutaneous injection, on a large number of patients.

Hochsinger has reported a case of congenital dextrocardia and cyanosis occurring in a child of six months. The child was a blue baby, and even when at rest the cyanosis of the lips, the tip of the nose, the toes and fingers was conspicuous. If the child became excited and cried out or wept the entire surface acquired a deep bluish hue, the condition being the typical morbus cæruleus. The pulse rate was 150 to 160 and the blood pressure 90 to 100; examination of the heart showed that this organ was completely transposed to the right half of the thorax. When at rest auscultation revealed pure sounds with accentuation of the diastolic valvular closure, but during excitement a systolic murmur was heard which was louder at the apex than at the base. The probability is that there was a defect of the septum. The radiograph was very interesting and revealed a semicircular shadow above the heart which probably represented a dilated pulmonary artery.

Zuckerkandl has operated on three cases of renal tuberculosis in which the kidney and ureter were both removed. In renal tuberculosis involvement of the ureter is almost always present and may even be more advanced than the lesion of the kidney. Tuberculous ureteritis is characterized by a dense thickening of the ureter which may attain the size of the finger, pain along the course of the ureter, and sometimes ureteral colic due to the narrowing of the lumen. The thickened ureter is sometimes palpable through the rectum or vagina and often also through the abdominal wall. The involvement of the ureter and kidney is frequently indicated by a unilateral cystitis encircling the opening of the diseased ureter. Zuckerkandl in these cases removes the ureter to the base of the bladder and carries a drain from this point to the lower angle of the incision, which extends from the costal border to the symphysis. A second tube is used to drain the renal pedicle. The abdominal wall is sutured in layers. By using this technique Zuckerkandl has always succeeded in obtaining primary union.

A case of alcoholic cirrhosis in a boy of six years was observed by Neurath. The patient suffered from extreme dyspnea, the abdomen was enormously enlarged and protuberant, there was great edema of the abdominal wall, the lower extremities and the scrotum, the abdominal veins were dilated, and there was a great deal of free fluid in the abdominal cavity. The liver appeared greatly enlarged, particularly the right lobe, the lower border of which could be felt half way between the umbilicus and the ensiform. The spleen was enlarged and hard, the heart was normal, and the rather scanty urine contained no albumin. It was learned that during the past four years the parents had given the child from a half to two liters daily of cider, and on examination it was found that this contained 3.93 per cent. by volume of alcohol. So far diaphoretics and diuretics, as well as stopping the alcohol, have not brought about

any improvement in the patient's condition and Talma's operation has been suggested.

A man has recently been exhibiting himself in the various clinics who possesses unusual powers of muscular control. He is now thirty years old and at the age of sixteen years he had typhoid fever, after which he suffered severely from constipation. In order to secure a movement he was obliged to exert his abdominal muscles to an extreme degree and in this way he gradually got to the point of being able to bring separate portions of these into action so that wave-like contractions would appear. Two years ago this ability was noticed by a physician, who pointed out its interesting nature to him, and since then the patient has acquired a number of new tricks of this sort, for in wandering from clinic to clinic in Germany and Austria he has everywhere been encouraged by the physicians who have seen him to learn to control new muscles. He is able to innervate the external oblique muscle as a whole or only in part and he can also invoke contractions of the separate portions of the rectus between the tendinous inscriptions. Another interesting and astonishing feat is his ability to force the small intestine up into the thorax, and he is also able to dislocate the apex beat to the left side beyond the mammary line and to the right as far as the sternum. These movements are produced by unilateral contractures of the abdominal muscles. He is able to produce unilateral contractions of the platysma and he can raise and lower the larynx by moving the hyoid bone up and down. An entirely different sort of control is manifested in his faculty of producing voluntary contraction or dilatation of the pupils on either side. The dilated pupil reacts to light as well as on accommodation. The man states that when he is learning a new innervation he can practice this only a few moments daily, as fatigue sets in rapidly. His feats are interesting, from both the physiological and neuropathological standpoints, as they throw an interesting light on hysterical contractures and paralyses. His control of the movements of the pupil shows that these also possess a cortical center and that the hysterical pupillary palsies have a physiological basis.

A case of balantidium colitis has been studied in Neusser's clinic. The patient was a woman of thirty-six years, who went to the hospital on account of severe diarrhea. On examination she was found to exhibit characteristic symptoms of tabes, and an enormous number of the *Balantidium coli* was found in the very numerous fluid stools. This organism has heretofore been discovered in the stools in ninety cases of enteritis. The parasite is a harmless inhabitant of the intestine of the pig which probably is to be regarded as its host. It is, therefore, interesting to note that the patient stated that her diarrhea began shortly after the ingestion of some spoiled ham, in which possibly the cystic form of the parasite might have been contained. The course of the disease is usually fatal and so far it has been observed mainly in the northern countries of Europe, such as Sweden, Finland, and Russia, though cases have also been reported from Germany, Italy, America, Asia, and Africa. This case is the first observed in Austria.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

THE CAMPAIGN AGAINST TUBERCULOSIS IN DENMARK—HEALTH LAWS—MODE OF ACTION OF THE FINSEN LIGHT—AMERICAN VISITORS TO DANISH HOSPITALS.

COPENHAGEN, July 9, 1906.

THE Danish National Association for Combating Tuberculosis has just issued the report of its work during the last year. It is very interesting to notice what an association like this one, entirely private in its character, has been able to accomplish during the few years of its existence. It was started five years ago by a comparatively little circle of prominent men in different walks of life, among them, of course, many medical men. It carries out its work chiefly by means of voluntary contributions from its members, now numbering 28,000; during the last year it collected a sum of more than $40,000. At the time of the formation of the association Denmark had only one sanatorium for pulmonary tuberculosis; this establishment had been built and financed chiefly by the Danish medical profession. The association then took up the task of providing sanatoria for the poorer classes of the population, with the result that it has built up to the present three sanatoria, with a total of 250 beds, while one more is actually under construction and the building of two more is planned. As stated these sanatoria are meant for the poorer classes; the patient pays only 20 cents a day, the rest of the expenses, caused by his treatment in the sanatorium, being defrayed by the state and the association. In order to show how thoroughly the importance of combating the tuberculosis is realized by our population I may mention that our farmers have already built one large sanatorium for the treatment of their fellow-farmers and their families, and that the erection of one more is resolved upon. When I add that the municipality of Copenhagen has a tuberculosis sanatorium of its own of 145 beds, a tuberculosis hospital of 300 beds, besides wards receiving cases of pulmonary phthisis in others of its hospitals, it will be seen that we are doing our best to combat the great white plague.

This is also made evident by an examination of the legal measures against tuberculosis, adopted within the last year or two. One law contains the regulation that a very considerable subvention shall be paid by the State to such sanatoria, tuberculosis hospitals, etc., as admit patients of the poorer classes for a fixed low maximum payment; to those sanatoria in which the daily payment is only 80 cents, the law authorizes the Government to pay three-fourths of the amount, so that only 20 cents a day need be paid by the patient himself. Another law provides that persons in public service suffering from tuberculosis of an infective character and continually coming in close contact with the population (as, for example, school teachers), be at once pensioned, the pension being fixed at two-thirds of the patient's regular wages. Of course we have also a whole series of regulations for the notification of cases and deaths, free disinfection, and so forth. But the supervision of the persons affected with tuberculous diseases cannot compare with the admirable work done by the Department of Health of the city of New York as described in a recent number of the MEDICAL RECORD.

The school vacation has now begun, and at the same time another and, as I believe, very effective move has been made in our struggle with tuberculosis. As in other countries, public charity has provided vacation homes, open-air campments, etc., for the poor school children. But as a rule, I think, these very meritorious institutions suffer under certain shortcomings, in as far as they cannot become a home to their little protégés in the full meaning of the word, because of the great number they have got to harbor. Therefore I should not have touched upon this subject if a happy solution of a very important question had not been found here, viz., how to procure an outing for the poor school children of great cities. For years a very great number of the farmers of the whole country have spontaneously offered to take free of cost into their families children from the public schools of the metropolis, each farmer taking one or two children. The number of pale, weak children that enjoy in this way a vacation of four to six weeks amounts to about 20,000. The more businesslike part of the transaction, the filing of applications, etc., is carried out gratuitously by the teachers in the schools. The State gives free tickets on railways and steamboats to the place of destination. But the farmers get no other remuneration but the gratitude of their little guests and the joy of witnessing the great improvement in the looks of the children after their sojourn in the country has come to an end.

In order to prevent this letter from treating only topics of medicosociological interest, I shall briefly mention a recently published investigation of more than usual interest. Dr. Hans Jansen of the Finsen Light Institute of Copenhagen has inquired into the manner of action of the Finsen light treatment. Finsen himself has expressed as his opinion that in order to be therapeutically active the light ought to be able to kill the microbes, to provoke inflammation, and to penetrate as far as possible into the tissues. In other words, he ascribed a great part of the efficacy of the treatment to the bactericidal powers of the light used. Now Jansen's researches, partly in confirmation of the results of other modern investigators, tend to show that the Finsen treatment has no appreciable action except on the uppermost layers of the skin, as it loses its activity 0.5 or at all events 1 mm. below the surface. The alterations of the tissues of the treated region consist in a destruction of the cellular elements, especially also of those of the blood vessels, while the connective tissue is but little or not at all affected. This is the reason why as a rule no microscopic necrosis is observed and why the affected tissues heal up so beautifully. In the tissue under treatment may further be observed dilatation and thrombosis of the vessels, accompanied by serous exudation and diapedesis. One of the most interesting statements is that the tuberculosis bacilli are killed only in the uppermost 0.2 mm. of the influenced tissue, the rest of them being thrown off, together with the necrotic tissue in which they are situated. In other words, the treatment can only be said to derive its efficacy to a very little degree from the bactericidal powers of the light. It is, therefore, probable that the very scarcity of the bacilli in lupus vulgaris contributes considerably toward the good results of the treatment in this disease. Of the different rays contained in the light only the ultraviolet ones are

active. The visible chemical rays, the blue-violet ones, have scarcely any, the red, yellow, and green ones no importance whatever, for the usual Finsen treatment.

During the summer months our hospitals have the pleasure of seeing as guests quite a number of American doctors. They never take leave of us without expressing their regret that they did not know before of the excellent opportunity for studying to be found here. And, to be sure, in no other place are they more welcome or will they meet with more kindness at the hands of their colleagues than here.

HYDROCHLORIC ACID IN CHOLERA.

To the Editor of the Medical Record:

Sir:—Having noticed in a recent issue of the Medical Record Dr. Heiser's letter concerning the failure of quinine in cholera, and knowing that so far other methods of treatment do not yield any better results, I am prompted to suggest the trial of a treatment which seems to me to be very rational.

I have shown in previous articles detailing the results of my researches on the bacteria of the stomach (Medical Record, November 19, 1904; *American Medicine*, February 24, 1906) that in cases of normal gastric juice and in hyperchlorhydria, after a light meal as well as when fasting, there are, as a rule, only three varieties of microorganisms to be met with in the stomach, viz., yeast, a small bacillus which I have named *B. chlorhydrici*, and sarcinæ, usually of the lutea type. By keeping such gastric juice for weeks in a nonsterilized test-tube, stoppered with a nonsterilized plug of cotton, no other microbes appear. Normal gastric juice, then, as well as that of hyperchlorhydria, is germicidal to almost all bacteria. Even the colon bacillus, which is not so much affected by acids as are the cholera and the typhoid bacilli, cannot thrive in such juice. In hypochlorhydria, however, any microbe may be found. Now, we can assume from the above with reasonable certainty that when the cholera bacillus is swallowed by one whose gastric juice contains 2 per 1,000 of hydrochloric acid, it will be destroyed in a few minutes. But if one suffers from chronic hypochlorhydria or from acute gastritis anacida, or when the stomach is so overloaded that the gastric juice is too dilute and weak, he can easily become a victim of cholera or typhoid fever.

I would therefore suggest the following treatment in cholera: Wash out the stomach well, through the stomach tube, with warm water, previously boiled, containing 2 per 1,000 of hydrochloric acid, and at the end of the lavage introduce into the stomach, through the tube, from 300 to 500 c.c. of the same solution, and leave it there. A soft rubber tube can be introduced with safety, provided the operator has experience. Repeat the above treatment every four hours. The intestines should also be well irrigated, but with a weaker solution (1 per 1,000) of hydrochloric acid.

I regret I cannot try this treatment myself, because I have no cholera patients, but I hope some one will give it a fair trial; it seems to be more rational than any that has been in vogue. In addition, I would advise those who are in a cholera or typhoid district, especially those who come in frequent contact with the patients, to have their gastric contents examined, and if there is any deficiency in the gastric juice, to supply it freely by taking liberal doses of hydrochloric acid, and also of pepsin if it is deficient, as the two act well together. E. Palier, M.D.

Progress of Medical Science.

Boston Medical and Surgical Journal, August 9, 1906.

Adams-Stokes Disease, with Report of Three Cases.—Walter S. Steiner says this disease is an affection which presents clinically the following features: (1) A slow pulse, usually permanent, but sometimes paroxysmal, falling to 40, 20, or even 6 per minute; (2) cerebral attacks which consist in vertigo of transient character, syncope, pseudoapoplectiform attacks, or epileptiform seizures; and (3) visible auricular impulses in the veins of the neck, the beats varying greatly, a 2:1 or 3:1 rhythm being the most common. The disease is most commonly seen in persons past middle life. Males are more frequently affected. Syphilis and myocardial changes appear to be contributing factors.

Treatment of Tuberculous Laryngitis in Sanatoria.—George L. Richards states that such statistics as he has been able to find would seem to show that positive laryngeal lesions are present in at least 15 to 20 per cent. of all cases of tuberculosis, and some statistics give the proportion as very much higher. The ideal treatment of laryngeal tuberculosis is one in which the local measures can be judiciously and helpfully carried out during the continuance of climatic treatment. The question of the proper care and treatment of these cases should be more seriously considered, especially so since these early and incipient cases are especially suitable for sanatorium treatment, where silence and a proper regime can be carried out.

Accident Litigation.—Frank C. Richardson writes of the widespread and constantly increasing demands for exorbitant sums as compensation for real or fancied injuries resulting from alleged negligence of corporations or individuals, a form of "graft" not only threatening the financial welfare of some of our larger business interests, but especially pernicious in that by reason of its temptations to conscious or unconscious perversion or exaggeration of fact, it is damaging to the moral integrity of the masses who are its most frequent perpetrators.

New York Medical Journal, August 4, 1906.

A Modified Operation for Movable Kidney.—J. Chalmers DaCosta has long been dissatisfied with the suture operation for movable kidney, and has practised the following operation in twenty cases, to his entire satisfaction. The exposure of the kidney is identical with the method of Senn, and the kidney is brought out of the wound as advocated by Edebohls. The fatty capsule is cut away and the fatty capsule is either scraped or rubbed with gauze, or decapsulated. The ends of two pieces of iodoform gauze are sewed together with slender plain catgut for use for the upper and the lower pole of the kidney. Therefore, instead of passing one long piece of iodoform gauze beneath a renal pole, and being obliged subsequently to pull a long end around under the kidney, when the gauze is to be removed, a sutured piece of gauze is placed under the renal pole and, as the sutures are composed of fine plain catgut, they quickly absorb and, in a few days, the gauze is easily delivered, and, the suture line being directly under the kidney, there is only a short end to pull around on each side.

The Surgical Significance of Jaundice.—Samuel Lloyd says that the changes in the blood and the condition of the kidneys must be most carefully considered in the surgical treatment of jaundice. A change in the coagulability of the blood is one of the most dreaded conditions to meet, and its exact cause one does not know. Lloyd refers to this as a pseudohaemophilia. In these cases it may require 13 minutes or longer for coagulation to occur. Such hemorrhages begin as a rule from one to four days after operation. In all cases of prolonged jaundice there is a marked and generally increasing anemia. Surgical operations performed when the hemoglobin percentage is below 30 are exceedingly serious; if it has fallen to 20 a fatal result is almost certain. Changes in the kidney are important, more in determining the anesthetic to be employed and in influencing the prognosis. In cirrhosis surgical relief may be possible. He has done the Talma-Morrison-Drummond operation seven times, and he believes it is worth while to attempt this operation in those cases where the ascites is great and the patient is losing ground.

Rational Treatment of Visceral Ptosis.—J. Madison Taylor offers briefly a few facts and opinions, with a résumé of his own experience, in the treatment of visceral ptosis. This subject is an illustrative instance to emphasize the principle that we should reach back in our efforts to the original defect, the correction of which conserves constitutional depravity from its earliest divergence, and we should amplify the inherent organic resources to the utmost. We should not fail to start at the beginning, the *fons et origo mali*, and not waste time in correcting only obvious derangements. It is always desirable to avoid operation if equal results can be secured by rehabilitating the inherent forces. His opinion is positive that displacements and ptosis of the viscera can, in nearly all instances, be restored. The etiological factors underlying the visceral ptosis, particularly dilatation and motor insufficiency, depend in large part on lessened vasoconstrictor tone. Among the most influential factors in aggravating the ptosis are dyspepsias, intestinal fermentations, and putrefactions.

Journal of the American Medical Association, August 11, 1906.

Surgery of the Biliary Tract.—J. B. Deaver is in favor of removing gallstones whenever present, provided there are no contraindications, and also considers cholecystotomy the safest treatment of any frank attack

of acute cholecystitis that does not subside under judicious medical measures in thirty-six or forty-eight hours. Operation is almost imperative if the attack is not the first and it is believed from the history that gallstones are present. In mild recurrent cases operative interference is indicated, and also in the later stages of gall-bladder disease. In hydrops, cholecystectomy is required, as the closing of the cystic duct renders the gall-bladder useless, and there is constant danger of reinfection or even of rupture. Cholecystectomy is also indicated in gangrene and perforation, but not in empyema, except when of long standing and with the walls very extensively diseased. When gallstones exist the condition is more serious, and the patient is fortunate if they can be removed before they wander from the gall-bladder. The advantages of operation in the latent stages are pointed out. Deaver protests against any indiscriminate resort to cholecystectomy in operating for impacted stone in the common duct unless the gall-bladder is very much diseased. He believes that its retention and drainage constitute a very valuable part of the after-treatment. When the infection has traveled beyond the gall-bladder and involved the hepatic ducts, or even if the cystic duct is very much infiltrated, he would drain the common duct as well. Patients who during typhoid fever give evidence of biliary involvement should, if possible, undergo cholecystostomy on recovery if their symptoms persist, thus not only avoiding future serious disease, but also more effectually preventing their dissemination of typhoid infection from the intestinal tract.

Capillarity in Intestinal Sutures.—F. G. Connell has tested the capillarity of intestinal sutures in order to ascertain whether or not through-and-through sutures of all the bowel coats would be likely to produce infection of the serosa. He experimented with various suture materials, silk, catgut, celluloid, etc., under differing conditions of moisture, tension, etc., both in colored intestinal fluid contents and with plain colored fluids outside the body, and also in living animals in which a loop of intestine was isolated by ligatures and colored solutions injected into the isolated section. The time allowed for the capillarity to manifest itself was two hours, as that would be sufficient for the formation of a plastic exudate that would of itself be protective. The conclusion reached from the experiments, which were generally negative as regards any serious penetration of the coats or infection of the serosa, is that the danger from capillarity has been greatly overestimated, and that it should no longer be considered an objection to the through-and-through stitch. By employing a square or right-angled, instead of a round or whip stitch, the extent of the suture material on the serosa may be reduced to a minimum, and that little can be separated from the general peritoneal cavity by serous apposition.

Birdshot Injuries of the Eye.—W. P. Marple reports two cases of birdshot injuries of the eye, both cases of double perforation. In one of them enucleation was practised. In the second case the shot was located by the *x*-rays. He discusses the diagnosis and prognosis of these injuries and refers to a number of cases of interest in the literature. Except when there is a lacerated wound in the ciliary region, or when the eyeball is disorganized by numerous shot entering it at close range, he considers the prospect of saving the eyeball is generally fair, but as to the preservation of sight, that depends on the parts involved. If the course of the shot is through the peripheral structures, and especially when there is a double perforation, the visual disturbance is principally due to hemorrhage, and it may take months for absorption to be complete. Penetration of the eyeball is not an essential condition for serious results; they may occur without it. In his second case, the vision was 20/20 at the end of five months and absorption, he thinks, was still continuing. When a shot remains in the eye it may do mischief if it rests near the ciliary body, but he does not consider that its mere presence will be necessarily irritating. If the shot is in an accessible position, attempt should be made to get it out, as when it lies near the ciliary body, where it will probably set up irritation. Otherwise it may become encapsulated. If the eye is badly lacerated immediate enucleation is advisable. If the perforation is single the principal thing is to prevent infection. Accurate *x*-ray pictures should be taken to locate the shot, and if a double perforation is shown, the eye can probably be saved, if the ciliary body is not injured and if infection does not occur. Probing is strongly condemned. With hemorrhage in the vitreous the iodides may be useful in assisting absorption.

The Lancet, July 28, 1906.

Appendicitis and Gangrene of the Vermiform Appendix Considered as Separate Diseases.—The object of this paper by John D. Malcolm is to show that in a considerable number of cases of mischief connected with the vermiform appendix the initial lesion is a formation of a gangrenous patch in the wall of that part of the intestine, a condition that is frequently associated with an appendicitis beginning in the mucous membrane but which may arise independently. He concludes that gangrenous patches forming in the wall of the appendix may bring about three well defined conditions and which are independent of inflammation beginning in the mucous membrane. First there may be an escape into the peritoneal cavity of microorganisms which excite serous, a seropurulent or a purulent exudation unlimited by adhesions. Second, the adjacent peritoneum may become adherent over a gangrenous patch and the latter separates and is discharged through the appendix, recovery taking place. Third, a gangrenous patch may thus become sealed off, but when it separates the adhesions also give way and a localized abscess forms or a rupture into the peritoneal cavity takes place. If an exact diagnosis between the signs and symptoms of inflammation of the appendix beginning in its mucous membrane and those of the gangrenous formation which occasionally occurs in its walls could be made, the treatment would be much simplified, but the differential diagnosis may be very difficult.

The Passage of Spirochæta Duttoni from Mother to Fetus.—Anton Breinl, as a result of experimental work on the organism of African relapsing fever, comes to the following conclusions: (1) *Spirochæta duttoni* passes through the placenta from the circulation of the mother to that of the fetus. (2) The majority of the fetuses carried by an infected mother are themselves infected. (3) The parasites are found in the placenta in approximately the same numbers as in the maternal heart blood, but, on the contrary, occur in very scanty numbers in the fetal circulation. (4) The spirochetes in the fetal circulation show no morphological changes. (4) Infected pregnant rats show no tendency towards abortion, but few of their young, in comparison with those from healthy mothers, reach maturity. (6) The young born of infected mothers possess no marked inborn immunity against infection either by means of direct inoculation or through the bites of ticks.

The Electrical Resistance of the Blood and Urine as a Test of the Functional Efficiency of the Kidney.—Dawson F. D. Turner finds that the specific resistance of a normal urine amounts to about 45 ohms and that the resistance is a measure of the salts present in the urine; the greater the concentration the less the resistance and *vice versa*. In disease the resistance was found to be increased chiefly in acute croupous pneumonia, in diabetes mellitus, acute and chronic Bright's disease, and in pernicious anemia. In the latter disease, the resistance was usually one-half that of normal blood and the deduction was that the blood in this disease contains an abnormal amount of salts due either to destructive metabolism or to renal inefficiency, or both. The resistance of the urine was found to be abnormally high; hence there is the striking fact that while the urine contains too few salts the blood contains an abnormal amount, a clear case of renal insufficiency.

The Possible Importance of Earthworms as a Factor in the Spread of Disease.—Charles F. Fraser considers the existence in the alimentary canal of lumbricus or allolobophora of a vast number of parasitic organisms, some being rendered peculiarly virulent by their passage through the worm. The tatanus bacillus especially being rendered so and thus [illegible] possible explanation of the frequency of infection among grazing horses. In the posterior part of the gut nematode is found which has a great similarity to trichina spiralis. Infection of a pig may occur from contamination of the herbage with worm-casts, or the pig may eat the lumbricales themselves.

British Medical Journal, July 28, 1906.

Errors of Refraction Among Children Attending Elementary Schools in London.—A. Hugh Thompson states that the average age of the children examined under 10 was 9; and at this age 23.4 per cent. of those with defective sight, or 2.34 per cent. of the children on the register, were myopic. Four years later, at an average age of 13, the proportion was 31.3 per cent. of those with defective sight, or 3.13 of those on the register, an increase of 1 in 125. There was an ap-

parent increase of hypermetropia in children over 12 and a decrease of mixed astigmatism. There was a continuous decrease of hypermetropic astigmatism as the children grew older. He concludes his paper by stating that of the total number of children who need glasses, about one-quarter need simple convex spheres. Excluding cases of myopic astigmatism, nearly half of the children who need glasses at all, need cylindrical glasses, or a cylindrical combination. Myopic children, with or without astigmatism, are about 3 per cent. of the whole number in all elementary schools. In very young children myopia exists to a greater extent than has hitherto been generally realized.

The Varieties of Ringworm and Their Treatment.—James H. Sequeira says that in his country the commonest form by far is *Microsporon audouinii;* next in order comes the large-spored *Tricophytons,* and last, the favus fungus, *Achorion schonleinii.* The first of these is exceedingly difficult to treat because the fungus extends into the hair follicles and the remedies applied cannot penetrate sufficiently. The fungus is easily reached by parasiticides when the disease affects parts which are not hairy. With the exception of those cases in which the beard is affected, the ectothrix ringworms are less resistant to treatment than the diseases due to the endothrix and microsporon fungi. The treatment of ringworm of the non-hairy parts is rarely a matter of great difficulty and the compounds of mercury are most useful. Thoroughly wash the parts with soft soap and warm water, and then rub in the white precipitate ointment. Ointment of oleate of mercury is another good preparation. Oleate of copper has its advocates. Sulphur and sulphurous acid are also valuable. In the treatment of ringworm of the scalp and beard regions a very satisfactory epilating agent is to be found in the *x*-ray. In most cases the hair starts growing again in six to eight weeks after treatment. It should be remembered that the *x*-rays have no lethal effect on the parasite; their sole virtue is that they bring the hairs out with the fungus. The rest of the scalp should be protected against the falling hairs.

Thyroid Gland in Obesity.—W. J. Hoyten says that the best results are obtained in females between the ages of 35 and 45 years. He uses tablets containing 2½ grains and one tablet is taken with each meal. After seven days the dose is increased to five grains with each meal. Alcohol is prohibited in any form. Of 78 women treated, 69 were between 25 and 45, their average weekly loss was 2½ to 4 lbs., and the result was permanent cure; 9 were between 15 and 19, and there was no permanent result in any of them. Of 25 men 9 were between 30 and 47; they lost on an average 2 to 3½ lbs., and the cure was permanent; 11 men between 30 and 47 lost 1 to 1½ lb. on an average, but the result was not permanent; on 5, between 14 and 17, there was no effect at all.

Berliner klinische Wochenschrift, July 23, 1906.

The Agglutination of Typhoid Bacilli by Bile.—Venema says that the discovery that a certain group of individuals exists who are chronic typhoid bacilli carriers has led to the search for some means of rendering such people free from the organisms. Persons of this description are not unlikely to be sources of infection to others and it is, therefore, of great importance to do away with this source of danger. So far all efforts in this direction have been in vain, however, and the various intestinal disinfectants, astringents, and purgatives employed have not accomplished the desired results. Since it has been recognized that the gall bladder serves as the breeding place for the typhoid bacilli under these conditions, attempts have been made to devise some plan of treatment by immunization. It is therefore necessary to investigate the action of bile on typhoid bacilli and the author has carried out a series of experiments with this end in view. The agglutinating and bactericidal power of the bile of individuals dying of diesases other than typhoid was tested, as well as that of normal experiment animals. The result showed that there was no agglutinating nor bactericidal power in such specimens of bile, and Forster and Kayser have already discovered that the bile of immunized animals also has no bactericidal power. It therefore appears that there is little probability of success in attempting to destroy the typhoid bacilli in the gall bladder by any immunizing process.

The Application of Wright's Opsonin Theory.—Weinstein reviews the underlying principles of Wright's opsonin theory, which he says has not yet received the recognition it deserves in Germany. He describes the technique as practiced by Wright and gives the case histories and opsonic curves of eleven cases of acne and furunculosis which were treated with vaccine prepared from the patient's own staphylococci in accordance with Wright's teaching. In all of these very satisfactory results were obtained and the author expresses himself as favorably impressed with the method. In most of the cases the negative phase of Wright was observed immediately after the first inoculation and the positive phase, attended by an improvement in the clinical picture, usually occurred after two or three inoculations. In most cases the first injections were followed by a reaction of which malaise and weakness were the chief symptoms. There was no elevation of temperature. In some instances the patients complained of moderate tenderness at the site of injection. The best results were obtained by using small doses at first and continuing these until a cumulative positive phase was produced, that is, the opsonic index remained persistently high. Only after this has occurred should the dose be increased.

Münchener medizinische Wochenschrift, July 24, 1906.

The Value of Ahlfeld's Method of Hand Disinfection.—Herff states that he considers it a serious injustice that so little attention has heretofore been paid to the hot-water-alcohol method of hand disinfection devised by Ahlfeld, and that even the leading text-books either omit all reference to it or speak of it slightingly. Herff has tested it on 5,000 parturient women treated in the Maternity Hospital of Basle during the period from November, 1901 to May, 1906, and the results obtained he considers are so excellent as to form an exceedingly strong argument in favor of the method. The total mortality during this period was .7 per cent; there were no deaths form puerperal infection, and elevations of temperature above 38° C. were observed in only 8.2 per cent. of the cases. The two most important advantages afforded by the hot-water-alcohol sterilization are its simplicity, since only two scrubbings of about five minutes each are required, and the fact that the alcohol tans and dries the skin so that the number of germs cast off in the course of an operation either by the operator's hands or the skin of the patient is greatly reduced. The author attaches considerable importance to the protection of the skin about the incision with dry towels rather than by any impervious material, as he considers that if the latter is used there is much greater likelihood of wound contamination.

The Treatment of Spinal Palsies of Children.—Vulpius discusses the various procedures available for the treatment of spinal palsies that have reached a permanent stage. He is somewhat averse to the use of apparatus except in selected cases owing to the many disadvantages that attend its use. In cases of total paralysis with flail joints arthrodesis is very useful and gives particularly satisfactory results in treating flail joint at the shoulder. In dealing with partial palsies, tendon transplantation, although of comparatively recent development, has become one of the most therapeutic procedures at our command, and Vulpius believes it will be found more and more universally applicable. He himself has had a very large number of permanently satisfactory cases and he urges that the method be more frequently applied.

Allergy.—Pirquet proposes the use of this term to express the altered faculty of reaction exhibited by an organism that has been inoculated with some specific substance. Recently the phenomena of oversensitiveness following immunization have become widely recognized and have been made the subject of much study, but it is a misnomer to speak of immunity and oversensitiveness as existing in the same individual. Pirquet, therefore, would restrict the term immunity to those processes in which the introduction of the foreign substance into the organism does not produce any clinical reaction; that is, complete nonsensitiveness exists. The condition of increased sensitiveness shown by those who have been inoculated with vaccine, the virus of syphilis, or tuberculin, for example, comprises "allergy." the individuals themselves are to be spoken of as being "allergic," and substances which, when introduced into the body, produce an alteration in its powers of reaction are "allergens."

Deutsche medizinische Wochenschrift, July 26, 1906.

Garrulitas Vulvæ.—Schulein says that two theories are held in regard to the nature of this affection. The adherents of the one believe that the gas expelled audibly from the vulva is formed by gas-forming bacilli in the vagina, while others are of the opinion that atmospheric air is aspirated into the vagina and

is then expelled, either immediately or after the lapse of some time. The author, who describes in detail two cases of this affection, holds the latter view and considers that relaxation of the vagina and vulva after childbirth and relaxation of the abdominal parietes are the most important predisposing factors. The treatment consists in astringent irrigations and sitz baths, together with the attempt to improve the muscular tone of the entire body. If these measures are not successful colpoperineorrhaphy will usually afford relief. The affection is one which is much commoner than is ordinarily believed, as the patients of the lower classes do not consider it important enough to consult a physician about, while those of the higher walks of life are likely to feel diffident about seeking medical aid on this account.

Observations on the Living Spirochæta Pallida.—Beer says that he has been able to keep living spirochetes under observation in microscopical preparations during a period of thirty-three days. The material studied was obtained from primary lesions, mucous patches, and buboes. Beer found that the conventional hanging drop preparation was less satisfactory than the use of an ordinary slide and cover glass, evaporation being prevented by ringing the cover glass with vaseline and wax. In such preparations it can be seen that the spirochetes exhibit two forms of motility, namely, rotation about their long axis and lateral movements of the entire body. When the organism comes in contact with a cell the rotary motion is particularly marked and the organism appears to be attempting to penetrate the cell membrane corkscrew fashion. In fresh preparations most of the spirochetes promptly attach themselves to the cellular structures in this way so that the periphery of blood corpuscles, epithelial cells, etc., is a good place in which to look for the organisms. The author was not able to observe division of a living spirochete, but he witnessed what appeared to be the beginning of a longitudinal fission so that a Y-shaped form resulted. No development changes were noted in the spirochetes during the period they were under observation.

French and Italian Journals.

Ovarian Insufficiency.—Paul Carnot reviews Frankel's conclusions in regard to this subject. Ablation of the ovaries performed sometime after fecundation of the ovum arrests pregnancy. Ablation of the ovary besides this effect brings about atrophy of the uterus. The ovary governs the nutrition of this organ. It is the corpus luteum which exercises this function, for the destruction of these bodies by the thermocautery is followed by the same effect as is the extirpation of the entire gland. The destruction of this body in the course of a laparotomy prevents menstruation. The corpus luteum has a structure like that of the other glands producing an internal secretion. It gives to the uterus a cyclic nutritive impulse and prepares the mucosa to receive the fertilized ovum. If the ovum is fertilized the corpus luteum persists and increases the nutritive function of the uterus, the mucosa of which envelops the ovum and allows it to develop. If the fertilization does not occur the corpus luteum produces hyperemia of the uterus, which ends in menstruation. The corpus luteum must be considered a small ovarian gland which is regenerated periodically and which presides over the nutrition of the uterus from puberty until the menopause. The writer then cites various instances of ovarian insufficiency in which the administration of the extract of this gland has been followed by gratifying results.—*Le Progrès Médical,* June 16, 1906.

Liver Abscess of Appendicular Origin.— Véron relates his observations of a patient who was successfully operated upon for appendicitis. There was neither suppuration nor adhesions. The appendix was long and swollen and was resected. The condition of the patient was grave in the days following the operation. The wound suppurated and was opened up. It was then tamponned with iodoform gauze. It was not until the fifteenth day that the existence of a liver abscess was recognized. A second operation was performed and thick pus was evacuated. The pus was full of bloody streaks, but was without the chocolate color of the liver abscess of dysenteric origin. The temperature fell, the general condition improved, and the operative wound granulated. Six weeks after operation, however, a new liver infection developed. A purulent retention was suspected. The wound, which had not yet healed over, was probed with the finger, and it was discovered that the first cavity communicated with a second pocket. Drainage and dressing were renewed. Four times purulent intrahepatic collections were evacuated. Finally the patient entirely recovered.—*La Presse Médicale,* June 16, 1906.

Cystic Swelling of the Ovaries in a Patient With Hydatidiform Mole.—Goullioud calls attention to the coexistence of hydatidiform mole and a special cystic degeneration of the ovaries. He has recently observed a woman twenty-five years old, mother of two children, who toward the fourth month of the third pregnancy had a bloody discharge. On either side of the fundus of the gravid uterus were two symmetrical tumors. These were oblong, the size of a fetal head, slightly movable, and distinct from the uterus. The patient expelled an hydatiform mole. This was followed by a phlebitis. The tumors progressively decreased in size until they regained the normal dimensions. Two years later the patient again became pregnant. She was confined at the fourth month. The fetus was normal and the placenta showed no trace of degeneration. Six months later the patient was in a perfectly normal condition. The writer declares that the condition was rather cystic tumefaction than cystic degeneration of the ovaries. In this patient these organs resumed their normal functions. In such a case there is no indication to practise ovariotomy.—*Lyon Médical,* June 17, 1906.

Bacterium Coli and the Potability of Water.—Elio Tirelli says that it has been generally believed that the presence of bacterium coli in a specimen of water was a sufficient indication of its unfitness for drinking purposes. Other authors have given no value to this test, on account of the ubiquity of this germ. The author has examined water from eight different sources in the city of Parma in order to ascertain how frequent this germ is in waters, and what is its relation and that of the bacteria similar to the colon bacillus to the potability of water. He made careful chemical and bacteriological examinations of all the specimens. He concludes that the bacterium coli is not by any means ubiquitous, since he found it present in 25 per cent. of the specimens, and the similar bacteria with it in 18 per cent. The presence of these bacteria should be considered a sufficient indication of the impurity of any water. When the bacilli similar to the colon bacillus alone are found they do not indicate an impurity that renders the water unfit for drinking.—*Giornale Medico del Regio Esercito,* May, 1906.

A Mixture of Air and Chloroform as an Anesthetic.—Gréhant in his experiments with animals used a mixture of chloroform vapor and air, in the proportion of ten grams of chloroform to one hundred liters of air. He chose two dogs, one weak and sick, the other strong and vigorous. The first was anesthetized with the 10 per cent. mixture. The animal showed no excitement, but its temperature was lowered several degrees. One hundred c.c. of blood contained only twenty-one milligrams of chloroform. The second dog was subjected to the action of the same strength of chloroform. It showed strong excitement. In order to calm the animal it was necessary to employ a stronger mixture. Fifteen grams of chloroform to one hundred liters of air produced complete anesthesia. The rectal temperature did not vary. One hundred c.c. of blood contained fifty-two milligrams of chloroform. Gréhant concludes from his experiments that the surgeon must employ doses of chloroform for anesthesia varying according to the strength of the patient.—*Le Bulletin Médical,* May 30, 1906.

Cystic Sarcoma of the Mesocolon.—This case was in Jaboulay's service. The patient was a man thirty-six years old, a miner. The personal history was negative. Three months before his entrance to the hospital he suffered from malaise and sometimes from pains in the lower part of the abdomen, which obliged him to stop work for a while. There seemed to be no other symptom. He had not lost strength, and he showed no signs of intestinal or urinary disturbance. His abdomen appeared to be increasing in size. Palpation detected a tumor. Within two months this growth had attained a considerable size. On his entrance to the hospital the patient was not emaciated, nor did he suffer pain. Operation was performed, and the tumor was removed. Recovery was complicated with phlebitis, with pulmonary embolism. It is now about six weeks since the operation and the patient is pronounced well.—*Lyon Médical,* June 3, 1906.

A Prolonged Case of Typhoid Fever with Many Relapses.—Paul Claisse describes this case. The duration of the fever was two hundred days. The first attack was followed by five relapses, each of which lasted from ten to fifteen days. The benign character of relapses in typhoid fever has often been emphasized. This cannot be regarded as an absolute rule. In the present case the life of the patient was in danger from intestinal hemorrhages in one of the relapses. Aside from this, however, the illness was uncomplicated and the nervous symptoms were slight. Serodiagnosis proved without doubt that this was an instance of typhoid fever. With regard to paratyphoid bacilli of various origins, the results of the tests were negative. They were constantly positive in regard to the typhoid bacillus.—*La Presse Médicale,* June 6, 1906.

Book Reviews.

THE MEDICAL DISEASES OF INFANCY AND CHILDHOOD, with Points on the Anatomy, Physiology, and Hygiene Peculiar to the Developing Period. By ALFRED CLEVELAND COTTON, A.M., M.D., Professor of Pediatrics, Rush Medical College, University of Chicago; Attending Physician for the Diseases of Children, Presbyterian Hospital; Consultant to the Central Free Dispensary, etc., etc. Formerly Physician-in-Charge of the Chicago Isolation Hospital and of the Infectious Disease Wards of the County Hospital. Member of the Thirteenth International Medical Congress, Moscow. Honorary Member of the Société d' Hygiène, Paris, etc. Philadelphia and London: J. P. Lippincott Company, 1906.

IN this excellent contribution to the literature on pediatrics, the author has wisely laid special emphasis on the subject of prophylaxis, which under the heading of "Anatomy, Physiology, and Hygiene of the Developing Period," comprising the first part of the work, he has indicated as the foundation upon which must rest all rational and scientific treatment of disorders of infancy and early childhood. This first part of the work, comprising chapters on "Normal Growth and Development," "Physiology and Hygiene of the Newborn," "Natural, Supplemental, and Artificial Feeding," with a brief discussion on "Food Essentials," etc., is an excellent introduction to the consideration of pathological conditions forming the second and, of course, principal part of the work. In Part One the author is perhaps somewhat specious in his treatment of some of the features under the heading of "Hygiene of the Nursery." This speciousness, however, is compensated by very practical though albeit somewhat dogmatic discussion of other important subjects. The author's contention is certainly reasonable, that successful treatment of infantile diseases demands, so to speak, readjustment of the ordinary association of pathological and clinical manifestations as applied to adult life.

Part Two consists of sixteen chapters covering pretty thoroughly all of the diseases of infancy and early childhood, very satisfactorily grouped, and an appendix comprising remarks on "Sickroom Hygiene" and a formulary of the more commonly needed antiseptic solutions, correctives, astringents, etc. The chapters on "Diseases of the Heart," "Diseases of the Respiratory Tract," and "Diseases of the Nervous System" are especially good, clear, and concise. The book is well indexed, the illustrations are particularly instructive, and on the whole the work is very readable and is especially adapted to the requirements of the general practitioner rather than the pediatrician as a specialist.

LECTURES ON CLINICAL PSYCHIATRY. By Dr. EMIL KRAEPELIN, Professor of Psychiatry in the University of Munich. Authorized Translation from the Second German Edition. Revised and Edited by THOMAS JOHNSTONE, M.D., Edin., M.R.C.P., Lond. Member of the Medico-Psychological Association of Great Britain and Ireland. Second Edition. New York: William Wood & Company, 1906.

THE changes made in the second edition of this standard treatise on psychiatry consist chiefly in the substitution of more appropriate clinical histories for some of those used to illustrate the lectures at first. Some of the original cases which were found by later developments to be instances of some other disease than the one they were cited to exemplify, were dropped and some other more typical cases were made to take their places. Seven new cases are introduced to supplement the teaching regarding the insanity of degeneration. For the benefit of those not familiar with Kraepelin's work, it may be said that it is arranged in the form of clinical lectures, of which there are thirty-three in the book. This renders the book less adapted for use as a work of reference, but it makes it much easier of assimilation by the student who would ground himself thoroughly in psychiatry.

A COMPEND OF OPERATIVE GYNECOLOGY, Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital; delivered by WILLIAM SEAMAN BAINBRIDGE, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital; Consulting Gynecologist, St. Mary's Hospital, Jamaica, L. I., Consulting Gynecologist to St. Andrew's Convalescent Hospital, New York, etc. Compiled, with additional notes, in collaboration with HAROLD D. MEEKER, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital; Assistant, Department of Gynecology, Vanderbilt Clinic, College of Physicians and Surgeons, New York. New York: The Grafton Press, 1906.

THIS book is intended for students taking the course in Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School. To such it should prove useful.

PRAESCRIPTIONES. Rezept-Taschenbuch für die Praxis. Von Dr. EMIL KANTOROWICZ, Arzt in Berlin. Mit einem Vorwort von Professor Dr. Senator. Berlin: August Hirschwald, 1906.

VERY nearly seventeen hundred prescriptions are contained in this formulary, conveniently arranged under the names of the conditions which they are intended to relieve. The collection is conspicuous for the comparatively small number of the newer remedies that are mentioned, and those that do appear for the most part belong to the minority that seems likely to remain permanently in the materia medica of the practitioner. As to this particular collection of prescriptions, in classic phrase: "For those who like this sort of thing, it is the sort of thing they like."

THE MORPHOLOGY OF NORMAL AND PATHOLOGICAL BLOOD. By GEORGE A. BUCKMASTER, D.M., Oxon., University College, London. Formerly Radcliffe Fellow, Magdalen College, Oxford. Philadelphia: P. Blakiston's Son & Co., 1906.

WHILE there has lately been no dearth of new books on hemology, the present volume is of a sort to prove useful to all students of the subject. Its substance is based on a course of lectures delivered in the Physiological Institute of the University of London, and there are accordingly more or less considerable gaps in continuity, but the book contains so much original work that it is of the greatest interest to the more advanced reader. Discussions of particular interest are the section relating to the polycythemia of high altitudes, which comprises the results of the author's own counts, made in Switzerland; the chapter on the significance of the blood platelets; and the one on the tests for blood. An opinion of the author's, expressed in several places, is that the enumeration of the red cells is of little value, owing to the errors likely to occur even in the most expert hands. Absolutely reliable results, he says, can be obtained only by using a selected pair of counters which are exact, counting the diluted blood on both of these, and rejecting any two determinations which do not agree within 10 per cent. The recent literature has been duly examined, and the author's opinions in regard to disputed points are always of a sort to command respect. The volume is a valuable contribution and may be warmly commended to those concerned in blood work.

ATMOKAUSIS UND ZESTOKAUSIS, die Behandlung mit hochgespantem Wasserdampf in der Gynäkologie. Von Dr. LUDWIG PINCUS, in Danzig. Zweite verbesserte Auflage. Wiesbaden: J. F. Bergmann, 1906.

IN this country comparatively little attention has been extended to a method of treatment which has found a number of advocates in Europe. It is now some twelve years ago that superheated steam was first used by Snerigew for checking obstinate uterine hemorrhage and in other conditions of this organ. The method was entirely empirical, however, and also fraught with considerable danger, until Pincus devised proper means for the application of both steam and hot air to the interior of the uterus, and also formulated the indications for their use, as well as working out the proper temperature and the length of time necessary for a proper working of the medium. The present volume, a book of almost four hundred pages, contains about all that we know about this method of treatment. We have to deal here with a procedure which may find some application in the hands of a specialist and an enthusiast, but for obvious reasons will probably never be universally adopted. The book is written in the involved style and language common to German text-books of the older school. Less verbosity and more concise practical descriptive matter would have added greatly to the value of the work.

A MANUAL AND ATLAS OF ORTHOPEDIC SURGERY. By JAMES K. YOUNG, M.D. Illustrated with over Seven Hundred Photographs and Line Drawings, mostly from Original Sources. Philadelphia: P. Blakiston's Son & Co., 1905.

THIS work is put forward by the author as the result of his studies and personal experiences during the past twenty years in the hospitals of Philadelphia and elsewhere, and he has included everything within the scope of orthopedics without invading the field of general surgery. The first part of the book, on general orthopedic surgery, includes an interesting chapter on the history of the science, and others on pathology, etiology, symptoms, diagnosis, and treatment, while the second part comprises chapters on the special types of deformity. The well-known position of Dr. Young in the specialty with which his name is associated assures us of excellent material in the text, and this same excellence is found in the illustrations, which are not only numerous but well selected. The only word of criticism is that directed to the size of the volume and its weight, which are sufficient to constitute a "bimanual" and we venture to say will interfere somewhat with its usefulness as a "ready" work of reference.

Society Reports.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held at Cleveland, Ohio, May 30, 31, and June 1, 1906.

THE PRESIDENT, DR ALBERT VANDER VEER OF ALBANY, N. Y., IN THE CHAIR.

Surgery of the Large Intestine.—Dr. GEORGE E. ARMSTRONG of Montreal, Canada, said the death rate from cancer of the large intestine, as from cancer in other situations, was to be lowered by learning to recognize it in its early and incipient stage, rather than in devising heroic operative procedures. In addition to the usual indications of malignancy, as noted in the failing health and strength, attention was drawn to the fact that in a very large percentage of cases of early malignant disease of the intestine there was a regular daily rise of temperature amounting to two or more degrees, and it was pointed out that if this proved to be a general rule, it would perhaps be as valuable a sign of early malignant disease as of incipient tuberculosis. Another symptom-complex referred to was the frequently recurring colicky pains associated with constipation; and when the cancer is situated in the rectum, to the sudden development of hemorrhoids with constipation in a patient who was previously regular. The harmless form of hemorrhoids usually developed as the result of prolonged and persistent constipation. The importance of a very thorough and careful examination was referred to, and in particular a careful search for the presence of tumor mass, the examination not being considered complete until carried out with the patient in varying positions, as a distinguishing feature of these tumors was their mobility. The treatment of these cases was discussed from two points of view. (1) The relief of intestinal obstruction. (2) The radical removal of the growth. In the former it was pointed out that good judgment had more to do with the results than manual dexterity or knowledge of technique, and it was urged that in patients admitted to hospital with distended abdomen, stercoraceous vomiting, general peritonitis, and intestinal walls sodden and friable, nothing more should be attempted than drainage of the bowel through the appendix or an appropriately placed Paul tube. Many deaths occurred through trying to do too much under such circumstances. Ideal surgery should not be considered; it was a question of expedience and of temporizing, and of giving a patient time to recover from the toxemia present. Short circuiting of the growth, and its removal at the same or some subsequent time was commended as a cleaner and more satisfactory procedure than colostomy, and as a method which offered opportunity for removal of glands. In speaking of cancer of the rectum (the so-called high cancer of the rectum), a finger length from the anus, different methods were referred to. The perineal route for the removal of high cancer of the rectum was condemned, as giving insufficient access, either for the proper control of hemorrhage or the removal of the disease and glands. The combined abdominal and perineal method was advocated as the most conservative, the safest, and most radical of the methods so far employed. Through the abdominal incision the operator could get as far above the disease as necessary. The glands might be thoroughly removed and involvement of the peritoneum or bladder, if present, might be recognized and dealt with as might seem best. The greater part of the operative work might be accomplished before the intestine was opened or the peritoneum exposed to infection. If there was sufficient of the lower end left after the removal of the disease, the intestinal canal might be restored by a sigmoidorectostomy, or an ileosigmoidostomy, and it went without saying that the canal should be restored whenever possible. If this was impossible, the upper end might be brought out through a colotomy wound, and a permanent artificial anus established. The lower end could then be separated by blunt dissection, pushed down behind the bladder, and the peritoneum closed over it much in the same way as after extirpation of the uterus. The lower end might then be removed by the perineal route. If the patient's condition was not good, the removal of the lower end of the rectum might be delayed for a few days, but in the four cases in which the author had removed high rectal disease by this method the patients had been remarkably free from shock, and had left the table in good condition. It was pointed out that the artificial anus in front, while possibly causing more mental distress than one situated behind, was more easily cleaned and looked after, and made the patient more independent of nurse or valet. The more frequent use of the Paul tube in colotomies was advocated.

Cancer of the Sigmoid and Rectum.—Dr. CHARLES H. MAYO of Rochester, Minn., said that with some modifications the curability of cancer was generally accepted. The disease was more rapidly disseminated in the young from their active lymphatics. The large bowel was the natural drier or absorber of fluids, but had a limited lymph drainage. Cancer of the colon was a disease in a removable structure which might remain essentially local for a long period. In the sigmoid, if the tumor was not removable, short circuiting the bowel was advisable. Low cancer of the rectum could be removed by the perineal route. Those cases which were above easy reach were best removed by a combined operation, abdominal and perineal. If the muscular and nerve tissue could be preserved, the anal outlet was maintained; if it must be destroyed, an inguinal anus was made. If within (easy) reach and inoperable, curetting and cautery were preferable to colostomy. In five years Drs. W. J. and C. H. Mayo (usually working together) had operated upon twenty-six patients by the combined method; seven died from the operation or within one month; ten cases operated too recently to be of value, but alive and well; seven lived over one year, five alive now; five lived over two years, three alive now; three lived over three years, two alive now. The results of cure were favorable, although the operative mortality was high.

Cancer of the Colon, with Special Reference to Its Diagnosis: Types of Operation: Method of Avoiding Fecal Drowning.—Dr. WILLY MEYER of New York explained that his remarks would have reference to that part of the colon only which was situated between cecum and sigmoid. He pointed out the paramount importance of early diagnosis and timely operation, at the same time admitting the great difficulty in reaching such a consummation, chiefly on account of the usually latent development of the disease. He cited a case in which the patient had been apparently in perfect health up to within a few weeks of his death. The symptoms then developing pointed to malignant tumor of the anterior mediastinum. Postmortem showed primary carcinoma of the colon at the splenic curvature, with metastatic involvement of the mediastinum. Every symptom, therefore, he stated, that justified the suspicion of colonic cancer, and every method that might help to determine the correctness or incorrectness of such a suspicion, must be welcome; all the more, as the prognosis of cancer of the colon was better than that of malignant disease in any other part of the gastrointestinal tract. Of the subjective symptoms, he considered of greatest value that of periodic, not always painful, contraction within the abdomen, so often noticed by the patient. It occurred usually in more or less the same locality, and, in an advanced stage of the disease, was frequently followed by a distinctly audible gurgling sound. He called this sign "subjective stiffening of the gut, in contradistinction to the "objective stiffening" or tetanic recurrent per-

istalsis of the gut proximal to the seat of the disease, first described by Nothnagel as a visible and palpable sign. In one of his own cases, a carcinoma of the transverse colon, this "subjective stiffening" of the gut represented the only symptom complained of during many months. Among the objective signs, the author mentioned the appearance of a palpable tumor in 40 per cent. of the cases only, chronic circumscribed meteorism, the objective stiffening of the gut, above referred to, and the rather sudden formation of capillary angiomata and pigmented warts in the skin of the abdominal wall. The latter he considered an unfailing pathognomonic sign of cancer of the colon, provided the history and palpation pointed to this disease. Dr. Meyer had personally observed this phenomenon in four of his cases. With regard to differential diagnosis, the following conditions came principally into consideration: (1) Tumor of the kidney, or floating kidney. (2) Chronic cholecystitis or hydrops of the gall-bladder. (3) Retroperitoneal infiltrated lymphatic glands corresponding to the location of the splenic flexure, eventually secondary to a cancer of the pancreas. (4) Benign intracolonic sessile tumors. He believed the age of the patient to be no contraindication to radical operation, so long as his general condition was still good. In greatly debilitated patients, palliative operation only could, of course, be performed, but, if done at an early stage of the disease, the objectionable artificial anus, otherwise unavoidable, might be obviated by way of a lateral anastomosis. In discussing the different operations indicated for the various conditions found, Dr. Meyer pointed out the danger from the so-called "fecal drowning," which heretofore had been the *bête noir* of the surgeon, whenever more aggressive work was decided upon. He called attention to and demonstrated Kausch's esophageal narcosis tube, an apparatus designed for the purpose of overcoming this danger. The author stated that his personal operative experience with cancer of the colon within the section limited by his paper covered eleven cases, but that so far he had not had an opportunity of employing the narcosis tube just described. He added a brief record of his cases, all of which, with the exception of one, came under his care in a well-nigh hopeless condition.

The Surgery of Tuberculosis of the Colon.—Dr. L. L. McArthur of Chicago read a paper on this subject, in which he submitted the following propositions: (1) Intestinal tuberculosis was far more frequent than had been in the past accepted. (2) Its primary nature in this situation was now admitted to be 5 per cent. by the pathologists, who also claimed that 25 per cent. of all human tuberculosis gained its entrance through the intestinal mucosa. (3) Either the "ulcerative" or the "hypertrophic" type of this disease was (at some time) amenable to surgical interference. (4) That interference should be either by excision or exclusion. (5) That surgical insult in these forms of intestinal disease was better borne than a like degree in any other. (6) That early recognition by the internist and interference by the surgeon would eliminate a large proportion of cases now classified as tabes mesenterica. Tuberculosis manifested itself in the intestine in two forms, the ulcerative and the hypertrophic. Individuals extremely prostrated with this affection were tolerant to extensive surgical insults, which in other ailments requiring similar surgical procedures proved fatal. Both of these varieties in his experience were amenable at times to surgery, the nature of which interference must be determined by the individual case. So many factors would take part in its determination that no set rule could be laid down. Practically, its surgery divided itself into either exclusion or excision, the choice being determined by the conditions obtaining in the given case. The exclusion might be partial or total. The term "partial" he applied to a side to side anastomosis of the intestinal tube above and below the diseased area, while a "total" exclusion implied a resection of the bowel wall above the disease, closure of the distal end, with implantation of the proximal end well below the diseased area. It was distinctly to be understood that absolute occlusion was never practised. Though the number of cases of tuberculosis of the large intestine demanding surgical interference in his practice had been limited, the regularity with which they had recovered had made him most hopeful for the future. He presented from his records cases upon which he had operated, illustrating the points he emphasized in his paper.

Myomata of the Large Intestine.—Dr. W. L. Estes of South Bethlehem, Pa., said that true myomata of the large intestine were almost unknown. So-called myomata of the large intestines were histologically fibromyomata and they were practically always fibroleiomyomata. The rectum was the part of the large intestine which in the great majority of the cases was involved, although there were a few cases on record of myomata of the cecum, of the ascending and of the descending colon. Dr. E. Lexner, of von Bergmann's clinic, had classified myomata, and he had collected the largest number of cases the writer had seen. Lexner made three groups of these tumors, as follows: (1) Tumors which grew in the lumen of the gut. These appeared as pedunculated, roundish, or polyp-like tumors, of rather hard consistency, covered by mucous membrane. They might be removed by way of the anus. The pedicles should be ligated and then cut through. (2) Tumors which grew by a pedicle from the outside walls of the intestine, and which by their bulk impinged upon and might produce almost complete stenosis of the gut by their gradually increasing pressure. This class might involve any part of the large intestine, but were chiefly found in the upper part of the rectum. These tumors required a laparotomy for their removal. (3) Tumors which grew from the rear of the rectum and which, by their bulk, pushed the rectum forward and filled up the cavity of the pelvis. These tumors were easily mistaken for ovarian, and other common tumors of the pelvis. They required sacral exsections or parasacral incisions for their removal. The writer suggested the possibility of another, or fourth, group. Tumors in this class resulted from inflammations. While they were really hyperplasias, they might, but very rarely, develop as circumscribed masses in the walls of the gut, which by persistent hypertrophic thickening might cause stenosis of the gut. The sigmoid flexure was the part of the large intestine involved by this class of tumors. The writer gave the history of a very remarkable case of stenosis of the sigmoid flexure, which resulted from enormous and symmetrical hyperplasia, chiefly of the muscular coats of the gut, and which formed a well-marked tumor of the intestine. The intestine was strictured, almost entirely closed, within the area of the tumor, not above it, nor below it, and the stenosis was produced by the bulk of the hyperplastic muscular layer. Histologically, it was classed by the pathologist as a myofibroma. The writer had not been able to find any mention in surgical or pathological literature of a case similar to his. He believed, therefore, that his case was very rare, and that it indicated the possibility of a fourth class of tumor of the large intestine, which belonged to the myomatous groups. These tumors required a laparotomy for their removal. On account of the very numerous and dense adhesions, the operation for their removal was an extremely tedious and difficult one.

The Surgery of Carcinoma of the Upper Portion of the Rectum and the Sigmoid Colon, with Special Reference to the Combined Sacral and Abdominal Operation for the Resection of These Tumors.—Dr. Jos. C. Bloodgood of Baltimore, Md., stated that sufficient time had elapsed to clearly demonstrate that resection had accomplished a certain number of cures for carcinoma of the stomach, small and large intestines. In the majority of these cases the hope of future progress depended more upon earlier recognition than upon improvement in opera-

tive technique. The technique of gastrectomy for carcinoma was most satisfactory. The only partially settled problem was in regard to the extent to which glandular dissection should be carried. At the present time the majority of authorities favored a restricted glandular operation in view of the higher mortality of the more extensive dissection and the slight probability of a cure if these more remote glands were involved. With carcinoma of the small intestine there was not sufficient experience to formulate positive deductions. Malignant epithelial tumors from the ileocecal valve to the anus were comparatively of frequent occurrence. When the tumor was situated in that part of the large intestine above the promontory of the sacrum the entire operative manipulation was performed within the abdomen. These tumors which arose from the mucous membrane of the large intestine showed little tendency to extend beyond the peritoneal coat, except at the mesenteric border. Adhesions due to the infiltration of the epithelial growth through the peritoneal coat to neighboring viscera were late complications. In planning for the complete extirpation of these growths one should resect a very generous portion of the apparently uninvolved intestine on each side of the palpable tumor, because infiltration of the new growth along the submucosa beyond the open ulcer was a common occurrence. The next most important step was to include with this portion of the bowel a large area of mesocolon, whether the glands were palpable or not. In selecting the point for the division of the bowel above and below the tumor one should have in mind not only the complete removal of the tumor, but to select a point for division which should have, after the resection of the mesenteric area, a proper blood supply. The experience of any surgical clinic and the literature showed a comparatively large number of cases in which the tumor had every appearance of curability, but in which an operative death due to gangrene of one or both ends of the resected intestine marred the result. The decision as to the method of suture after the resection was a somewhat difficult one. As a rule, closure of the two ends with a lateral anastomosis was the safer procedure. In approaching his cases, since 1904, he had endeavored not only to fulfill the requirements of a complete removal of the malignant disease, but to attempt, after its removal, a restoration of the continuity of the bowel by an end to end anastomosis. In his first case, in November, 1904, he was able to perform the complete resection of a carcinoma situated just above the promontory of the sacrum entirely within the abdomen. The condition of the patient, however, forbade at that time an attempt at suture. At the present writing, eighteen months since operation, the patient was content with the colostomy. In a second case, in July, 1905, it was necessary to finish the resection through a sacral incision. In this instance it was possible to save, with a good blood supply, eight inches of the lower end of the rectum, which rendered an end to end suture in the sacral wound possible. The result at the present time is unusually satisfactory. In the third and most recent case it was possible to resect and suture entirely within the abdomen. A careful study of the cases in the literature would justify the following criticisms: (1) Colostomy had been performed too frequently as a primary operation. He believed that colostomy was not indicated unless the patients were first seen in the condition of an acute obstruction, or their condition was so critical from chronic obstruction that a prolonged operation was contraindicated. If possible, the entire operation should be performed at one sitting. (2) It was unnecessary to ligate the vessels so far from the mesenteric border of the colon. Resection of the glands up to this point was not indicated. If they were involved, his experience demonstrated that the condition was hopeless for an ultimate cure. The disadvantage of ligation of the vessels so far from the colon was due to the fact that, after such a ligation, a more extensive resection of large intestine was necessary in order to leave bowel with proper circulation. (3) Too much bowel below the tumor was removed. If one restricted the resection of the large intestine above and below the growth to that necessary only for the complete removal of the disease, and ligated vessels as they were met in the proper dissection of the mesentery with its glands and the fat between the rectum and the sacrum, it would be possible in a large number of cases to restore the continuity of the bowel by an end to end suture. The pathological examination of a number of specimens and the zone of mesenteric involvement which he had made apparently confirmed the statements in the previous paragraphs. That was, in this somewhat restricted operation the new growth was given sufficient margin and at the same time the circulation of the remaining portion was not impaired, and in the majority of cases restoration of continuity.

A Series of Cases of Malignant Growths, with a Clinical Study of the Possibilities of Carcinoma and Sarcoma Appearing in the Same Patient.—This was the title of dent's Address, delivered by Dr. Albert Vander Veer of Albany, N. Y., which was a departure from the usual historical review of the progress of surgery. For many years he had had in mind the possibility of the duality of malignant diseases, that is, as to carcinoma and sarcoma presenting in the same patient, and as to the genesis of many cases appearing in the same family. With these thoughts in mind, he presented the following observations: He was first attracted to this subject by the case of Mrs. P. R., aet. 57, who presented herself March 20, 1870, with acute carcinoma of the left breast, and who, while being prepared for operation, was suddenly seized with a convulsion, ending in immediate death. An autopsy revealed a tumor from the dura, extending outward, ulcerating nearly through the cranium, and which caused deep pressure upon the brain substance. At autopsy no other growths were found in the brain, and, aside from the left breast, all other organs were in a healthy condition. A microscopical examination made of the brain tumor at the time, together with the microscopical appearances, classed it as a sarcoma. The microscopical examination of the tumor from the breast was positively that of acute scirrhus or carcinoma. Years passed by and though many cases were observed, giving all the phases of malignant growths, yet no picture presented itself like that carried in his mind of carcinoma and sarcoma appearing in the same individual. He then described in detail four cases of carcinoma of the breast occurring in four sisters, and considered their connections with several other cases of malignant disease in other members of the same family. In the study of these cases the thought of house infection was to be considered. The first two sisters were born in the house where the uncle passed much of his time, when suffering from malignant growth of the foot. The last two were born in the house and lived where the father was attacked with epithelioma of the lip and face, and was ill for a long time. Each of the houses referred to was old at the time of the birth of these children. One is yet standing, but in neither has he been able to learn of any more or other cases of malignancy. It was somewhat interesting to note that of the four sisters it was the left breast that was implicated in each case. The writer had a record of and had seen a number of cases of carcinoma of the breast in females who had non-malignant fibroids of the uterus, and in operating for the former malignancy did not develop in the latter. He had also operated for both conditions, when the strength of the patient would admit, always bearing in mind the sympathy between these organs in malignancy of either. As far as possible, the writer had looked up the literature, which was exceedingly meagre, bearing on the subject of this paper, and presented extracts (having in mind the etiology, pathology, and possible prophylaxis)

from the admirable work of Prof. Jensen of Copenhagen, to whom was awarded the Walker prize by the Royal College of Physicians and Surgeons.

Some Experiences in Intracranial Surgery.—Mr. Charles A. Ballance of London, England, said that surgical intervention was, at present, the only remedy for certain intracranial diseases, but only too generally the same apathy prevailed in adopting this remedy as was prevalent some twenty-five years ago in operating for analogous diseases in the abdomen. He offered some remarks suggested by his own experience in operating for tumor of the brain, abscess of the brain, subdural hematocele, meningitis and hydrocephalus interna.

Tumor.—Prominent among the obstacles to successful operation for intracranial disease, and particularly for brain tumor, was the difficulty of making a precise diagnosis at an early stage of the disease. The diagnosis of intracranial disease was, speaking generally, a far more complex problem than that of intraabdominal disease, and, moreover, within the skull an exploratory operation could be conducted in the same rapid and complete manner and with as little serious risk as in the abdomen. The maxim that diagnosis must precede operation was true only of those diseases, the signs, symptoms and course of which were fully comprehended. When the early clinical manifestations of a disease were ill-understood and when danger attended delay, the surgeon was content to act upon a provisional diagnosis. Many lives were thus saved and diagnosis became perfected. Another point of practical interest was that a highly cellular tumor of the brain was not necessarily very malignant. This was true not of brain tumors only, but of tumors of other parts of the body, thus a large cellular carcinoma mammæ might prove less malignant than a small atrophic scirrhus with few cellular elements. In 1903 he drained a large gliomatous cyst in the left frontal lobe of a man under the care of Sir William Gowers. The symptoms were relieved, but recurred two years later. He then removed a large mass of tumor from the same region. The patient left the hospital well and proposed to resume his work. There was one point to which he drew attention, namely, the bulging of the occipital fossa in cerebellar tumor in childhood. In 1889 he removed a tumor from the cerebellum of a child, aged three and one-half years. The main localizing sign was a bulging occipital fossa. To prove that operation for cerebellar tumor in the adult might be completely successful, he mentioned that, in 1894, he removed an encapsulated fibrosarcoma from the right cerebellar fossa of a woman, aged forty-nine years, and she was alive and well now.

Abscess.—It was now generally recognized that an abscess in the brain should be treated like an abscess elsewhere. In most cases of slowly spreading infection from chronic disease adhesions occurred at the site of infection, binding together dura, arachnoid, pia, and cortex.

Subdural Hematocele.—Satisfactory results were obtained by removing such cysts. In a case of his, already published, a cyst, 7 by 4½ by 1½ inches, was successfully removed. He had since met with three other cases. In one of Prescott Hewitt's cases the patient, a boy, received a blow on the head from a cricket ball. He lived for fifteen years, during which time he suffered from intermittent insanity.

Meningitis.—He made some remarks about meningitis serosa, a condition which often arose when pus collected outside the dura, as, for example, in some cases of acute mastoid suppuration. The symptoms were: Rise of temperature, slowing of pulse, sluggish pulse, sickness and drowsiness. All these symptoms might be promptly relieved by lumbar puncture. The withdrawal of fluid might prevent the meningitis going on to suppuration, just as the removal of fluid from the pleura by the aspirator relieved the lung from pressure and might prevent the pleurisy going on to empyema.

Hydrocephalus was met with in infants as a congenital condition or as the result of posterior basal meningitis; the congenital form had resulted from intrauterine meningitis. There were two methods of dealing with hydrocephalus. (1) Intradural drainage. This could be carried out through the lateral angle of the anterior fontanelle, or the descending cornu of the lateral ventricle on the right side might be opened by the ingenious method of Keen. A fine tube, bent at a right angle, made of gold and iridium, or of pure platinum, should be used. (2) Ligature of both carotids. The secretion of fluid might be lessened by ligature of one or both common carotid arteries. This could safely be done in hydrocephalic infants, in whom the blood supply to the brain stem was of much more relative importance than that to the cerebral substance and the choroid plexus. He had had successful cases by both these methods.

Tuberculous Meningitis.—He had published a case in which the removal of tuberculous disease of the temporal bone cured commencing infection of the meninges, as evidenced by headache, vomiting and squint. He was convinced that the treatment of intracranial disease had been too long encrusted with conventionality. Cases of brain disease requiring surgical relief were numerous and widely distributed, but those who operated on them, especially on brain tumors, were few and far between. Not so long ago the same was true of acute abdominal diseases, but now the surgery of acute abdominal disease was successfully practised by the great body of surgeons. Until this stage in the history of brain tumors had been reached many remediable cases must go unrelieved.

A Year's Experience in Intestinal Surgery.—Dr. John B. Deaver of Philadelphia, Pa., said the forty patients whose cases formed the text of his remarks were operated on at the German Hospital and the Children's Hospital of the Mary J. Drexel Home since January 1, 1905. These cases comprised twelve simple enteroenterostomies; eleven intestinal resections, with enteroenterostomy; one enterotomy; two colostomies; seven enterorraphies for various forms of fecal fistula; one suture of a typhoid perforation; one reduction by manipulation of an intussusception; and eight instances in which strangulating bands or adhesions were divided, besides three other (atypical) operations—a total of forty-six operations on forty patients. There were 13 cases of intestinal carcinoma, all in the large bowel. The cecum was dissected in four cases, the hepatic flexure of the colon in two, and there was one case each in which the part affected was the transverse colon, the splenic flexure of the colon, and the rectum; while there were four patients in whom the sigmoid was the seat of malignant disease. Five of these thirteen patients died—those patients in whom the splenic flexure and the rectum were involved; one of those with the cecum affected, and two of those in whom the sigmoid flexure was diseased. The remaining eight patients recovered from the primary operation, and were relieved temporarily, but of the four successful cases in which the patients were seen sufficiently early for a radical operation to be done, two developed symptoms of recurrence about eight months later, and were again temporarily relieved by further operation, and in the case of two others, on whom a radical operation was done, sufficient time had not elapsed since the operation to permit of their being considered in this connection.

Treatment of Congenital Dislocation of the Hip.—Dr. E. H. Bradford of Boston said that in a large number of cases of congenital dislocation of the hip complete cure could be accomplished by manipulative reduction. In difficult cases efficient mechanical reduction was of assistance. In certain cases, owing to a distorted capsule, the femoral head was not placed deep in the acetabulum or was kept

from the bottom of the acetabulum by a capsular fold and relapse took place. Under these circumstances the surgeon could by incision of the capsule widen the capsular constriction, place the capsular flaps around the head and neck, secure the head of the femur until cicatrization had formed a retaining capsule about the reduced head. The operation was a somewhat difficult one and was easily imperfectly done. It was a serious one, but was capable of giving most satisfactory results in cases where failure or imperfect result was otherwise inevitable. It was manifest that in a relaxed capsule much depended on the after-treatment. If the capsule was loose, the head would drop out if not held in place until the tissues had become reformed, so that they held the head firmly. A certain number of relapses were due to this. From the experience at the Boston Children's Hospital it appeared that the position of the limb after reduction and the after-treatment depended largely upon the anatomical condition of the joint and whether there was a strong projecting acetabular lip. Within this was a zona orbicularis, and precise rules could not be laid down further than that the head should be placed well in the socket and kept there until it was firm in its improved position and not kept long enough in a distorted position for the tissues to become too stiff or non-elastic. If the head was not properly reduced, it was inadvisable in the hope of benefit from delay to postpone attempts at other measures of relief, *i.e.* incision or a repeated manipulation.

The Open Treatment of Fractures.—Dr. Edward Martin of Philadelphia said that the wounds necessitated by the open treatment of fracture were more prone to suppurate than were those made in the performance of other operations. This partly because foreign bodies, often of considerable size, were buried in the wound, but mainly because as a result of prolonged manipulation and rough handling and the use of tools ill-adapted to the purpose there was left at the end of operation a large amount of tissue so hopelessly devitalized that an abundant culture material was provided for even the slight infection which inevitably took place during the course of the most carefully conducted operation. Of the many ingenious devices employed for permanently fixing broken bone ends in their proper relation to each other, chromicized catgut, wire, screws, and silver plates were the most serviceable. If the surgeon could be assured of a perfectly sterile No. 3 catgut so largely deprived of chromic acid as not to prove irritating to the tissues, this would be the material of choice in all cases where suture or encircling ligature was applicable. Screws were extremely serviceable in that they represented foreign bodies of moderate size, were readily applied and would often hold bones in perfect apposition. They were especially applicable to the repair of oblique fractures of long bones. In fractures of the extremities of these bones the cancellous tissue gave a grip so feeble as to make their use of little service unless driven through and through. The proper application of a screw implied the selection of an almost cylindrical instrument with a deep thread cut clear to the head, and of such length as to pass completely through the bone at right angles to the line of fracture, but not beyond. Screws selected from the carpenter's tool box and the majority of those sold by surgical instrument makers were ill-adapted to the purposes of bone surgery, since the thread was lacking where it was most useful and the pronounced conical shape greatly and uselessly increased the difficulty of driving the screw home. The silver plate found its most useful application in transverse fractures. Its proper fitting was made easy by the use of grasping instruments which not only held the two bones in accurate apposition one with the other, but also secured the plate firmly in place while the holes were being bored and the screws applied. The starting of the screws in the drill holes, particularly in the treatment of broken small bones, such as the ulna, clavicle or fibula, or when the fragments to be held in apposition lay at the bottom of a deep wound, was greatly facilitated by a screw driver which firmly held, in a jaw devised for the purpose, the screw until it was fixed in its drill hole. Such an instrument he exhibited. The open treatment of simple fracture should not be regarded as an emergency operation, and considering the fact that, for instance, nine out of every ten adults who sustained a fracture of the shaft of the femur exhibited as a result of conservative treatment permanent deformity and crippling, it would seem desirable to practice formal operation more frequently than is now done.

Some Experiences in the Operation of Thyroidectomy. Partial and Complete.—Dr. Francis J. Shepherd of Montreal said his first operation was in 1883. In the first twenty-five cases he operated upon he employed the method of Socin, viz., enucleation, but, meeting with two severe cases of secondary hemorrhage, he gave up this method in the larger tumors for excision. In speaking of the re lation of the recurrrent laryngeal nerve to this operation, he stated that only once in about one hundred operations had he wounded the laryngeal nerve. He mentioned that paralysis of one nerve due to pressure of the tumor was quite common, and in his experience it was on the side opposite to that of the largest development of the tumor. He dwelt on the importance of having the larynx examined before operation, for if one cord was found paralyzed the operator would necessarily be more careful of the other. The amount of hemorrhage during operation might be considerable and it was waste of time to try and secure the bleeding points, for the bleeding veins were very friable. In cases of free bleeding he rapidly turned out the whole tumor and secured the superior and inferior thyroid arteries. He had met with several cases of anomalous gland, where the upper cornua almost met behind, surrounding the trachea and esophagus, and one case where the gland grew between the trachea and esophagus. The indications for operation in simple goitre, the operator considered to be as follows: (1) Progressively increasing size of the tumor. (2) Rapid growth, with dyspnea. (3) Narrowing of the trachea. (4) Difficulty in swallowing. (5) Alteration of the voice. (6) Tachycardia and increasing nervousness. (7) Inconvenience and deformity, due to the size of the tumor. As regards anesthesia, Dr. Shepherd stated that he always used general anesthesia. He commenced with chloroform, then took up ether, and now used equal parts of ether and chloroform. So far he had had no death and no alarming symptoms. He thought the dangers from general anesthesia had been much exaggerated and that in a few years more thyroidectomies would be performed under general anesthesia than at present. He had operated in seven malignant cases, with one permanent recovery, and agreed with Bloodgood that where carcinoma infiltrated no cure followed extirpation. He had had no deaths in simple goiters, though he had had two following operation in exophthalmic goiter. In operating, Dr. Shepherd preferred the straight incision internal to the sternomastoid, and he tied the superior thyroid before turning out the gland; then the inferior thyroid and recurrent nerve were looked for and identified. After operation he used a drainage tube for twenty-four hours, sometimes if there had been much oozing he packed with iodoform gauze. High temperature occurred after operation in 60 to 80 per cent. He had seen only one case of myxedema following extirpation of the gland, and this was in a case of malignant disease. The dangers of operation were stated to be: Shock, hemorrhage, injury to the recurrent nerves, infection, pneumonia, heart failure, etc. In only one case had tracheotomy to be performed. As he intended reading another paper on the surgical treatment of exophthalmic goiter, this subject would not be considered.

A New Method of Utilization of the Sac in the Radical Cure of Hernia.—Dr. Roswell Park of Buffalo said the

method consisted simply in utilizing what was usually entirely dissected away, namely, the sac, and in making of it the suture material with which the canal itself was closed. Briefly, the procedure was as follows, especially with inguinal hernia: To isolate the sac, then to empty it, and to clean it of all superficial fat. It was thus separated from the cord and made to appear as a distinct separate structure up to the level of the internal ring. His usual procedure for many years had been to penetrate the abdominal aponeurosis at a point opposite the internal ring, with forceps made for the purpose with alligator jaw, although these were not at all essential. The forceps introduced through this opening was made to appear lower in the inguinal canal, and here to seize the sac and, in the act of withdrawal, pull it after it, and thus bring it out at the punctured point. Here he used to twist the sac, ligate the neck, and tack it in place with one or two chromicized sutures. He had now modified the procedure in such a way that instead of cutting off the sac outside the point where it was fastened, he utilized it as a band of suture material, with which a coarse but strong suture was made, binding together the lateral margins of the inguinal canal. The advantages of this method were: (1) It afforded almost as perfect and complete a method of closure of the inguinal canal as did any other. (2) It utilized a portion of this sac which would otherwise be quite discarded and substituted fresh animal suture of the patient's own tissue for foreign animal material, while, at the same time, under ordinary circumstances, its sterility might be guaranteed. (3) While he had not had opportunity to demonstrate the fact, he thought it fair to assume that such tissue so used did not disappear by absorption, as would tendon or other foreign material, but rather was organized and served as an additional means of strength and security, forming, as it were, a series of bridges or transverse fastenings by which the obliteration of the inguinal canal should be more securely attained. He had not yet been able to resort to this procedure in a large number of cases, but in those in which he had so far used it it had given very satisfactory results.

The Use of Thyroid Extract to Shorten the Coagulation Time of the Blood.—Dr. William J. Taylor of Philadelphia advised that it be used in cases of hemophiliacs where surgical operation was demanded, or where they had received any accidental wound, and also in patients whose blood had been altered by disease. He stated that normal blood was not affected in any way by the use of thyroid extract, even where its use had produced distinct constitutional effects; that it acted only upon blood which lacked fibrin ferment. He mentioned the fact that A. E. Wright had found that the coagulation time of the blood was lengthened by starvation and shortened immediately after a hearty meal, and the efficiency of the action of calcium chloride was increased by combining it with an albuminous substance, such as an aqueous extract of thymus, thyroid, testicle, gastric, and other mucous membrane. He cited three cases of bleeders in which thyroid extract was used with marked benefit, and mentioned one instance in which it was used in a case of profound jaundice due to obstruction of the hepatic duct. He recommended that in all cases of suspected or probably delayed coagulation time that the blood should be carefully tested, and that the dried thyroid extract should be given in three grain doses in capsules three times a day, and stated also that it had been used with very great effect in several cases of purpura with spongy and bleeding gums, occurring during the course of typhoid fever.

Hyperplastic Tuberculosis of the Intestines and Peritoneum.—Dr. Charles B. Nancrede of Ann Arbor, Mich., put on record another instance of that rare manifestation of tuberculosis in the intestinal tract, the hyperplastic form, instances of which had been reported during the past fifteen or eighteen years. He gave a brief historical account of the cases reported by various authors. Treatment resolved itself into excision of the affected portion of the bowel. Doubtless fresh air, sunshine, tonics, and the ordinary measures addressed to the treatment of tuberculosis located elsewhere might serve as roborants and increase the peritoneal tissue resistance, as well as that of other parts, but no direct benefit could be expected, as was the case in certain instances of ordinary tuberculous peritonitis.

A Review of 1,500 Operations Upon the Gall-Bladder and Bile Passages, with Especial Reference to the Mortality.—Dr. William J. Mayo of Rochester, Minn., said the mortality in 1,500 operations was 4.4 per cent. In the last series of 500 it was 3.2 per cent. Every operated case dying in the hospital without regard to time or cause of death was counted as an operative mortality. Of operations for uncomplicated gallstone disease, the mortality, 1-3 of 1 per cent., was due to accidental causes. Complications the result of delay caused more than 9-10 of the death rate; 95 per cent. of all complications occurred in patients who had had marked evidences of gallstone disease and ample period of good health for safe operation. The now recognized necessity for early operation in appendicitis was due to the former high mortality attending secondary abdominal complications. The same reasons held good for early operation in gallstone disease, only it was involvement of liver ducts instead of peritoneum which gave fatal complications. Of 845 cholecystostomies, the mortality was 2.13 per cent. In the last series of 500, it was 1.47 per cent. Of 319 cholecystectomies, the mortality was 3.13 per cent. In the last series of 500 it was 1.62 per cent. The operation was indicated in all cases in which the gall-bladder had lost its function, especially in cystic duct obstructions and for malignant disease. It was a slightly more serious operation than cholecystostomy, but had a growing field of usefulness in all cases in which the gall-bladder was involved. Common duct operations, 207 cases. Group I—105 cases; 3 deaths; 2.9 per cent. Consisting of those cases having gallstones in the common duct, operated during the quiescent period; jaundice and infection moderate. Group II—61 cases; 10 deaths; 16 per cent.; in which there was active infection involving the ducts of the liver, and jaundice. Patients suffered from Charcot's fever (fever and ague type). Obstruction was severe, but not continually complete. Group III—29 cases; 10 deaths; 34 per cent. Complete obstruction of common duct in which no bile passes into the intestinal canal, elimination taking place by means of the kidneys and skin. Group IV—Malignant disease; 12 cases; 4 deaths; 33 1-3 per cent. Gallstone present in nearly all. Pancreas involved in 86 out of the 1,500 cases; 4 acute, with 2 deaths; 6 subacute, with 1 death; 9 cancer, with 5 deaths; 67 chronic, without marked effect on the mortality.

The Serum-Therapy of Tetanus.—Dr. C. A. Porter of Boston emphasized the rational use of serum in acute or severe subacute tetanus. While some of the details upon which it had been founded might subsequently require changing, such a consistent method of attacking tetanus toxins, resting in the main upon well-founded experiments, had the merits of simplicity. In carrying out this treatment one should picture to himself the toxins traveling along the motor nerves of the affected part, even upward toward the higher motor ganglia, and also by absorption through the lymphatics, entering the general blood current, to be brought directly to the central ganglia through the motor nerve endings of the rest of the skeletal muscles. Antitoxin, to be effective, must reach the poison before it had entered the motor tract, or must by direct injection into the tissues immunize them in anticipation of the arrival of the aftercoming toxin, or neutralize it locally before a stable compound had been formed. In the treatment he recommended the following: (1) Immediate intravenous and subcutaneous injections to neutralize the circulating toxin. (2) Immunizing or neutralizing injections at the

highest level which the severity of the symptoms appeared to justify; directly into the cord, as advocated by Rogers, or into the higher motor nerves, such as the hypoglossal and spinal accessory, as suggested by the author. (3) Peripheral intraneural injections as near to the cord as possible. Where amputation was indicated or allowed, there was positive experimental evidence that nerve section would isolate the toxins in the limb. (4) Lymphatic absorption would be diminished by the application of Bier's principle of passive hyperemia, or by circumcision of the limb. (5) Parenchymatous injections, especially into the muscles, might be of distinct value in addition to subcutaneous and intravenous injections. (6) If possible, the local focus should be thoroughly eradicated. (7) We had no right to neglect symptomatic treatment. (8) When once the disease had progressed beyond a certain stage, animal experimentation gave us no ground for hope that any treatment whatever could be successful.

The Treatment of Tetanus by Magnesium Sulphate.—Dr. Joseph A. Blake of New York said that from his experience in human tetanus intraspinal injections relieved spasm, so it must be inferred that they produced a block of nerve impulses by direct action on the nerve trunks. So far its employment in human tetanus had not been attended by uniform results. This might be due to different degrees of susceptibility on part of the patient, and partly by variations in technique, or lack of experience in the use of magnesium sulphate, on the part of the medical attendant. So far as he could ascertain, only four cases of tetanus had been treated with magnesium sulphate. Of this number only one recovered, and this was his own case. His case was one of acute tetanus in a boy of fifteen. The injections controlled the convulsions in this patient for periods varying from twenty-nine to thirty-seven hours each. His impression of this drug was that although we could not be certain of its effect, yet it was reasonably safe and offered a means of modifying the convulsions and relieving pain in a way no other drug had approached.

The Present Status of Our Knowledge of the Serum Therapy of Surgical Affections.—Dr. Charles A. Powers of Denver stated that while there were a vast number of contributions to this subject, but very few of them bore the test of rigorous analysis. The majority consisted of scattered cases of recovery from sepsis, a serum having been employed. Scientific details were lacking. He said that in his analysis he would be guided by the following principles: (1) Isolated reports of one or a few cases would be omitted. Most reports of this character emanated from physicians who, being perhaps unfamiliar with surgical diagnosis and operative management, chose the use of a serum when medical measures failed, and did not give their patients the benefit of ordinary surgical procedures. (2) As far as possible, dependence would be made on the testimony of surgeons, embodied in systematic writings on infections, where, under the head of treatment, serotherapy was compared with other measures and a verdict thereby rendered. (3) Scientific requirements should be fulfilled as far as possible. It should be shown in individual cases that a correct diagnosis had been made, and that the infection was a pure one. Further, the mere fact that a patient recovered was not sufficient for a demonstration. Further, given the special symptoms produced by a certain germ, it should be shown that the serum shortly after its administration favorably modified these symptoms so far as the latter could have been due directly to the specific toxemia or bacteriotoxemia of the disease. But few articles reached this standard, and analysis of these showed that at present serotherapy was valueless in sepsis other than that due to tetanus. Antistreptococcic serum had failed to gain a place in surgery. This sustained Vaughan's contention of two years ago. The serotherapy of tetanus had a place, but its exact value was as yet unknown. It seemed probable that while it failed to cure severe and advanced cases, it had effect in early and mild cases. As a prophylactic measure, it seemed to have achieved a standing, yet many fatal cases developed despite its early use. Further, it was never possible without bacteriological proof to say that tetanus would have developed in the cases in which it was used.

Bacteriological Studies in the Surgical Clinic.—Dr. Willis G. Macdonald of Albany, N. Y., spoke, first, of the necessity of constant cultural work, in order that the personnel of the clinic might be made alert and to feel a personal responsibility. Second, to establish consistent daily detail work, both in the wards and in the operating room, without constant criticism. Third, to be able to trace to its source occasional infection and remedy it before serious damage was done. Fourth, to establish the inefficiency of many plans recommended in medical literature which were essentially fallacious, as, for example, the fourfold gauze mask. There remained another and equally important function of surgical bacteriology, namely, its purely clinical and diagnostic value in tuberculosis, tetanus, actinomycosis, and other infectious processes.

Traumatic, Gastric and Duodenal Ulcer, Due to a Direct Blow, Revealed by Operation.—Dr. A. F. Jonas of Omaha said the progress of cases of extensive contusions that occurred after severe blows to the stomach and intestines was rapid; death occurred early, unless prompt surgical aid was brought to bear. It was difficult to judge correctly in cases in which the injury had produced a contusion or laceration of a part of the gastric parietes, as, for instance, the mucosa, or where a hematoma had developed between the coats of the gastric wall, *i.e.* between the mucosa and muscularis.

The Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of the Pylorus.—Dr. Archibald MacLaren of St. Paul, Minn., said the question how we might distinguish between medical and surgical gastric ulcer was of the greatest importance to the medical world to-day. It was known that some ulcers cured themselves, and that many gave no symptoms. Shattuck said: "There are only two conditions occurring in gastric ulcer which demand operation: (1) Perforation; (2) obstruction." He agreed with him in the necessity of operating in these two classes. In perforation due to an acute ulcer, if the opening could be closed, the wound sponged or irrigated, a large-sized suprapubic drain put in soon after operation, a large percentage would recover, with the aid of Fowler's position. In obstruction cases the condition was mechanical, and demanded mechanical relief. One other class should be added to this list, *i.e.* relapsing gastric ulcer; the ordinary medical treatment was useless in these cases; proper medical treatment was putting the patient to bed, taking away all food by mouth for some days, supplying water and nourishment by rectum. He reported two cases lately seen of congenital obstruction, one dying after gastroenterostomy, the other without operation. Gastroenterostomy was the most popular; the posterior no-loop operation, last described by Mayo, was the best operation. The anterior long-loop operation was followed by a relapse, due to dragging of the loop on the anterior suture line, producing contraction of the opening. Now that the anterior operation had given place to the posterior no-loop operation, we did not hear so frequently of the necessity of closing the pylorus.

Early Operations for Cerebral Hemorrhages of Childhood.—Dr. Charles H. Frazier of Philadelphia said that in order to put on a rational basis the surgical treatment of epilepsy, greater discrimination must be made in the selection of cases. No opportunity should be lost in operations upon epileptic subjects to observe as closely as possible the existing pathological conditions. A more intimate knowledge of the pathology of the disease was necessary for the establishment of a basis upon which to determine the propriety of operative intervention and the character of the same. Epilepsy developed sooner or later in from 30

to 50 per cent. of cases of infantile hemiplegia. In many of these the lesion had been proven by autopsies to have been a hemorrhage, and in children the hemorrhage was often either on or near the cortex, rather than intracerebral, as in adults. The tendency toward secondary degenerative changes, such as atrophy, and softening, the greater disposition in epileptic subjects toward mental defects, especially idiocy, and the otherwise hopeless nature of the disease, constituted the principal arguments for surgical intervention.

Intussusception.—Dr. Ellsworth Eliot of New York contributed a paper on acute intussusception in infants and young children, in which he reported seven cases, with four recoveries, and three deaths.

Pulsating Exophthalmos; Ligature of Common Carotid, External Carotid, and Superior Thyroid Arteries.—Dr. Joseph Ransohoff of Cincinnati presented a case of this nature. The patient was twenty-one years of age, and after an injury to the temple had paralysis of the outer rectus and a pulsating exophthalmos. The pulsating exophthalmos did not come on until about four weeks after the injury was sustained. It was not known how long the paralysis of the abducens had continued. There was intense chemosis of the ocular conjunctiva, which threatened to produce ulceration of the cornea. There was no pain, but great distress produced by the ringing and buzzing noises in the head. The case was treated by tying the common carotid, external carotid, and superior thyroid arteries. This extensive operation was done through one incision and was made in order to prevent as far as possible the establishment of an anastomotic circulation too early. Three months after the operation the patient continued well, without return of pulse in the facial or temporal artery. The abducens paralysis persisted. The author had collected twenty-one recent cases in which the tying of the common carotid artery resulted in fourteen cases.

Medico-Military Notes in Manchuria.— Colonel John Van R. Hoff, U. S. Army, said that the remarkable sanitary results achieved by the belligerents in Manchuria had taught the world: (1) That there was no legitimate reason why in war the mortality from disease should exceed that from trauma. (2) That the extraordinarily large excess of deaths from battle injuries over those from disease, obtained for the first time in history, was directly due to the observance of well-established hygienic rules, proper sanitary organization, sufficient personnel, and adequate material, not to mention persistent fighting. (3) That so far as known to the writer, this war had developed nothing new in medical treatment or surgical technique; its one lesson for us was summed up in a single word, *prevention*. The Russian hospital records in the Far East to September 1, 1905, not including Port Arthur, account for 352,412 cases, of which 8,983 died in the theater of war, 24,255 were discharged for disability, 120,394 recovered, and 25,135 remained under treatment. The deaths from disease, at home and abroad, totaled 18,830, from wounds in hospital 3,541, killed on the field 19,467, missing 39,729. A very large proportion of, if not all, the "missing" probably died on the battlefield, and if so counted would give 3.3 killed to 1 dead of disease.

Cerrebellar Hemorrhage.—Mr. Hamilton A. Ballance of Norwich, England, reported a case of traumatic hemorrhage into the left lateral lobe of the cerebellum, treated by operation and followed by recovery of the patient.

Officers.—The following officers were elected: *President,* Dr. Dudley P. Allen of Cleveland, Ohio; *Vice-Presidents,* Drs. Thomas W. Huntington of San Francisco, Cal., and A. F. Jonas of Omaha, Neb.; *Secretary,* Dr. Robert G. Le Conte of Philadelphia, Pa.; *Recorder,* Dr. Richard H. Harte of Philadelphia; *Treasurer,* Dr. Chas. A. Powers of Denver, Col.

Place of next meeting, Washington, D. C., in conjunction with the Congress of Physicians and Surgeons, 1907.

Medical Items.

Treatment of Infantile Umbilical Hernia.—Steinhel refers to several leading authorities who do not believe in the radical cure for infantile umbilical hernia. Segond advances as an argument against operation in these cases the fact that in pigs and cattle, which are commonly subject to umbilical hernia, recovery is the rule. The writer then refers to various methods which have been employed in the treatment of this affection. Compression is applied in various ways. Some physicians use a layer of collodion over the tumor. Others employ a convex object for retaining the hernia in place. Again a tampon of cotton wool is used by others. The writer has collected thirty-five observations of radical cure of infantile hernia from the reports of Broca. The permanent results are known in a number of these cases; in twenty-two of them there has been no recurrence for a varying number of years. As a rule the scar is almost imperceptible. Rogier had nineteen recoveries and three recurrences in the case of twenty-two children. Estor had nineteen recoveries and one recurrence in twenty cases.—*Journal de Médecine de Paris.*

Wounds of the Heart and Great Vessels.—Biondi records nineteen cases of wounds of the heart and great vessels observed by him. In wounds of the cavity of the right heart or pulmonary artery death is not so sudden that voluntary acts may not precede it. In wounds of the left heart death is so sudden that the wounded man falls unconscious where he stands from rapid hemorrhage. The same is the case in wounds of the aorta. In hemopericardium death is more or less rapid, according to the size of the wound, and in most cases the patient remains conscious. Wound of an important branch of the coronary artery contributes to the lowering of arterial pressure. Lesions of the nerves and ganglia of the heart seems to have no great weight in determining the symptomatology of these wounds, the main factor being severe hemorrhage. —*La Riforma Medica,* May 12, 1906.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service for the week ending August 10, 1906:

SMALLPOX—UNITED STATES.

		CASES	DEATHS.
Florida, Duval County	July 28–Aug. 4	1	..
Escambia County	July 28–Aug. 4	1	..
Illinois, Galesburg	July 21–28	3	..
Louisiana, New Orleans	July 21–28	12	..
Maine, Blaine	July 30	..	Present.
Mars Hill	July 30	..	Present.
North Carolina, General	June 1–30	172	..
North Dakota, General	May 1–31	24	..
	June 1–30	36	..
Ohio, East Liverpool	July 1–31	2	.
Oklahoma, Oklahoma City	July 21–Aug. 4	3	.
Tennessee, Knoxville	July 21–28	1	.
Memphis	July 28–Aug. 4	1	
Wisconsin, Appleton	July 21–28	3	

SMALLPOX —FOREIGN.

Africa, Cape Town	June 23–30	2	..
Chile, Antofagasta	June 10–24	27	9
Iquique	July 7	..	Present.
Gibraltar	July 8–22	2	..
Great Britain, Hull	July 7–14	..	1
India, Calcutta	June 16–23	..	8
Karachi	June 24–July 1	2	1
Madras	June 23–29	..	2
Rangoon	June 16–23	.	5
Nicaragua, Bluefields	Aug. 6	1	.
Panama, Colon	July 18–21	5	.
Russia, Odessa	July 7–14	9	.
Siberia, Vladivostok	June 10–14	2	.
Spain, Barcelona	July 10–20	.	12

YELLOW FEVER.

Cuba, Matanzas Province	Aug. 2	..	1
Mexico, Vera Cruz	July 21–28	1	1

CHOLERA—INSULAR.

Philippine Islands, Manila	June 9–23	23	17
Provinces	June 9–23	100	58

CHOLERA—FOREIGN.

India, Calcutta	June 16–23	.	31
Madras	June 23–29	.	8
Rangoon	June 16–23	.	2

PLAGUE—INSULAR.

Hawaii, Honolulu	Aug. 7	.	1

PLAGUE—FOREIGN.

Australia, Brisbane	July 9	1	..
Fremantle	May 27–July 9	2	1
Sidney	June 9–16	1	
Chile, Antofagasta	June 10–24	10	
India, General	June 16–23	1130	..
Calcutta	June 16–23	.	
Karachi	June 24–July 1	.	
Rangoon	June 16–23	.	

Medical Record

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Original Articles.

FUNCTIONAL DERANGEMENT OF THE EARS AND UPPER AIR TRACT IN THE INSANE.*

By W. SOHIER BRYANT, A.M., M.D.,

NEW YORK.

The following observations were undertaken for the purpose of showing the relation, if any there might be, between insanity and functional derangement of the ear and upper air tract. In order to err on the conservative side, when there was doubt in the results of an observation, it was classified as normal, thus giving the weakest possible showing for the relationship of ear disease, tinnitus, and hallucinations of hearing.

One hundred and sixty-one patients were examined at the Manhattan Hospital. Most of these cases were chosen on account of their hallucinations of hearing. The rest were taken by accident, without any special plan. The observations that could not be made accurately have been classified as normal. The psychiatric classification is as follows: Dementia præcox 63, paranoia 20, dementia paralytica 20, alcoholic insanity 19, mania depressens 16, senile dementia 14, epileptic insanity 6, various 3.

The ear classification is as follows: Otitis media catarrhalis 71, otitis media purulenta (active or cicatrized) 38, foreign bodies 14, labyrinthine or nerve disease 23. In 10 of these the diagnosis was definitely established; in 13 the diagnosis was not positively differentiated from adhesive processes in the middle ear. Among the 161 cases there were 15 with no ear disease.

Hallucinations of hearing, 134 cases.
- With ear disease, 120.
- No ear disease, 14.
  - With neither tinnitus nor ear disease, 9.
  - With tinnitus and no ear disease, 5.
- With tinnitus, 63.
- No tinnitus, 71.

No hallucinations of hearing, 27 cases.
- With ear disease, 25.
- No ear disease, 2.

Ear disease, 146 cases.

No ear disease, 15 cases.

A
- With tinnitus, 6.
  - With hallucinations of hearing, 5.
  - No hallucinations of hearing, 1.
- No tinnitus, 9.
  - With hallucinations of hearing, 8.
  - No hallucinations of hearing, 1.

B
- Hallucinations of hearing, 13.
  - Tinnitus, 5.
  - No tinnitus, 8.
- No hallucinations of hearing, 2.

*Read before the New York Neurological Society, May 6, 1906.

Tinnitus, 74 cases.
- With hallucinations, 63, 85 3-10 per cent.
- No hallucinations, 11.
  - (General paresis, 5.
  - Epileptic mania, 1.
  - Dementia præcox, 4.
  - Exhaustive psychosis, 1.)

No tinnitus, 87 cases.
- With hallucinations, 71.
- No hallucinations, 16.

(If the cases where hallucinations of hearing were not definitely established are classified with no hallucinations, the proportion is 51 to 36; 58 6-10 per cent.)

Only 3 cases out of 161 had perfectly normal hearing.

The nasopharyngeal conditions were as follows: Total or partial obstruction of the passage, 79; obstruction above lower turbinate, 15; hypertrophic conditions without obstruction, 37; atrophic conditions, 5; normal, 25. As might have been expected, the nasopharyngeal conditions were as bad as the aural conditions.

Our figures show that there were 134 cases with hallucinations of hearing, of which 120 had ear disease; that is, 89½ per cent. Among the 134 hallucination cases, there were 63 cases which had tinnitus, or 47 per cent. Of the total 161 cases, 74 had tinnitus, and of these latter, 63, or 85 3-10 per cent., had hallucinations of hearing. Of the total 87 cases without tinnitus, 51 had established hallucinations of hearing, or 58 6-10 per cent.

Case I.—Admitted May 2, 1905; a laborer, age eighteen, with no education; family history negative; diagnosis, dementia præcox; prognosis, poor. For five months previous to admission he had acted strangely and had refused to go out of the house. He said people stared at him. He slept poorly, and at times refused to speak. Upon admission he was depressed and morose, and exhibited mental deterioration. He had delusions of persecution and hallucinations of hearing. He had had no previous attack of insanity.

Examination May 3, 1905, showed otitis media catarrhalis chronica; hearing for right ear, 36/72; for left ear, 42/72. Mucopurulent secretions were abundant in the nasopharynx. The nose showed some atrophic rhinitis and purulent crusts on the right middle turbinate. The septum deviated to the left and there were a spur and synechia, and partial occlusion of the left side. He had ringing noises, mostly in the left ear. There was vertigo all the time, with tendency to fall forward, and frontal headache. The otorhinological prognosis was good.

The drainage of the left ethmoid, maxillary, and frontal sinuses was promoted by the intranasal removal of sufficient tissue. On the left, the passage was cut out to allow for free respiration and prevention of contact. The headaches ceased and the purulent discharge stopped. He became comparatively bright and interested in his affairs. The tinnitus has continued to a slight degree. February 7,

1906, the watch was heard by the right ear, 60/72; in left ear, 76/72.

March 17, 1906, there were no hallucinations of hearing. He still had ringing tinnitus in the right ear. There was no headache and no pus in the nose. He was paroled and a month later discharged.

Case II.—Admitted April 29, 1905; a tailor, fifty-six years old; intemperate; family history negative; diagnosis, terminal dementia; prognosis, unfavorable. He was depressed, quiet, and talked little English. He had insomnia, talked to himself, and had auditory hallucinations in his right ear. He made mistakes in the identity of persons. Orientation as to time appeared correct, but was poor for places. He had no insight. His physical condition was good.

Examination, May 3, 1905, there was slight chronic middle-ear catarrh. The hearing was very much reduced, in fact, nearly lost. No sound was heard by bone conduction. There were mucopurulent secretions in the nasopharynx. The occlusion of the left nostril, due to spur and enlarged turbinate, was complete. He had whistling tinnitus in his right ear and heard voices at night in the right ear.

May 17, 1905, the nose was free, the hearing much improved; for right ear, 1/144; for left ear, 3/72. He still had a little discomfort in the right ear. He had no tinnitus, nor hallucinations of hearing.

Case III.—Mania depressens. The patient was a young married woman who did not expect to survive her confinement. A few days after the confinement, an acute purulent inflammation of one middle ear developed, with severe mastoid symptoms. Her mind completely gave way with the dominant idea that she was to die and that there was nothing to live for. As the aural condition improved, her mental state gradually grew better.

Case IV.—Admitted May 2, 1905; a tailor, fifty-four fears old; diagnosis, paranoia; prognosis, bad. His mother, father, uncle, and two sisters were insane. He had not been right for twelve years previous to admission. He had attacks of depression and was unable to hold his position; he was confused, nervous, and slept poorly. Upon admission he was depressed and much worried. He had delusion of persecution and hallucinations of hearing.

May 3, examination showed otitis media catarrhalis chronica, which had been treated; hearing for watch, right ear, 9/72; left ear, 15/72; hearing by bone conduction much reduced. The nose was completely occluded by the enlargement of all four turbinates. He had "sizzing" tinnitus in both ears. It was worse at night and during a "cold." He was dizzy, nearly falling forward; had headaches and was confused. He was very hypochondriacal and imaginative. He heard voices in his head. There were no visual hallucinations. The otorhinological prognosis was good, the psychical prognosis poor. Later on, portions of the turbinates were removed until there was free breathing space and no intranasal contact. Strychinine, potassium iodide, and thyroid gland were given at different times. He was paroled April 10, 1906, with general and mental condition improved very much. His otic condition remained the same.

Case V.—Admitted July 6, 1905; twenty-four years old; excessive indulgence in alcohol; family history negative; diagnosis, dementia præcox; prognosis, poor. The patient showed an indifferent, inconsistent, and irrational reaction. He was subject to telepathic influences. There was orientation and partial insight. He had hallucinations both of hearing and sight. He had had no previous attack. On August 2, 1905, five large diptera larvæ had been removed from the left ear. The ear showed otitis media purulenta healed. The hallucinations of hearing were relieved.

Case VI.—Admitted January 2, 1906; an artist, thirty-nine years old; family history negative; diagnosis, general paresis. He had been admitted three times previously and discharged, improved. For the past month he had been quite restless and thought the hospital circulated stories about him. He also thought that his people were trying to poison him He refused to eat or sleep. He had no hallucinations. The hearing for the right ear was 4/72; for the left ear, 1/72. There were signs of middle ear involvement, as well as nerve deafness.

Case VII.—Admitted April 17, 1905; a boy, sixteen years old; family history negative; diagnosis, dementia præcox. Three weeks previous to admission he refused to speak and would sit quietly in a corner and laugh to himself. At times he became noisy and imagined that he was Christ and could talk to God, etc. Previous to this time he had had buzzing in both ears. He now had hallucinations of hearing and sight. June 16, 1905, hearing good, no tinnitus nor hallucinations; adenoids; no vertigo; occasional headache.

Case VIII.—Patient a female; domestic; married; infectious exhaustive psychosis; father insane; prognosis good; gave birth to a child three and one-half months ago. Since then she has had peculiar ideas, has been disinterested in everything, and imagined that she was to be killed. She drank ink and ate pins in order to die. The suicidal tendencies deepened. There was internal strabismus, with nystagmus. There were no hallucinations of hearing. There had been no previous attack of insanity. The present attack began six months ago. Both membrana tympani were much retracted. There was catarrh of the Eustachian tube. The mucosa of the upper air tract was dark-bluish. The middle turbinate was hypertrophied. There was lateral pharyngitis, with occasional tinnitus by day or night.

Case IX.—Admitted November 9, 1895; a man, thirty years old; cigarmaker; single; family history negative; prognosis unfavorable. He had no friends and no information concerning him could be obtained. He was silly and foolish in demeanor, with attacks of violence. He exhibited much mental deterioration; he was confused, and refused to speak. He took snuff. He had no hallucinations. There had been no previous attack. Examination, March 14, 1906; hypertrophied turbinates; otitis media catarrhalis chronica; watch heard in right ear, 30/72; left ear, 36/72. There was no tinnitus, vertigo, nor headache. There were no auditory hallucinations.

Case X.—A leather worker, twenty years old; family history, a sister who was peculiar; diagnosis, dementia præcox. For two years the patient had acted queerly; had been depressed, apathetic, and indifferent; laughed without cause; thought he had a disease of the stomach from eating food which had been cooked in unclean, rusty dishes. He had stigmata. The reflexes were exaggerated. No hallucinations were established. Seen July 26, 1905. Otitis media catarrhalis chronica; watch for right ear, 36/72; left ear, 30/72. There was granular pharyngitis. The lower turbinates were much enlarged. He sometimes had ringing tinnitus. There was no vertigo nor headache. He was discharged improved, September 30, 1905.

Aural disease seems to have, in some cases, an effect on the form of the psychosis by giving rise to hallucinations of hearing through the suggestions given by subjective sounds or tinnitus which are exaggerated by deafness (see table of cases). In a smaller number of cases, ear disease appears to be

an exciting cause of insanity because of its influence on psychic functions through its multitude of subjective symptoms as well as systemic infection. (Case No. 3.) Certain nasal disturbances seem to have some psychical effect through the not uncommon symptom of intranasal pressure; *i.e.* fullness of the head and aporexia. (Cases 1 and 4.)

Nasopharyngeal and aural diseases in their relation to insanity may be classified under five heads: 1. Nasopharyngeal and aural disease which has no relation to the coexistent psychical disturbances. (Case No. 9.) 2. Nasopharyngeal and aural disease consequent to insanity. (Case No. 8.) 3. a means of diagnosis, not infallible of course, yet Nasopharyngeal and aural disease due to the same cause as the coexistent insanity. (Some alcoholic and dementia paralytica cases, No. 6.) 4. Nasopharyngeal and aural disease a determining factor in the symptoms of the psychosis. (Cases Nos. 1, 2, 4, 5, and 7.) 5. Nasopharyngeal and aural disease the exciting cause of the insanity. (Case No. 3.)

Some of the cases of dementia præcox seen suggest that they may be influenced by nasopharyngeal disease alone, which causes aprosectic symptoms, with or without ear disease and hallucinations of hearing. (Case No. 1.) Or there may be ear disease causing hallucinations of hearing independent of nasopharyngeal disease. (Case No. 5.)

The number of cases we have observed is not large enough to prove any point conclusively, but they suggest what might have been expected, *a priori*, namely, that nasopharyngeal or aural diseases are much more prevalent among the insane than among normal individuals, and that sometimes hallucinations of hearing appear to be excited by subjective sensations of hearing, and that aprosectic psychosis is sometimes aggravated, if not excited, by intranasal pressure. They also suggest the possibility of improving a small number of cases by care and correction of their nasopharyngeal and aural defects.

The prognosis for psychical improvement from treatment of the nasopharynx in the cases where nasal complication is a disturbing factor, is good. (Cases No. 1, 2, 4, 7, and 8.) The prognosis is also good when active aural disease is a disturbing factor. (Cases 3 and 5.) The prognosis is bad where chronic inactive aural conditions are a disturbing factor. These cases are difficult to treat even with the cooperation of the patient. Without this cooperation they are still more difficult. Perhaps after more experience, some practical way will be developed for the care of similar cases.

The improvement among the 161 cases due to otorhinological treatment was only 3 7-10 per cent. Out of the selected cases, however, about 62 per cent. showed marked improvement, and the balance (38 per cent.) showed some improvement.

For bibliography and a few additional cases of successful aural treatment of auditory hallucinations on catarrhal middle ear inflammation, see my article, "Tinnitus Aurium and Hallucinations of Hearing," *Annals of Otology, Rhinology, and Laryngology*, St. Louis, September, 1905.

57 West Fifty-third Street.

An Unusual Indication for Cesarean Section.—Brunet had recourse to this operation in a case of severe hemorrhage from unusually large varicosities of the vagina. The bleeding could be controlled only by packing, and each time that the dressing was changed the hemorrhage endangered the patient's life. It therefore seemed inadvisable to permit delivery by the normal route, and cesarean section was followed by recovery of the mother and the delivery of a healthy child.—*Centralblatt für Gynäkologie.*

THE THERAPEUTIC VALUE OF ARTIFICIAL LOCALIZED HYPEREMIA IN THE TREATMENT OF AMBULATORY OR DISPENSARY CASES.

WITH A REVIEW OF THE PUBLISHED RESULTS AND A REPORT OF PERSONAL OBSERVATIONS.

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NEW YORK

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Since the startling publications of Bier and Klapp on the use of hyperemia in acute inflammatory conditions, in 1905, German medical literature has been flooded with papers on this subject. In other countries very little notice seems to have been taken of these most valuable and important contributions. It is with the hope of stimulating interest in this new and productive field that I have brought together in this paper the following data, based on the experience of myself and others. The bibliography that is appended will show at a glance the recent development of this branch of therapeutics, as well as the preponderant, if not exclusive, activity of Germans in this line of work. Moreover, a glance at the different titles of the published papers will give an idea of the wide use that already is being made of this therapeutic agent.

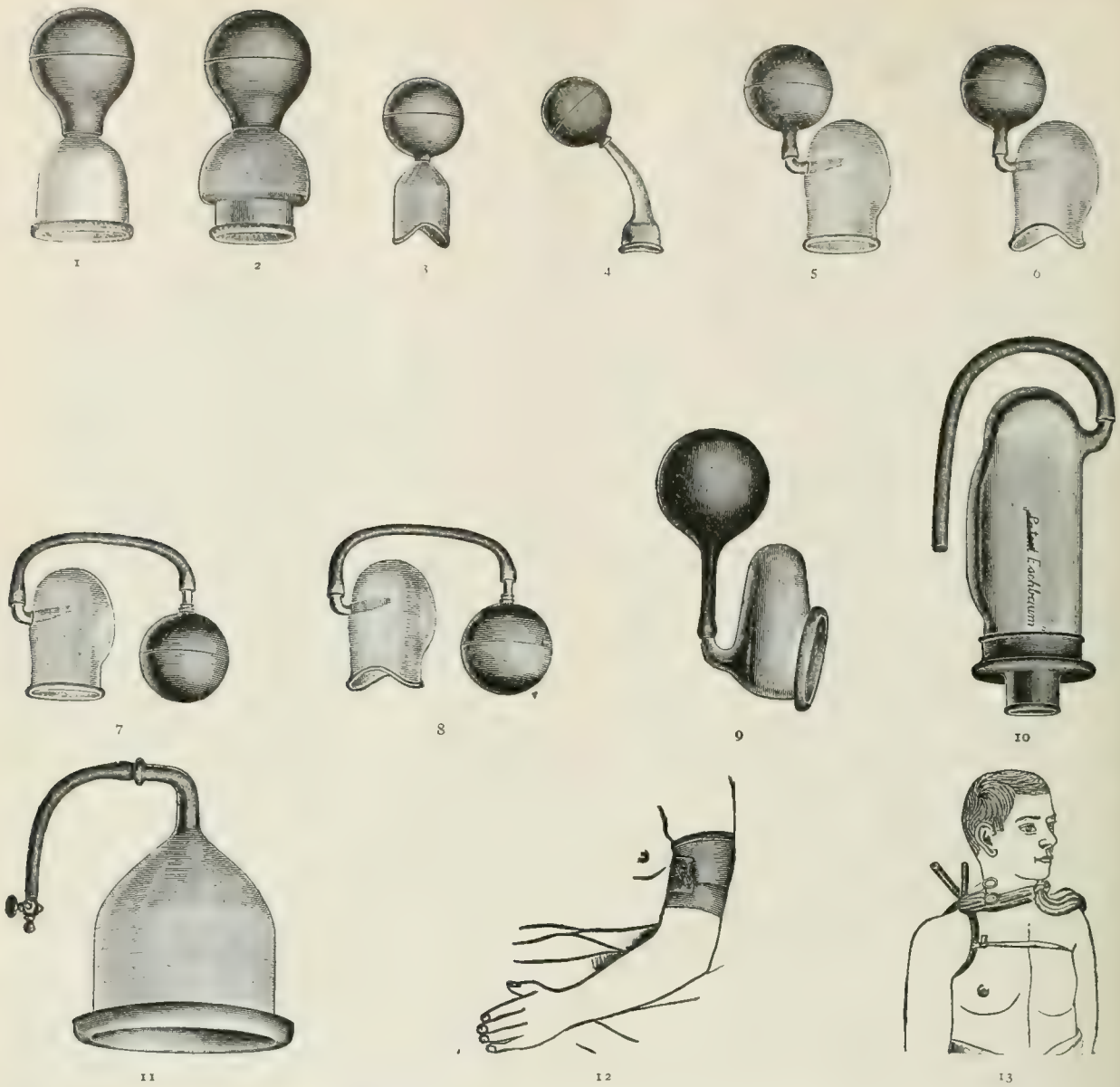
After careful and analytical study of inflammatory diseases Bier came to the conclusion that hyperemia is Nature's most efficient weapon in combating disease; that the antiphlogistic method of treatment, now so generally employed, interferes with Nature's efforts and is radically wrong. Starting from this premise, he saw that to assist Nature her processes must be imitated. In the attempts at imitating these a whole new system of treating inflammatory conditions has been developed by Bier, and the many successes of this new system are destined to raise it to an enviable position in the list of therapeutic agents. It scores victories where older methods fail. It often succeeds quickly and painlessly where older methods are slow and painful. It frequently leads to cures bloodlessly, while the older technique demands operative interference.

Believing as I do, that artificial localized hyperemia is a most important therapeutic agent, and that as years roll on it will be used more and more extensively, this review of published cases and of my own results needs no excuse.

The subject-matter of this article will be subdivided for sake of clearness. First, I shall describe the various methods of producing artificial localized hyperemia and the application of these methods in various diseases. Finally, I shall attempt to give some explanation of the workings of hyperemia in these conditions. The bibliography is appended for those who wish to acquaint themselves more intimately with the literature.

Most of the methods employed to induce a localized hyperemia are as old as the hills, and have, in fact, been used, without being properly understood, for ages in producing local or systemic effects. Bier has the credit of systematizing and of elaborating these older usages. In addition, he has explained practices which have been passed from generation to generation, so that what was purely empirical has now some scientific foundation.

There are two kinds of hyperemia, active or arterial, and passive or congestive or venous. The former Bier produces by the use of heated air. This type of hyperemia has been particularly useful in chronic rheumatic joints, and is well recognized as



1 2 3 4 5 6 7 8 9 10 11 12 13

* Various forms of apparatus for inducing localized hyperemia; 1-11, for suction hyperemia; 12 and 13, for constriction hyperemia.

an efficient agent. In the 150 odd cases, which underlie this report, I have not used this method at all, as it was not practicable in my services. The two methods employed by me may be named (1) *Hyperemia induced by Suction* (*Saug-Hyperemie*), and (2) *Hyperemia induced by Constriction* (*Stauungs-Hyperemie*).

In the former, for short called suction hyperemia, a mixed hyperemia is induced, though the venous element probably preponderates very early in the treatment. This form of hyperemia is produced by cupping the part to be treated. As Bier tells us, this method is as old as the human race, as cups of one sort or another have been used by the most primitive people; in fact, it seems to me coeval with the birth of the higher animals, for all animals induce this type of hyperemia, when they suck their wounds, which action so regularly prevents the infection from becoming a progressive one. Recently I had an opportunity to see this primitive form of suction used by a baby in combating a paronychia with beneficent effect.

The instruments required to induce this form of hyperemia are very simple, consisting of a glass vessel and some means of rarefying the air within the same. Bier has had a large assortment of cups made, which are particularly useful, being of different sizes and shapes, so as to adjust themselves readily to all surfaces of the body. Cups made after the designs of Bier and Klapp will be found in the American market before long.

I have reproduced in the illustrations the more essential types of the apparatus required to produce suction hyperemia, and as the pictures explain themselves I shall not describe them *in extenso*.

Figures 1 to 4 are simple cups made in various sizes and shapes to fit over flat and curved surfaces of the body. Suction is produced by compression of the attached rubber ball. These are the simplest of all appliances, and are, to all intents and purposes, nothing but dry cups. They are open to the objection that they cannot be kept sterile, as the pus and blood drawn out of treated abscesses, etc., will contaminate the interior of the ball, which in turn will not stand boiling for any length of time. Personally, I have employed this type of appliance more than any other, as it is cheaper, more readily obtainable, and just as effective as the other models.

The more elaborate appliances are pictured in Figures 5 to 8. They are so constructed that pus, etc., cannot run into the ball. The glass cup is separable from the ball and can be boiled. Figure 9

represents another type of cup, in which the glass reservoir is irregularly shaped, so as to allow of the collection of all pus and blood in the glass reservoir and prevent its entrance into the rubber ball. In Figure 2 a similar function is performed by the bulging of the glass cup a short distance from its rim. Figures 10 and 11 represent cups that are used in specific regions. These are made of ample size, and, instead of a ball pump, an aspirator of greater power is used. Figure 10 represents the cup used for fingers and Figure 11 represents that used for the female breast or large inflammatory areas. In addition to these simpler, and, on the whole, smaller instruments, Bier has very large suction apparatuses, which are so made as to surround large parts of the extremities, *e.g.* the whole hand, or arm, or knee joint, and the like. These I have not had occasion to use as yet. They are fully described in the second edition of Bier's book on hyperemia.

No matter which cup is used, one must avoid infecting one patient from the other. Apparently this does not seem a likely event, as in the many hundred applications I have made I have never encountered such an accident. Still that must be guarded against, and the only way to do so is by sterilizing the cups after use. If one uses the detachable apparatus the glass should be boiled; if one uses the nondetachable, old-fashioned cups, antiseptic solutions, friction, and occasional boiling must suffice.

In applying these cups to an inflamed part the two cardinal rules that must be adhered to are: (1) The procedure should not cause pain; (2) the suction should be intermittent. Both rules are easily followed. Excessive suction causes pain, consequently one must employ a lesser degree, the patient indicating by his sensations when the amount of suction is excessive. After a few trials that difficulty is overcome. Equally important is the second rule. The suction must be intermittent, otherwise it is of very little use. The cup is applied with or without greasing the rim and moderate (painless) suction is induced. The cup remains in place three or four minutes and is then removed for one or two minutes. After this it is reapplied, as at first, and after three or four minutes it is again removed for one or two minutes.

This process is repeated for from thirty to forty minutes. This may be called one treatment. In dispensary work one is able to give such a treatment daily, or every other day at most, depending on the arrangement of one's service; but in private work I have given two or three such treatments a day, as I have convinced myself that the more frequent use of the cups is decidedly beneficial. If this method is employed in the treatment of an abscess, a small incision is made in the center of the focus. Then a cup, of approximately the size of the area of inflammatory reaction, is selected and applied, painlessly and intermittently. After the suction is used for some time the patient frequently states that the pain inherent in the inflammatory focus is diminished or gone. As the suction continues blood and pus are drawn from the abscess cavity into the cup and the abscess is emptied. After the close of such a treatment the swelling of the parts is much greater than before, and the abscess cavity is overfilled with a blood clot which projects into the incision; the cavity thus filled with healthy clot requires no drain. It is evident that the suction produces a local edema about the focus, while it also produces a hyperemia of the granulations in the wall of the abscess cavity whence is derived the clot that fills the abscess cavity when the treatment is terminated.

This whole process naturally effects an early separation of dead from living tissues, with discharge of all pus and sloughs. At times such therapy succeeds in dispelling the focus even without incision of the abscess. In such cases the pus gives way to serum, as can be verified by the aspirating needle, and this in turn is also absorbed.

I shall illustrate the method and result of this treatment in the following cases, so that all those who wish to try it may have full details as to the simple technique:

Case I.—W. G. Diagnosis: Furuncles of neck and arm.

June 26: Tender inflammatory mass one and one-half inch in diameter on back of neck. Over center of this indurated area is a small opening (spontaneous) discharging pus. Cup applied intermittently and painlessly for (lack of time) fifteen or twenty minutes. Pus and blood drawn out of the cavity, marked swelling of tissues that have been cupped. Wet dressing applied. No drain.

June 28: After last treatment all pain disappeared. Great improvement in local condition. Practically no discharge. Signs of inflammation almost entirely gone. Suction hyperemia again as above for fifteen minutes. Wet dressing.

June 30: All signs of inflammation gone. Opening closed. Patient cured. Patient developed a larger abscess on his arm, which was first opened by a very small incision, and then treated as the abscess on his neck. This received fifteen minutes' suction hyperemia applied as above, then wet dressing and no drain. On next visit,

July 3: Almost all signs of inflammation on arm gone; incision is closed. Suction hyperemia for ten minutes.

July 5: Discharged cured.

Epicrisis: In this case two abscesses were treated painlessly and successfully. One was completely cured in four days without incision. The other in five days with a minute incision. No painful insertion of drains was resorted to, and the procedure itself acted as an analgesic.

Case II.—H. P. Diagnosis: Abscess of neck.

August 1, 1905: Patient has had tender, painful swelling on back of neck for past three or four weeks. About two and one-half weeks ago it began to discharge pus. At time of first treatment patient had an abscess about one and one-half inch in diameter just below hair margin on back of neck. It was discharging pus from a small opening. Whole area about abscess was tender, red, and swollen. Abscess fluctuating. After enlarging the opening to one-half inch suction hyperemia applied for twenty or twenty-five minutes. About one ounce of pus evacuated. Wet dressing.

August 3: Patient returned. Absolutely no local signs of inflammation, no pus; wound practically closed. Discharged.

These two cases are sufficient to illustrate both the methods and results of treatment of abscesses by means of suction hyperemia, and so far as the technique is concerned, I trust I have made that perfectly clear. It is not necessary to describe in detail all the cases that I have treated by this method, and to avoid discursiveness I have classified the ninety odd cases treated by artificial hyperemia induced by suction, so as to show at a glance in what diseases or conditions it is useful.

1. *Prophylaxis against infection*—eight cases. In the literature of our subject I find no mention of the use of suction hyperemia to prevent infection in incised and perforating wounds of the extremities. Its use in such cases is, perhaps, too self-evident to deserve much comment. I have found it particularly

efficacious in these cases, as it cleanses the wound, and, so to speak, produces a local immunization and a reaction before the infection has a chance to become active. Here we imitate the time-worn custom of sucking out wounds, but do it in an aseptic and cleanly manner. I have been almost invariably successful in this application of hyperemia. In just these cases the older therapy would counsel wet dressings and would fail to combat the incipient trouble, except in so far as the hyperemia induced by the wet dressings might prove effective. In this connection I must call attention to the fact that hyperemia will, in my opinion, prove a great blessing to the surgeon who injures his fingers during a septic operation. From what I have seen in my cases I feel sure that early use of this form of hyperemia will save many a surgeon weeks of pain and inactivity.

2. *Infected wounds and cellulitis of fingers or of hand*—twenty-six cases. In these conditions suction hyperemia works remarkably well. At times it succeeds in dispelling acute inflammatory foci without incision. Instead of cutting into the swollen and tender painful part and looking for a few drops of pus, one frequently succeeds in the early stages by using hyperemia in causing an absorption. In the latter stages a small incision followed by suction leads to rapid relief of all subjective symptoms, and to rapid subsidence of the inflammation without all the painful trials incident to the older method, of liberal incision and packing with gauze drains.

3. *Abscesses, furuncles, carbuncles**—thirty-five cases. Here we need not delay long, as in the cases cited *in extenso* above I believe I have clearly shown how effectively and how painlessly suction hyperemia leads to a rapid cure of the condition. There is, however, one type of abscess which has always given the surgeon concern; I refer to mammary abscess; and this deserves special notice. It is to the credit of Klapp to have shown that with the use of suction hyperemia the old mutilating radial incision of the breast may be dispensed with without any danger to the patient. In five cases of this kind I have verified his statements. By small incisions into the inflamed areas and subsequent suction, I have regularly avoided the unsightly as well as mutilating incisions that are still so generally used in suppurative mastitis, and at the same time have almost painlessly and rapidly obtained a complete cure.

4. *Acute suppurative adenitis*—six cases. Here, again, suction hyperemia scores a decided victory. After a small incision into the gland or glands which are suppurating three or four applications of suction hyperemia will almost regularly lead to a definite cure. In one such case, however, I failed absolutely. I could not cover the whole area of inflammation with my largest cup and the process extended to adjacent glands. This case was treated subsequently by the usual open method, very little being sacrificed by the trial of suction hyperemia. This case was very instructive to me, as it showed me that I should not attempt to control the more extensive inflammatory processes with cups unless I had cups of size adequate to encompass the inflamed area. Several other cases in which there existed a marked disproportion between the extent of the inflammatory area and the size of the cup testified to the uselessness of suction hyperemia when too small a cup was employed.

5. *Acute bursitis*—seven cases. Almost all of these cases were situated over the olecranon and presented the picture of a suppurative process. In two cases I opened the bursa by a small incision and several drams of pus were evacuated. All these cases responded in a gratifying way to artificial hyperemia. The blessings of this new and simple method of treatment were markedly accentuated by the simultaneous inspection of four cases of this disease, two treated by other surgeons and referred to us for dressing, and two treated by us by the above method. The freely incised patients with their long incisions surely had the worse of the applicable therapeutic measures.

6. *Contusions (black eyes, etc.)*. Contusions with extravasation of blood do not frequently demand treatment, but when they are visible and on exposed surfaces, as about the eye, any method of treatment that offers fairly quick relief is sure to be much used. My experience in treatment of contusions about the eye is limited to two "black eyes;" but the effect of the use of suction hyperemia was so striking that I cannot forbear saying a word or two about those cases. I applied my cup over the eyeball and over both lids simultaneously. Before I had ended one hyperemia treatment the dull, blue-black color of the extravasated blood had changed to a much lighter shade and the periphery of the contused area assumed a distinct yellow color. This treatment was continued three or four times daily for a few days, and by that time the induced hyperemia had thoroughly oxidized and absorbed most of the ecchymosed blood, so that at the end of the fourth or fifth day only a few very small areas remained as evidences of the patient's original condition. In other words, suction hyperemia causes an absorption of the extravasated blood two or three times as rapidly as the usual methods of treatment, which are, to say the least, tedious and unsatisfactory.

I have also employed suction hyperemia in more chronic conditions with some success. In six cases of sinuses in soft parts and in bones I was able to obtain an unusually rapid closure of the same after using suction hyperemia. In one case I was markedly successful. After one three-fourths-hour treatment of a sinus in the head of the tibia two inches deep (no exposed bone) the whole sinus closed, so that two days later there was no opening into the bone. (This has remained closed.) In chronic ulcers, in bed sores, suction hyperemia is at times of great benefit.

Before referring to other fields of usefulness of suction hyperemia I shall cite some of the published results along the lines above outlined, and subsequently mention some of the other conditions in which it has been successfully employed by others, though as yet I have not had opportunity to test it in these conditions.

Klapp, Bier's assistant, discusses very fully the usefulness of suction hyperemia in his paper of last year. He deserves the credit of establishing this method of producing hyperemia in inflammatory conditions, though Bier had employed it years ago. These earlier attempts were given up, however, because, owing to the fact that excessive suction had been employed, they were not greeted with success. Klapp, in his attempts to produce hyperemia in parts which were not amenable to the constriction method of producing hyperemia, seized upon the abandoned method and developed an entirely novel treatment for the greatest variety of conditions.

In Bier's clinic suction hyperemia has been used with success in over six hundred cases of furuncles, carbuncles, buboes, cold abscesses, acute abscesses, mastitis, infected wounds, cellulitis, phlegmons of the floor of the mouth, insect bites, panaritia, and

*Some authors have published bad results in diabetics.

paronychia. The good results above described were regularly obtained, sometimes after a small incision had been made, sometimes without any incision.

Arnsperger, v. Brunn, Colley, Danielsen, Frommer; Fischer, Herhold, Ranzi, Volk, Necker, and Stich report results similar to those published by Klapp and identical with those obtained in my series. The total number of cases treated by the different authors aggregates considerably over a thousand, and the universal praise bestowed on this method of treating the above conditions surely goes far to prove its efficacy and to establish it permanently in the position that Bier claims for it. All agree that by means of artificial (suction) hyperemia pain is diminished, cure is hastened, large incisions are done away with, and drains are not required. Bier has laid special stress on the importance of the last point in suppuration in tendon sheaths, where the use of drains almost regularly leads to sloughing of the tendon, while in cases treated by hyperemia, whether produced by suction or by constriction, the tendons are very often saved. The presence of the drain in these cases dries the tendon and leads to its death, whereas in the new method there is no drain to do damage, and the hyperemia has a decided nutritive effect.

The suggestiveness of Bier's idea has already led to results in other branches of medicine. In eczema Colley reports cures in chronic rebellious cases. The same author publishes a case of appendicitis abscess treated by suction hyperemia with success. This case is unique, and perhaps will remain so. Sonderman, Spiess, and Muck have been satisfied with their results in aural and nasal diseases. Prym, with special cups, has used suction hyperemia in follicular, in membranous, and in chronic recurrent tonsillitis with gratifying results, obtaining rapid subjective relief. In the field of gynecology this new agent has also been employed. Rudolph, Eversmann, Kroemer, and Colley report successes. Some have treated amenorrhea successfully, others have failed. There is some unanimity concerning its efficacy in chronic endometritis, chronic metritis, and perimetritis. Special cups are required for this method, provided suction is made per vaginam. Colley claims good results by producing the suction from the hypogastrium. He declares that such suction can be felt by the vaginal finger, as it draws the floor of the pelvis toward the cup.

Up to date experience along these specialistic lines is not sufficient to establish suction hyperemia in a definite zone of usefulness. In general surgery, I believe, however, we have gathered sufficient experience to demonstrate clearly that this method of producing hyperemia is essentially practical, and such hyperemia is preeminently useful in the treatment of the conditions previously enumerated.

In addition to the method just described, hyperemia may be produced by constriction. This is the method that Bier has studied for a great many years, and which in its latest application has caused a tremendous stir in German surgical circles. In employing this method the surgeon requires, as a rule, only a thin rubber (Martin) bandage. This bandage is applied proximally to the point that is to be treated, either directly to the skin or over a few layers of an ordinary soft bandage. If a marked degree of venous congestion is desired, the bandage is applied rather firmly; if, on the other hand, only a slight congestion is desired, the bandage is applied so that it exerts but little pressure. One can best learn how to apply the bandage by employing it on one's own arm first. If the bandage is wrapped about the limb snugly to produce a marked congestion, the limb within a few minutes shows signs of venous engorgement, it feels fuller, the veins stand out, and the skin becomes bluish. The pulse in the arteries must never be obliterated. Hyperemia of this marked degree is not borne with comfort for more than one hour. If, however, one desires a much milder venous hyperemia the bandage is applied less snugly and the parts show much less venous engorgement. Now the limb becomes instead of a deep blue, a bright red, with at times the slightest tinge of blue. A patient can wear such a bandage for the greater part of a day with perfect comfort. With both methods of application the parts become edematous, due to the impaired return of venous blood and lymph. In the latter method, however, the swelling is more marked. After removal of the bandage a reactive hyperemia, arterial in character, sets in. This is most marked after the production of a high degree of venous engorgement, and is the same familiar phenomenon that is so regularly seen after the removal of a tourniquet in the production of artificial anemia for operations on limbs. These two degrees of venous congestion, produced by the use of a simple rubber bandage, must be kept absolutely separate, as the hyperemias thus produced have special and very different usages. The marked venous engorgement is particularly valuable in more chronic conditions, whereas the milder degree of hyperemia is especially useful in acute conditions. Abroad the polyclinic or dispensary services are so arranged that both methods can be employed without any danger. In my services where the control of the patients is inadequate I have been forced to employ the first method of marked engorgement almost exclusively. As the bandage is left in place at longest only one hour the patient is continually under one's eye. The second method demands that the bandage should be in place for the greater part of the day and night, shifted, if possible, every ten hours to a new position to avoid excessive localized pressure and removed for three or four hours, after twenty hours' action, and then reapplied anew. Our dispensary conditions are such as to preclude a wide use of this method, for self-evident reasons, as we lack the proper control of our cases. To employ this method we must have the patient in perfect control, as it would be dangerous to allow a case treated in this way to go out of one's sight for a day or more. In private ambulatory cases this method is very practicable as well as in hospital cases. As yet my experience with this second method is too limited in ambulatory cases to allow of a final verdict, though my results are such as to convince me that Bier's remarkable claims for the efficacy of this mild hyperemia in combating acute infections are well founded. He and his assistants, as well as others, who have better control over their material, have employed both constriction methods very extensively and very successfully. I shall refer to their results later, after enumerating the conditions in which I have employed the constriction method which produces marked venous engorgement.

In Figures 12 and 13 the method employed is illustrated. The thin Martin bandage is perfectly adequate to produce hyperemia of all parts distal to the shoulder and to the hip joints. To produce hyperemia in the shoulder joint one must use a rubber tube and apply it as in Figure 13. There is as yet no method of producing venous hyperemia in the hip joint. To produce venous hyperemia in the head and neck a narrow rubber bandage applied about the neck has proven most useful. Bier employs for this purpose a special bandage, equipped

with hooks and eyes, which I know only from his description.

I have employed marked venous engorgement in a variety of conditions, in over fifty cases which required in all hundreds of applications. Just as in the use of suction hyperemia, in constriction hyperemia I have seen no bad effects. The almost uniform and startlingly excellent results of suction hyperemia in the diseases previously enumerated were not duplicated in this series. This form of hyperemia undoubtedly acted beneficially in most cases, but in view of the fact that so many of the conditions were chronic, it was difficult to form a correct estimate of just what was effected by this treatment.

In twenty-nine cases of *stiffness of joints* following severe old contusions, or multiple healed incisions of cellulitic areas, or fractures it was difficult to gauge justly how much was done by this treatment. Pains were almost regularly relieved and motion of the part was so improved that on the whole my impression was favorable. If the patients could have availed themselves of massage, passive exercise, baths, hot-air treatment, and the like, the results might have been just as rapidly obtained. In the poorer population limbs must be made useful as soon as possible. As yet we have no method of obtaining a rapid result in this class of patients, and until the poor have the advantages, if they are really advantages, that money can buy Bier's method of hyperemia, I think, will give more satisfaction than any other method. The bandage produces a marked diminution of pain in the affected parts and the patient with bandage *in situ* can work the parts and stretch the adhesions with much less discomfort and pain. At the same time the parts become edematous and more elastic, so that they give more readily under the exercises, and often behave as if they were better lubricated. While the bandage is in place the surgeon can frequently break up adhesions, which process otherwise would be excessively painful and well-nigh impossible.

The treatment thus outlined is practically a simple method of combining passive exercises and hyperemia. Those better placed in the social scale avail themselves of the more refined methods of producing hyperemia (massage, baths, hot air, etc.), but it still remains to be proven that these methods lead to a more rapid resolution than the simpler method which I have employed in dispensary practice. A combination of both the above methods might be of great value in hastening the result that patient and surgeon desire. Blecher and Sudeck have employed constriction hyperemia for similar cases and were gratified with their results. Habs reports successful results in such cases also. Luxembourg and Tillmanns recommend this method for treatment of these conditions. All in all these authors have the same impression as I obtained from my cases, and our experiences justify Bier's claims.

In chronic rheumatic joints, in gonorrheal pains about joints, and in other vague joint conditions which present no objective features it is often astonishing how rapidly the subjective symptoms are relieved. As Bier says, there is a whole group of conditions usually following trauma which present no diagnostic features and which baffle the surgeon in which hyperemia is marvelously successful. Such cases everybody sees, and they wander from surgeon to surgeon without relief. I have seen a whole series of such indeterminable conditions and have been fortunate enough to obtain relief by constriction hyperemia without in any way arriving at a diagnosis of the patient's condition.

The efficacy of hyperemia in chronic rheumatism is well recognized, and the hot-air treatment is almost routine. The use of the bandage to obtain the same effect is recommended by some, but on the whole at present the verdict cannot be rendered as to which method is the better. In gonorrheal joints opinions are still at variance. Hirsch only recently has reported good results, but thinks them no better than obtained by other methods of treatment.

In tuberculosis of bones and joints I have been very much pleased with my results. I have employed venous hyperemia by constriction method in six cases. All cases were nonoperable. Either the patient refused to be operated upon or the pulmonary involvement was such as to contraindicate such measures. Four cases were closed and two were open with many fistulæ. Of the former one was a very old process in the knee joint with marked deformity. The patient, an old man, could not sleep because of pain. His ankylosed knee gave him a great deal of trouble and pain so that he could not get around. He was treated by Bier's method at first one hour, later two treatments of one hour daily. Finally he was taught to apply the bandage himself, and told to report from time to time. Under this treatment all his subjective symptoms disappeared and he was able to sleep through the night. He was well pleased with the result. Whether the disease has been cured I cannot say. In three other knee cases venous hyperemia produced equally gratifying relief of all subjective symptoms. In two of these the effusion in the knee joint persisted, showing that the disease had not been eradicated. In the fourth case, as in the first, the bone was alone involved and there was no joint effusion. In the two open fistulous cases the results could be watched more objectively. In one, an extensive tarsal tuberculosis, the patient was practically chair ridden with sinuses running into the tarsus from the sole of his foot. He also was taught to use his bandage twice a day, and the treatment gave him much relief. When it was begun he could not walk on his foot, and within a month he was able to walk for from twenty to thirty minutes at a fairly lively gait. The sinuses became healthy in appearance, the discharge diminished very markedly, and some of the sinuses closed completely. At this stage he disappeared from observaation. His local condition was vastly improved, though there was no reason to believe there was a cure. All these cases were treated for a few months; none remained with us the nine months' period that Bier takes to be the average length of time to produce a cure by hyperemia.

My sixth case was one of carpal tuberculosis with dozens of fistulous tracts and enormous thickening about the wrist. The patient was a very old man, and, strange to say, did not respond at all to the treatment by venous hyperemia. He has been under observation for at least eight months, and has been treated carefully and systematically by us. In this case I noticed that after removal of the bandage no reactive arterial hyperemia developed. I wondered whether this, which evidently was due to his marked arterial disease, poor heart action, and old age weakness would explain the absolute inefficacy of Bier's treatment. Pains were still present in the wrist, and locally there was practically no objective improvement after seven weeks' treatment. To test my supposition I produced an artificial anemia by bandaging the whole arm from the finger tips to the elbow without exerting undue pressure at the focus of disease. This was removed after fifteen minutes,

and, to my surprise, a fair arterial reaction developed. This procedure was then carried on for several months, and during this time I noted a well-marked improvement. Many sinuses closed, and the rest assumed for the first time a healthy appearance, the thickening became less, the discharge diminished markedly, motion increased, and pain disappeared. After giving this a good test I went back to the first method, venous hyperemia, and again found it of no avail; the progress that had been made was gradually lost again in part. Finding no response to the usual method of treating these conditions, I again took up the method above described and recovered the ground we had lost. He is still under treatment, is not by any means cured, but there is no doubt of his very marked improvement.

This case I have gone into rather fully, as it goes to show that the arterial reaction after the removal of the rubber bandage is probably very useful in the treatment of tuberculosis of bones and joints. Here the simple venous engorgement had practically no effect, whereas the arterial hyperemia had a distinct effect. More cases bearing on this point must be studied before we can attempt to explain this peculiar and unique result.

Though a great deal of skepticism as to the efficacy of this method of treating tuberculosis of bones and joints exists, the many excellent results that have been published go to prove that much of the skepticism is unwarranted. As v. Eiselsberg recently said (in reply to Mosetig-Moorhof in a discussion of this whole subject, after the latter had declared that this treatment should not be countenanced because it will occasion an acute dissemination of the infectious agent which will produce a rapid progressive extension of the local disease, and at the same time a rapid invasion of the whole organism), hyperemia produces good results in tuberculosis of the hand, elbow, and tarsus, even if it does not cure in all cases. This he has seen in his own cases and in those treated by Bier on a recent visit to the latter's clinic in Bonn. Kocher, in another recent discussion of this subject, speaks favorably of this method of treatment, and emphasizes the fact that complete immobilization is not necessary if Bier's treatment is followed. Habs, after testing this method in two hundred cases, gives a favorable verdict. In closed tuberculous joints results in his series are frequently astonishingly rapid. Some cases developed abscesses which Bier long ago called attention to, but these closed after incision. In open tuberculous cases Habs' results were less good. Luxembourg reports twenty-three cases and claims for the treatment that the end results are movable joints, whereas immobilization leads so frequently to stiff joints. In seven of his cases he obtained a cure; eight were improved. In these pain and swelling diminished; the granulations became healthy and the sinuses closed: seven cases were still under treatment, and in one case he failed completely. Tillmanns, Henle (Mikulicz), and many others recognize venous hyperemia as an effective method of combating the type of tuberculosis under discussion.

So much for the opinions of others; now let us turn to Bier's own publications. The method employed in my series of cases is the method that Bier worked out after years of experimentation. During these years he used less simple and much less effective methods, and it is probably due to the repeated changes in his technique that many have looked on the whole matter with skepticism.

At present Bier considers the following as contraindications to the treatment by hyperemia: Beginning amyloid changes, severe pulmonary phthisis, large joint abscesses, and marked malposition of the affected parts (knee). Here he advises operation. All other cases should be treated conservatively by venous hyperemia plus iodoform injections in hydrops and in purulent joint cases.

The results obtained by Bier in cases treated recently by his present method speak for themselves and will be cited *in extenso*:

Carpal tuberculosis—seventeen cases, fifteen cures. Three cases with perfect mobility, twelve with adequately good mobility, despite extensive bone disease. In four of the seventeen cases there were sinuses. In five cases abscesses had to be opened during the treatment. In two severe cases the condition was improved. Average duration of treatment was twelve months.

Tarsal tuberculosis—thirteen cases, eight cures. In three normal mobility and in five good mobility. Of the cures four were sinus cases; three cases were improved, one case unimproved; one case later came to amputation. Of the original thirteen cases eight were sinus cases. Average duration of treatment, ten months.

Tarsal tuberculosis—thirteen cases, eight cures. Of these two with normal mobility, one was stiff in good position, two cases improved. Of the original five cases two were incipient cases and one had fistulæ. Eight other cases did not respond to hyperemia treatment and came to resection.

Shoulder-joint tuberculosis—one case, one cure with normal mobility. From this synopsis it is evident Bier operated in these forty-four cases only eight times, and that the knee joint gives the poorest results with this method of treatment. It is also evident that the functional end-results are excellent, even though the treatment is a prolonged and painstaking one. That the end-results are permanent in many cases Bier shows clearly by citing three cases treated fourteen and fifteen years ago, and which remained well. His recurrences after this method of treatment, he declared at the International Congress of Surgeons, were no more nor no less frequent than after other methods of treatment. He is beginning to employ Klapp's suction hyperemia apparatuses in the treatment of the fistulous cases to assist the constriction hyperemia by their more localized action.

In other bone conditions venous hyperemia has a beneficial effect. In chronic nontuberculous osteomyelitis it may frequently save the patient from repeated extensive and minor operative procedures: I have seen exposed apparently necrotic bone at bottom of long sinuses cover over and heal in under this plan of treatment, after the same effect had been sought in vain by repeated operations. It is well known that such sinuses leading to dead bone often persist after necrotomies, and here I see a special field of usefulness for venous hyperemia.

That hyperemia has a marked effect on bone has long been realized. Without understanding the condition Ambroise Paré employed hyperemia to increase callus formation. Dumreicher and Nicoladoni revived Paré's procedure to prevent the formation of pseudarthroses. Helferich in 1881 used the type of hyperemia under discussion for insufficient callus formation after fracture; also in insufficient involucrum production after bone necrosis. Thomas has made use of it to obtain firm union in fractures.

Venous hyperemia to stimulate the formation of callus is consequently an old and well-proven method of hastening a cure in a condition which Nature usually takes care of by herself. That pseudarthroses are a not too uncommon occurrence the many

methods to overcome the same show all too clearly. Of all the simpler methods, such as rubbing the ends of the bones together, local injections between and about the fracture of tincture of iodine, or blood, etc., the method by venous hyperemia is one of the best and most efficacious. In one case of delayed union that I treated by this method I was surprised to find a rapidly forming periosteal callus where previously there had been practically no periosteal callus production. In this case the medullary callus was not strong enough to prevent abnormal mobility, and the periosteal irritation produced by this method of treatment led to the formation of a firm, copious periosteal callus, though almost five months had elapsed between the injury and the beginning of the treatment by venous hyperemia. Others, in addition to the authors above mentioned, have obtained similar good results with this method, but the cases being isolated ones they have not been published. I, personally, know of two such cases.

In addition to the above conditions of the soft parts and bones, I employed this venous hyperemia in a variety of superficial conditions and in neuralgias. In the latter, as in those vague conditions mentioned above, it frequently relieved. In superficial ulcerative conditions the results were not particularly encouraging. Habs, however, following Ritter, reports good results in freezing injuries. In nine cases he obtained rapid, painless cure.

That will give a fair idea of the conditions in which venous hyperemia produced by a firm application of the rubber bandage may be used with success. As will be seen, they are almost all chronic or subacute conditions. Last year Bier advocated the use of a "fiery red" hyperemia produced by a light application of the rubber bandage in the treatment of acute inflammatory conditions. Considerable practice is required to apply the bandage properly in these cases. To make this paper more complete I must refer briefly to this type of constriction hyperemia, as it seems destined to occupy an important place as a therapeutic agent in inflammatory cases that we can absolutely control. As I said above, this method demands mild congestion, a fiery red edema (with at times a blue tinge to the part), and many hours' continuous use.

Hardly a year has elapsed since Bier announced this method of treating acute inflammatory conditions. That the method is effective in such conditions the voluminous literature testifies, though the foundations are still not perfectly secure, nor are the limitations of the method as yet clear. Bier's original report was based on 110 acute and subacute suppurative processes. The bandage was so applied as to produce a fiery red edema. It remained in place ten hours in mild cases, twenty to twenty-two hours in severer cases. It must never cause pain. Between treatments the part is elevated to allow of the subsidence of the edema. Then, if necessary, a fresh treatment is instituted.

This method of treatment leads to rapid separation of unhealthy and dead structures from healthy. It preserves tissues which usually necrose, *e.g.* tendons. It causes absorption without pus formation in some cases; in others it converts hot into cold abscesses. At times it leads to pus absorption without incision. It relieves pain rapidly. Such are a few of the main observations Bier has made in cases of cellulitis, of joint infection, of acute osteomyelitis, and of tendon-sheath phlegmons.

The part involved in disease is moved passively to preserve the proper function and at the same time to squeeze pus out of the incisions or spontaneous (nondrained) openings. Bier adheres to the old doctrine of *ubi pus ibi evacuo,* but by means of venous hyperemia he is able to dispense with liberal incisions and gauze or tube drainage.

V. Brunn, Colley, Derlin, Herhold, Habs, Lossen, and Stich have reported their results with this form of hyperemia, which are, on the whole, favorable and in agreement with Bier's claims. Others have already elaborated the use of this type of hyperemia. Thus Keppler, Heine, and Stenger have employed it in acute otitis media and acute mastoiditis. In both the results have been decidedly encouraging and most surprising. Keppler has cured a whole series of cases that usually undergo an extensive operation. Hochhaus has applied this type of hyperemia to the throat, reporting good results in twenty-five cases of diphtheria. Renner has applied it in various eye diseases.

As will be seen, all these cases are of a much more acute type than those described in my series, and it is questionable whether they all should not be treated primarily in a hospital. In this country it will probably never be possible to treat cases of this gravity as they are treated abroad, and as long as dispensary cases are not amenable to this form of treatment I shall refrain from going into any further details along this particular line, keeping my experience in hospital and bed patients for some future time.

Having thus touched upon the three most important methods of producing passive congestion, a few words of attempted explanation of the phenomena above described are indicated. Bier originally used hyperemia in the treatment of surgical tuberculous conditions, and he was led to do so by the following observations made by clinicians and pathologists. Farre, Travers, Louis, Lebert, Eymann, and Frerichs had demonstrated that patients with stenosis of the pulmonary artery almost regularly developed a progressive pulmonary tuberculosis. As pulmonary stenosis leads to anemia of the lungs, it might be inferred that the anemia had a definite relation to the tuberculous invasion. Rokitansky's observations made this inference seem more than likely. He found in 143 cases of cardiac hypertrophy only fifteen instances of pulmonary tuberculosis, and in these fifteen cases the condition in the lungs was inactive, *i.e.* healed. Subsequent statistics based on autopsy reports did not wholly substantiate Rokitansky's publication. Still the fact that cases which clinically showed well-marked signs of valvular disease were relatively immune to pulmonary tuberculosis has gained general credence.

The apparent contradiction between the pathologists' and the clinicians' views is due to the fact that the former includes many cases under the title of valvular disease that the clinician does not recognize. Thus the term has a much broader application in pathological parlance. Naturally cases that present no clinical picture of valvular disease will not lead to congestion of the lungs, whereas those cases that are clinically recognizable will lead to such congestion. This congestion of the lungs, which occurs as well in spinal deformities as in valvular disease, Bier thought prevented the development of tuberculosis in the lungs, and in his application of this idea to surgical tuberculosis the whole edifice above considered was built up.

The simple observations that the congested lung of heart disease almost regularly excludes the development of tuberculosis in the lung is, however, far from an explanation of the process whereby the lung is rendered, so to speak, immune. From the facts previously described, in the first part of this paper, it is evident that artificially produced conges-

tion has a decidedly beneficial effect in a great variety of conditions in addition to its action in tuberculosis. Some explanation of this action has been given us by a series of careful experimentors and observers, chief among them being Bier, Ritter, Hamburger, Hofmann, Noetzel, Heller, Heile, Joseph, Penzo, and Rautenberg.

The results of all this work are so far-reaching and so important, so full of surprises to all those who still cling to the older conceptions of inflammatory processes, that I feel inclined to enter into this whole subject very fully, especially as our literature has taken very little note of these investigations. But lest this paper become too long and the practical part of it suffer, I shall present the results very briefly without going into the details of the work of the different investigators.

Two facts observed in the cases treated by hyperemia urgently demand an explanation. Why does congestion relieve pain? Why does this congestion prevent the progress of the disease or relieve the results of a previous disease?

We are accustomed to look upon the congestion as a harmful process. To diminish it we use antiphlogistic measures. Elevation of the part, application of cold, etc., are routine procedures. Now, Bier advises the opposite, and the results of such therapy prove how wrong our previous methods were. We are accustomed to look upon pain as the result of the hyperemia and of the swelling of the parts involved. Now, Bier shows us that this is an incorrect conclusion, as artificially produced hyperemia and edema relieve pain. It has become more and more evident that pain in these inflammatory conditions is the result of irritation of the peripheral nerves by concentrated exudates. Artificially produced edema diminishes this concentration, and, in addition, acts apparently similarly to Schleich's infiltration. Bier and Ritter have paid particular attention to the relation that obtains between pain and swelling. Both come to the conclusion that pain lets up as soon as swelling sets in, both in inflammatory and in traumatic conditions. All experiences with artificially produced hyperemia, whether venous or arterial, agree in this decided influence on pain, and it would seem that Ritter's explanation of this phenomenon is the most plausible.

The most important action, however, is the antibacterial. Hamburger lays particular emphasis on the fact that in the treated part there is an increase in alkalies and in carbonic acid both in the blood and in the lymph (of the edema). Both of these act as bactericides. Noetzel and Buchner emphasize the fact that there is a marked local increase in the number of leucocytes, and probably an increase in the alexins (enzymes). In addition, the artificial edema dilutes the local toxins, and, as Joseph has shown, it thus diminishes the effect of poisons. Heile has noted a marked increase in the excretion of purin bodies in patients under treatment, and refers this to the breaking down of numberless leucocytes. Hofmann has studied the effect of suction hyperemia on granulation tissue. As a result of the suction, the tissue spaces which were filled with infiltrating leucocytes were cleared of these. The vessels which were full of leucocytes became dilated, and the leucocytes became less numerous approaching the normal proportion to the red cells. The fluid drawn from the granulation tissue contains bacteria, leucocytes, red cells, lymphocytes, and a fine network of fibrin. A similar change probably occurs in the treatment of acute inflammatory conditions by constriction hyperemia, especially when there is an incision into the affected area and the edema serum escapes into the dressings.

Besides the analgesic and the antibacterial activity of localized artificial edemas, as we have seen, there is a nutritive and a resorptive influence inherent in this process. In the stimulation of the periosteum we see instances of the former, and in the loosening up of old adhesions instances of the latter.

As work along these lines progresses many more activities may be found underlying the process that Bier has revived. The study of the processes underlying the curative action of hyperemia will surely lead us to a new understanding of many of the problems connected with the pathology of inflammation, just as it has forced us to change our views as to the cause of pain in inflammation. While these theoretical questions will be slowly solved, the general adoption and practical application of Bier's method will, I trust, be a matter of the very near future.*

In closing I wish to thank the various gentlemen who have assisted me in taking care of the above cases. To Dr. Garrigan I am especially indebted.

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SURGICAL DIAGNOSIS IN EMERGENCY WORK.

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The writer's excuse for preparing a paper on this subject is that during a rather protracted hospital service nine months were spent as ambulance surgeon in one of the large New York City hospitals. The number of calls each day ranged from twelve on the average to thirty as a maximum rate, though during the time of extreme heat in summer they ran even higher than this. As the ambulance surgeon is held strictly responsible by the attending surgeon and hospital authorities, who in turn are held liable by the courts for any mistakes, the question of making a correct diagnosis many times under the most unfavorable circumstances becomes a most urgent one and requires the greatest care. In fact, the matter of proper attendance on ambulance cases at the present time has become so serious that most of the large hospitals allow only the senior members of the house staff to perform this duty.

The chief difficulty in diagnosis seems to lie between alcoholism and the various lesions of the skull, injuries to the trunk and extremities being as a rule quite evident, or accompanied by symptoms of such a character that mistakes in these instances are much less frequent. More cases of alcoholism are seen on ambulance duty than any other one thing, and the tendency of the ambulance surgeon when in doubt too often seems to be towards this diagnosis, resulting in the transfer of the patient to the station house instead of to the hospital. Occasionally one of these cases dies of fracture of the skull, to be diagnosed only on the postmortem table.

This mistake has given many a hospital a large amount of free advertisement of a most undesirable nature, and has cost more than one interne his position. The character of the cases seen on ambulance duty covers a wide range, which includes concussion, fractures of the skull, fractures of the extremities, alcoholism, epilepsy, apoplexy, opium poisoning, uremia, carbolic acid poisoning, illuminating gas poisoning, internal injuries, thoracic and abdominal, and the various minor lesions.

Taking up this classification more in detail, first to be considered is "concussion." In speaking of concussion from a clinical standpoint, we refer to that class of cases in which as the result of trauma the functions of the brain have been temporarily suspended. The patient is stunned and rendered more or less insensible for the time being. To this class often belong those cases in which an individual leaves his office or home in a perfectly normal condition and later is found wandering on the street dazed, with no memory of events occurring during a period more or less protracted. They are often very difficult to diagnose, only careful observation and time clearing up the most severe ones. Concussion does not necessarily occur from lesions inflicted on the head; a severe fall on the buttocks or on the feet may cause the same line of symptoms. Laceration of the brain is not, as a rule, the sequence of concussion, but

must be suspected in all the severe cases. The variety in the symptoms of concussion is great, varying from a simple sense of dizziness and temporary loss of sight to complete unconsciousness. A fall on the ice on the back of the head illustrates one extreme, while the knockout blow in the face is a more severe type. In a severe case of concussion the patient is found lying unconscious. This unconsciousness may be complete or incomplete. Some brief answers may be made to questions, but soon stupor intervenes. There is distinct evidence of shock. The pulse is weak, the skin clammy, the limbs cold, often there is free perspiration. The muscles are flaccid, but there is no paralysis. The temperature is usually subnormal. The sphincters are relaxed. The eyes are half open, with the pupils equal, generally moderately dilated, and as a rule responding to light, though somewhat sluggishly. On being called to see such a case a careful examination should be made by the ambulance surgeon into the history of the accident and the character of the substance producing the trauma. The head should be examined for any sign of injury, and contusions of the scalp carefully investigated. No lesion being found to indicate a fracture of the skull, the patient is to be kept under the most careful observation, time alone in many cases serving to clear up the diagnosis. The danger in the first stage in severe cases is collapse, during which death may occur from failure of the heart's action. After a period varying from a few hours to a day or more, the stage of reaction comes on. Vomiting is often the first sign of returning consciousness. The pulse becomes stronger, the color improves, and the patient's mental condition brightens, though he may complain of dullness and headache for many days. The one sign which remains to mark the condition is the entire loss of memory regarding the accident. It might be well to mention at this point that cerebral irritation is a condition which may follow an injury causing concussion, especially at the beginning of recovery. It usually indicates contusion or laceration of the brain or its membranes, or hemorrhage. The patient becomes restless, lies on his side, with the thighs drawn up and the legs flexed. He is very irritable. Urine and feces may be passed involuntarily. This condition either passes to rapidly-deepening coma and death or lasts for a number of weeks, when there is gradual recovery.

Compression.—Another class of cases is that in which the unconscious condition in which the patient is found is due to compression of the brain. Here the symptoms show certain differences which make it possible to detect the lesion. Compression may be due to a number of causes; the first and most common in emergency work is depressed bone, then come foreign bodies, hemorrhage, tumors, and inflammatory exudates. In compression we have a more serious lesion; the patient may be completely unconscious or the intellect simply dulled. In the former case the breathing is slow and stertorous. The pupils vary widely in their character; first contract and later dilate, often unequally. There is paralysis. Usually in traumatic cases this affects one side of the body first, and later, as the intracranial pressure increases, both sides become paralyzed. It is often almost impossible to differentiate between compression and concussion. The fact of paralysis in compression and its lack in concussion is the most important diagnostic point. Whenever there is a constantly increasing degree of stupor, with a gradual broadening of the paralyzed area, hemorrhage should be suspected and operative procedure be at once instituted. The point to emphasize is that the patient in all doubtful cases must be kept under observation, when the test of time will usually give certain symptoms which are absolutely diagnostic. When the symptoms of compression come on immediately after an injury, we may expect the cause to be either fracture or foreign body. In case the lesion is caused by a foreign body there will, of course, usually be an external wound, but a depressed fracture does not necessarily show this. An incised or lacerated wound of the scalp, with the history of a fall or blow on the head, accompanied with the signs of compression, should always be explored, and the bone beneath it carefully examined. The same thing is true of a contusion or a large hematoma of the scalp. Cases of depressed fracture without symptoms are more common in children than in adults. In small children the skull may be depressed to a very considerable extent and the child remain conscious. It is often difficult to diagnose a small depressed fracture simply with the finger, even when there is a comparatively large external wound, and a careful examination of the bone itself is usually necessary to confirm the diagnosis. The ridge in the periosteum is often mistaken for the outline of a depression in the bone. A fracture of the vault may be simply linear. In most cases of this class there are no further results from the injury. If the fragment of bone is depressed and there are symptoms of compression, it must be elevated. In many cases the inner table of the skull is fractured for a greater distance than the depressed outer fragment, and all these particles of bone must be carefully removed. If the dura is torn, its edges should be closely approximated with sutures of catgut in order to avoid all possibility of hernia cerebri. The length of time a depression may remain undetected after fracture of the skull and yet be operated on successfully after diagnosis is often considerable. Operative interference shows remarkable results. In many cases the mental condition of the patient clears up at once after the removal of the depressed fragments. If the brain is lacerated by pieces of bone the prognosis is, of course, graver.

Fractures of the Base of the Skull.—Fractures of the base of the skull are of a much more serious nature than fractures of the vertex. They are divided into fractures of the anterior, middle, and posterior fossæ.

Fractures of the anterior fossa involve the orbit, the ethmoid bone, and the lesser wing of the sphenoid bone. The symptoms are: First: Subconjunctival ecchymosis, with as a rule no blackening or bruising of the tissues around the eye. Second: There is often a prominence of the eyeball due to hemorrhage behind the eye. Third: In case the fracture is compound there may be an escape of brain matter into the wound. Fourth: When the ethmoid is involved continuous and profuse hemorrhage from the nose is the main symptom, and there is at times an escape of cerebrospinal fluid from the same point. Fifth: If the lesser wing of the sphenoid is fractured the optic and motor oculi nerves are apt to be involved. Sixth: If the frontal sinus is opened there is often emphysema of the areolar tissue of the anterior portion of the scalp.

In fracture of the middle fossa of the skull the principal symptoms are: First: Hemorrhage. This comes from the ear as a rule, though we may have in addition bleeding from the nose. When coming

from the ear it must be profuse and fairly constant. Lesions of the wall of the external ear or drum must be ruled out.

Simply a few drops of blood from the external meatus means nothing at all. When bleeding comes from the nose fracture of the pituitary fossa should be suspected. A good deal of blood from such a lesion will trickle into the pharynx and be vomited later on. Bleeding from the nose, however, should be accepted with a very great degree of reservation when we consider the numerous accessory sinuses. Second: Escape of cerebrospinal fluid through the ear is another very important symptom. We know then that the arachnoid has been torn and that there has been very probably a laceration of the brain substance. This latter statement can be substantiated if there is an escape of brain matter through the external ear. The pouring out of the cerebrospinal fluid may amount to ounces. Third: In fracture of the middle fossa we may look for some paralysis of the facial muscles. The uvula is often drawn to one side. There may be deafness from injury to the auditory nerve.

In fracture of the posterior fossa of the skull there are comparatively few definite physical signs. There may appear deep-seated ecchymoses of the muscles of the neck or a swelling of the tissues in the mastoid region, or a bulging forward of the posterior pharyngeal wall. In general it can be said that in fracture of the base of the skull the patient lies unconscious and cannot be roused. He mutters to himself, turns from side to side, rubs the head with the hand in case there is cerebral irritation. The pupils are often unequal. The breathing varies, but is stertorous in the severe lesions. The amount of paralysis is usually limited to the cranial nerves. It may become more extensive, however.

Differential Diagnosis.—In connection with the diagnosis of concussion and the fractures of the skull in emergency work must also be considered the question of differential diagnosis. Alcoholism, epilepsy, opium poisoning, uremia, and heat prostration all must be ruled out. In many cases there is, of course, an injury to the scalp. This may as well occur in alcoholism as in fracture, and too much reliance cannot be placed on it. The odor of whiskey may be detected in a patient's breath, and yet he may not be in a state of coma due to alcoholism. Deep pressure on the supraorbital nerves will rouse a man from an alcoholic stupor. There is no paralysis in alcoholism. The pupils are usually contracted, dilating when the patient is aroused. Washing out the stomach will often aid in the diagnosis.

Apoplexy.—In apoplexy there is absolute unconsciousness, stertor, hemiplegia, strabismus, and puffing of the cheeks during respiration.

Opium Poisoning.—Opium poisoning shows pinpoint pupils, no paralysis, and very slow respirations. At times the odor of the drug can be detected in the breath.

Uremia.—In uremia there is no paralysis. There is apt to be edema of the extremities, and on drawing off the urine we find a large percentage of albumin. There is often the peculiar uriniferous odor to the breath. Examination of the optic nerves will clear up the diagnosis in some cases. There is high tension to the pulse.

Epilepsy.—In epilepsy the patient must be kept under observation, but usually becomes conscious in a comparatively short space of time. A history of previous attacks will clear up such a case. Scars on the tongue or other portions of the body should be carefully looked for. There are spasmodic movements of the extremities, frothing at the mouth, and cyanosis during the acute stage of the attack.

Heat Prostration.—Heat prostration must be diagnosed by the character of the weather, the temperature of the patient, and the environment under which he has been working. The face is flushed, the pulse full and bounding, the pupils contracted, the eyes bloodshot, and the skin hot to the touch. There is absolute unconsciousness.

Fractures of the Extremities.—No paper on the subject of emergency work would be complete without at least a brief mention of fractures of the extremities. The ambulance surgeon sees in the course of a few months' emergency service more cases of this class than he will probably meet in the first ten years of his private practice. Here is an opportunity too often neglected for securing proficiency in the treatment of fractures and skill in their diagnosis. Too often these cases are rushed to the hospital with but a superficial examination, and with splints so carelessly applied as to cause the patient the greatest degree of discomfort. The period immediately after a fracture has occurred before the swelling incident to the severe contusion and laceration of the soft parts has obscured the lesion to the bone offers the most favorable opportunity for diagnosis, and a careful examination should be made as soon as the case is seen. Misplaced fragments of bone can be discovered at this time which cannot be detected later on.

Injuries to the Thoracic and Abdominal Viscera.—Another important class of cases and one with which the ambulance surgeon comes into close and frequent contact is that associated with injuries to the thoracic and abdominal viscera.

Under the heading of injuries to the thoracic wall and viscera should be included: A.—Penetrating wounds of the chest wall and pleura. B.—Penetrating wounds of the chest wall pleura and lungs. C.—Penetrating wounds of the pleura, pericardium, and heart. D.—Penetrating wounds of the pleura and diaphragm. E.—Crushing injuries to the sternum and ribs.

Stab wounds and bullet wounds may simply penetrate the pleura, or may pass through the pleura into the lungs. Pneumothorax is always the result when there is an inrush of air into the pleural cavity. In case the lung itself is perforated, especially if the external wound into the pleura is occluded and the air cannot escape, we have the formation of a subcutaneous emphysema. This is usually limited to the region of the wound, but may extend to the thoracic wall, and even to the entire body. It is more common in penetrating wounds of the pleura than in any other class of injuries, and is always diagnostic of puncture of the lung. Crushing injuries to the sternum and ribs are often very severe. A fractured rib may perforate the lung, and here, too, we may have subcutaneous emphysema with the expectoration of bloody mucus and difficult breathing. The diagnosis in most of these lesions is comparatively easy. It should always be remembered, however, that a penetrating wound of the chest wall may perforate the diaphragm and cause a serious lesion to some of the abdominal viscera.

Internal Injuries Involving the Abdominal Content.—No more difficult task confronts the surgeon performing emergency duty than the correct diagnosis of the different internal injuries to the abdominal viscera. In the order of the frequency of their occurrence we may classify them as: A.—Penetrating wounds of the abdomen including gunshot wounds and stab wounds. B.—Severe contusions the result

of falls and other forms of external violence causing lacerations of the viscera. C.—Injuries to the pelvic viscera, including fractures of the pelvis in so far as they relate to such lesions.

A.—Penetrating Wounds of the Abdomen.—In the diagnosis of penetrating wounds of the abdomen, the first question to be considered by the ambulance surgeon is whether he has to do with a wound which really penetrates, or one which is superficial and only passes through the muscular layers of the abdominal wall. A protruding piece of omentum may settle the question at once; but as is more commonly the case, it is necessary to take the patient to the hospital and there insert a probe into the wound under all possible antiseptic precautions, when a diagnosis can usually at once be made. Having determined that the wound does penetrate the abdominal cavity, the question at once arises whether it has perforated important viscera or not, whether there is immediate danger from hemorrhage, and whether the patient's condition will warrant operative interference.

B.—Injuries to the Abdominal Viscera.—Equally important are lacerations of the abdominal viscera caused by trauma. These often produce no external lesion by which their diagnosis can be determined, therefore this class of injuries present even greater difficulties to the ambulance surgeon than do stab wounds or other penetrating wounds. In general the symptoms of internal lesions coming under this class are: (1) Shock. This is unusually marked. Wherever there is shock with the history of traumatic injury, which does not present any external signs of violence, a lesion of the abdominal viscera should be suspected. (2) Abdominal rigidity. This is one of the most important symptoms of this class of lesions, and may be considered almost pathognomonic. Some surgeons attach so much importance to rigidity that they operate when this symptom alone is present, if accompanied by severe shock. It occurs in lead colic and in the various inflammatory lesions causing peritonitis. In these cases there is, of course, no history of trauma. (3) Hemorrhage, with the accompanying weak and rapid pulse. Hemorrhage when present with rigidity is at once an indication of internal injury requiring operative interference. (4) Pain. Pain referred to the location of the injury is usually present. (5) Tenderness. Tenderness on pressure over the area where there is rigidity is a very common symptom. (6) Tumor. Tumor indicative of the presence of fluid due to hemorrhage is frequently noted, especially in the flanks, following injuries to the spleen and kidneys.

Classifying these symptoms more concisely and localizing them more closely to the viscera occupying the anatomical divisions of the abdomen, we will consider then, even at the expense of some repetition.

First.—The Liver.—A laceration or a penetrating wound of the liver will produce: (1) On palpation, pain and tenderness in the right hypochondriac or epigastric region, depending on which lobe is involved. (2) Abdominal rigidity in this region. (3) Shock. (4) If there is hemorrhage, a rapid and feeble pulse.

Second.—The Right Kidney.—A similar lesion of the right kidney will produce: (1) On palpation, pain and tenderness located further towards the right flank than when there is an injury to the liver. (2) Rigidity in the right hypochondriac and right lumbar region. (3) Frequently a hematoma in this region, with dullness on percussion. (4) Hemorrhage from the kidney through the ureter, as indicated by the presence of blood in the urine on catheterizing the patient. (5) Shock. (6) Escape of urine from the wound in the kidney will cause a large area of flatness in the right flank over the kidney. (7) The escaped fluid is usually retroperitoneal.

Third.—Stomach and Intestines.—Usually the inuries to these viscera are of the perforating type. The fact that a wound penetrates the abdominal wall makes an injury to the contained organs extremely probable, and an exploratory operation is always indicated, delay only increasing the danger of peritonitis. The immediate symptoms of perforation of the stomach or of the intestines are: (1) Shock, with a weak, rapid pulse and an anxious expression to the face. (2) Abdominal rigidity, later distention. (3) Abdominal pain and tenderness, which may be very general. (4) The vomiting of blood in case there is perforation of the stomach. (5) Blood in the stools when the perforation is low in the intestinal canal. (6) On palpation no tumor can be detected. (7) Great variation in the amount of hemorrhage. It is not so generally present as in lesions of the solid viscera.

Fourth.—Left Kidney and Spleen.—The symptoms are similar to those enumerated under the right kidney, with the exception that an injury to the spleen will of course not produce, as in the case of the kidney, blood in the urine. The tumor caused by the hematoma will be higher up in its relation to the diaphragm, more difficult to palpate, and not so extensive as in a kidney lesion, as the blood will not be mixed with an escape of urine.

Fifth.—Laceration of the Omentum or Mesentery.—A laceration of the omentum or mesentery may cause symptoms simulating an intestinal lesion. In some cases the hemorrhage is so severe as to produce results as serious as those following laceration of the more important viscera, with the attendant abdominal rigidity, shock, and weak pulse.

C.—Of equal importance to the lesions of the abdominal viscera above-mentioned are injuries to the pelvic viscera and to the pelvis.

The Bladder.—Either a penetrating wound, a laceration, or a rupture may be the result of trauma to the bladder. Any one of these may be extraperitoneal or intraperitoneal.

If extraperitoneal, the symptoms leading to the diagnosis are as follows: (1) The history of the accident, usually a severe crushing force. (2) Pain in the region of the bladder. (3) Abdominal rigidity in the hypogastric region, with marked shock. (4) Intense pain on attempting the act of micturition. Frequent desire to micturate. (5) Extravasation of urine. The direction which the urine takes depends on the location of the injury. It may extend to the cellular tissue between the bladder and the rectum if the tear is posterior, or above the pubis, even as high as the umbilicus if it is anterior. It may pass anterior to the peritoneum, to the iliac and inguinal region, forming a tumor there, or extend to the thighs and scrotum by way of the obturator foramen, the inguinal canal, or the femoral ring. (6) Blood in the urine on catheterizing the patient. (7) The oozing of blood from the urethra. (8) The catheter can often be passed its entire length into the urethra, entering through the tear in the bladder wall the space of Retzius, if the rent is anterior, or the

cellular tissue between the bladder and the rectum if it is posterior.

If the tear is intraperitoneal, the symptoms presented differ somewhat from those of an extraperitoneal lesion. In addition to pain in the region of the bladder and on urination, abdominal rigidity, shock, the presence of blood in the urine, and the oozing of blood from the urethra, there will be: (1) Abdominal distention, moderate at first, but gradually extending. (2) Extravasation of urine into the abdominal cavity. This does not necessarily mean peritonitis, at least not for from twenty-four to thirty-six hours, if the urine is aseptic and there is no cystitis, for the peritoneum has a remarkable power for the absorption of aseptic fluids. (3) The passage of the catheter directly into the peritoneal cavity through the rent in the bladder wall. (4) There is no extravasation of the urine into the cellular tissues in the vicinity of the bladder. This usually occurs within a few hours after an extraperitoneal rupture, and is an important point in making a differential diagnosis, which at best is necessarily very difficult.

The Urethra.—Another lesion which is closely associated with the bladder is rupture or laceration of the urethra. It is often difficult to diagnose this from a tear in the bladder wall, particularly if this be of the extraperitoneal type. A ruptured urethra does not necessarily require a traumatic injury for its cause. It may be the result of a pathological process which weakens the integrity of the urethral wall to such an extent that it gives way under a sudden strain. The symptoms of a ruptured or lacerated urethra are as follows: (1) Retention of urine, partial or complete, depending on the severity of the lesion, usually complete. (2) Extravasation of urine, which rapidly increases in extent, involving the scrotum and spreading down the thighs, with discoloration of the skin. (3) There may be present a painful swelling in the hypogastric region, tender on palpation and representing the overdistended bladder. (4) The catheter cannot be passed into the bladder. (5) Perineal tenderness, with ecchymosis and swelling. (6) Oozing of blood from the urethra. (7) Pain.

A torn urethra is one of the most difficult lesions of the genitourinary tract to treat successfully, and the importance of an early diagnosis cannot be overestimated.

A discussion of injuries to the pelvic viscera would not be complete without mention being made of the important fact that fractures of the pubic bones are a very common cause of traumatism to the bladder and the urethra. The ambulance surgeon should bear in mind this important possibility whenever an accident involving these structures occurs.

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Fourth of July Tetanus.—The *Journal of the American Medical Association* publishes in the issue of August 18, 1906, reports of 89 cases of tetanus resulting from Fourth of July injuries this year, of which 75 cases were fatal. Antitoxin was more generally used than ever before. Its chief value, apparently, is as a prophylactic. After the main symptoms of lockjaw have begun, it seems to have little value, since in only three cases out of 89 are patients reported to have recovered. In one of these, which was very persistent, antitoxin was administered as often as ten times each day, with recovery as the result.

PNEUMOTHORAX, WITH A REPORT OF FIFTEEN CASES.*

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This condition is so commonly overlooked that I wish to report the results of my study of fifteen cases seen during the past four years, and to call attention to its signs and symptoms, which ordinarily make it easily recognizable if the possibility of its existence only be thought of. Twelve of these cases were seen with other physicians, while three were in the Denver City and County Hospital. Eleven were males, four females. The youngest was ten years, one thirteen years, the oldest thirty-four years, and ten were between twenty and thirty years.

The cause was tuberculosis in eleven cases, in two of these in conjunction with attacks of acute pneumonia. In the boy of ten it followed a bronchopneumonia. One case occurred from the wounding of the lung by the needle used by a house physician in injecting antistreptococcic serum for a supposed sepsis, the real cause of the chill being an acute pneumonia, followed by crisis on the ninth day, and an empyema later—a pyopneumothorax. In two cases the pneumothorax was due to gunshot wound of the left chest, hemothorax being also present.

Eight of the cases were upon the right and seven on the left side of the chest, although the left side was affected in twenty-nine out of forty-four cases reported by Morse, and is said in general to be more often affected.

One case of gunshot wound ended promptly in recovery, and one went on to a fatal termination in about twenty-four hours, more from the hemorrhage from wound of vessels in the lung than from respiratory embarrassment. The boy of ten just mentioned recovered promptly after operation, exactly as one with postpneumonic empyema would be expected to do. All of the others died excepting the girl of thirteen years. This was a chronic case in connection with tuberculosis of the right apex, seen with Dr. Teele. An extensive necrosis of the right humerus demanded operation, but her general condition was so bad that I advised tonics and good feeding, with the possible hope that she might gain sufficiently to justify operation. She weighed but fifty-five pounds on April 23, 1904. The right chest was some two inches larger in circumference than the left, and was hyperresonant. The heart was displaced to the left, and beautiful coin sounds were to be heard over the right side of the chest, with metallic tinkling. There was scarcely any respiratory sound upon the right, nor was the voice to be heard. Large veins crossed over the right shoulder from the necrotic humerus, but no sign of tumor could be made out. I believe their distention was due to the pressure of the air in the chest upon the right subclavian vein, or possibly to pressure from enlarged tuberculous glands within the chest. One year later the signs of air within the chest had disappeared, and she had gained five and one-half pounds. I believe she had had a closed and noninfected pneumothorax, and that it recovered. Dr. Freeman operated May 3, 1905, upon the necrosis, and the girl has been doing well since.

Of the twelve fatal cases ten died within two months from the discovery of the pneumothorax. One lived probably four months, and one was operated upon at the Denver City and County Hospital and lived eighteen months. My past experience

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would lead me to believe that in any large series of tuberculous cases a greater percentage than above indicated would live more than three or four months.

In six cases from one to five aspirations were done to relieve the dyspnea and general distress. No operation was advised in seven cases. In one case Dr. Whitney established permanent drainage into a bottle after Bülau's method, this being the patient that lived eighteen months. In the case due to puncture of the lung with the needle the temperature was up to 105° when I saw her, pulse 160, and respirations very rapid. Immediate drainage was advised, and although Dr. Williams, who was called in to operate, promptly evacuated two quarts of stinking pus, the young woman failed to rally from the operation.

In seven cases pus was present with the air in the pleura, and in one case only air was evacuated, although, doubtless, pus was also present. Dr. W. C. Mitchell reported myriads of pneumococci in the case following bronchopneumonia. In two cases following gunshot wound blood was evidently present. In four of the remaining five cases, fluid, without doubt purulent, was present, for they all died within a short time with the usual hectic. The remaining case is the one of the girl thirteen years old, in which I believe air only existed in the cavity, no infection occurring so far as I can tell. In several of the cases the first aspiration showed only a turbid serum, but it always became more purulent later, in the cases again aspirated, as is the rule. Aspiration was done only when demanded by the large size of the effusion, for, unfortunately, it does not seem to be curative. The fluid seems to be almost always infected in the tuberculous cases, doubtless from pus organisms carried in from the ruptured bronchus.

Of the ordinary signs of pneumothorax, or, more properly speaking, of pyopneumothorax, we find that splashing has been present in thirteen cases, not tried for in the more serious gunshot case, because of his desperate condition, and stated to have been absent in the girl of thirteen. The sign is so constant, so easily obtained, and so entirely reliable that it should be more often tried for than it is when percussion draws attention to any peculiarity within the chest not easily explained.

The heart was notably displaced in the opposite direction in all but one case, the average displacement being a little over three inches. In one case it was seven inches, in two, six inches each, and in three cases but one inch. In the case without displacement an old fibroid phthisis at the left apex had drawn the heart an inch to the left and the subsequent left-sided pyopneumothorax was not able to displace it to the right. Doubtless firm adhesions existed. This was the case drained by Dr. Whitney, after I saw him, in the Denver City and County Hospital.

In the cases with but little displacement doubtless old adhesions interfered with the mobility of the heart. The coin test and tinkling are each noted as positive in three cases, but, unfortunately, no record was made in most of them. One of the other of these two signs, if not both, may generally be elicited.

Notable cyanosis was present at the time of my visits in thirteen of the cases, there being none in the gunshot case that recovered, nor in the girl of thirteen.

Rapid pulse was a practically constant feature. In the gunshot case just mentioned the rate was 100, but no other record was below 120 per minute. The lowest respiration rate noted was 24 per minute. The temperature was generally elevated, but was doubtless more influenced by the tuberculosis or an associated infection than by the pneumothorax in most cases.

Exact measurements of the two sides of the chest are not recorded in many cases, but an increase of one or two inches upon the affected side was present in several of them, marked and easily demonstrated.

Change of the level of fluid when present, upon change of position, is practically always to be noted, and I should rank this sign along with splashing, dislocation of the heart, tinkling, and the coin test. It is to be demonstrated also in simple pleural effusion without pleural adhesions, but with much less freedom of movement. In a case of subphrenic abscess succeeding suppurative appendicitis, recently seen with Dr. Freeman, the movable dullness was present, but was beneath the liver dullness, and thus caused no confusion.

The frequency of sudden pain and dyspnea I have not noted. In a few cases the rupture into the pleura is so sudden and the pain and dyspnea are so severe that we may date the trouble from the moment of such pain. In a large part of the cases I have been unable to fix the exact time of origin, however.

In two of the tuberculous cases complicated with acute pneumonia I am unable to say whether the pneumothorax came from ulceration through the wall of a tuberculous cavity or of a postpneumonic abscess. The fact that the pus was sterile in one of these cases leads me to believe it to have been from the tuberculosis rather than from the pneumonia. In the second case thick pus was drawn by needle from the base of the left chest, and air mixed with bloody serum from the fifth space, near the left nipple. I believe that a true empyema existed below and a tuberculous pneumothorax above. In the third case in which pneumonia was present the puncture of the lung by a needle, as described, was alone responsible for the pneumothorax.

The most interesting case of the series was that of a boy ten years, seen with Dr. Bartholomew. He had had a left lobar pneumonia, followed by crisis on the seventh day. Five days later he was again taken sick, and had a bronchopneumonia upon the right side. Dr. Bartholomew found fluid two weeks later and withdrew four ounces of serum and some air, a pneumothorax, doubtless due to rupture of the pleura over a bronchopneumonic focus, having occurred. Many pneumococci were found in the fluid by Dr. W. C. Mitchell. All the usual signs of a pneumopyothorax soon developed, and were most marked when I saw him. Resection of a rib and drainage resulted in prompt recovery.

To avoid overlooking this complication I think one must practise careful percussion habitually, as is true likewise if we are to avoid missing the diagnosis of transposition of the viscera, a condition probably more common than usually supposed, since I have seen four instances in the past ten years. It takes long practice to locate the heart dullness with fair accuracy, but when the art is learned these two conditions mentioned are almost certain of discovery. Every case of pneumothorax has marked cardiac displacement, unless the heart be adherent or the effusion of air be small. Displacement of the heart and mediastinum, in the absence of the usual causes, such as pleural effusion, or shrinking of the apex of one lung from fibroid disease, should lead one to search for unusual resonance on one side, depression of the diaphragm on one side, the presence of movable dullness from the fluid, which is nearly always exuded, for splashing, tinkling, falling drop sound, the coin test, and enlargement and immobility of the affected side. The conspicuous absence of breath and voice sounds and fremitus, the dyspnea, cyanosis, rapid pulse, and general distress all combine to make an easily recognized picture, once our attention is properly drawn out. Acute dilatation of the

stomach with a great amount of gas, subphrenic abscess containing air, and diaphragmatic hernia would be excluded without especial difficulty if their possibility were only recognized. I know of one case where a perfect history of the sudden pain and dyspnea, occurring while on the train, in a consumptive coming West, should have rendered the recognition of pneumothorax easy, yet a physician in another State who had seen much tuberculosis made a diagnosis of unilateral emphysema; a mistake of especial interest to me, since I had made the same error when a student.

In a case of a man with empyema following acute pneumonia (not here included) long neglected before being sent here for treatment, and dying three hours after I saw him, we found post mortem, gangrene of the left side of the diaphragm, and two quarts of stinking pus in the left pleura, with a colon bacillus infection. A small amount of gas, due, we believed, to the action of this organism, was present, but not diagnosed during life. Biermer and Senator believe that pneumothorax is occasionally caused by bacterial activity.

Although no such cases are included in this report, I have seen two or three instances of partial limited pneumothorax, where adhesions of the pleura prevented the usual development of the condition, and yet made a most perplexing set of physical signs. A specimen was recently shown at the Denver Clinical and Pathological Society by Dr. Sewall in which a very large part of the lung was excavated, so that a mere shell of lung tissue remained, and in this case a diagnosis of limited pneumothorax would apparently have been almost justifiable.

No cases were noted from whooping-cough, strain, emphysema, gangrene, or abscess of the lung. In several cases in which abscess of the liver, and in three in which suppurative processes traveling upward from the appendix, ruptured through the lung, it was evident that firm pleural adhesions had prevented the development of either empyema or pneumothorax. In one case of neglected empyema rupturing in or near the fifth right interspace in front there was no evidence of the admission of air. It is a curious fact that when the pus of an empyema is coughed up air so rarely takes the place of the ejected pus, for I cannot recall ever having seen it in sufficient amount to be diagnosed.

Treatment.—I believe in all cases beginning abruptly a moderate-sized dose of morphine should be given hypodermically, for the pain and dyspnea are severe. In traumatic cases of hemopneumothorax an expectant plan is probably best unless evidence of severe continued hemorrhage forces us to intervene surgically. Acute and infectious forms of the disease from gangrene, abscess, and pneumonia are probably best treated as if they were cases of ordinary empyema, especial care being taken as to anesthesia, and a local anesthetic being used if cyanosis and dyspnea demand.

In the cases following exertion, cough, and trauma, if the cyanosis and dyspnea demand relief, the abstraction of a small part of the air, so that the heart may move partly back to its place, gives great relief, but experience shows that it is best not to withdraw too much. In tuberculous patients only great dyspnea should lead us to aspirate, for the patients commonly decline more rapidly afterward than before. I have made the error of withdrawing so much of the serous fluid in these cases as to open up a valvular pneumothorax which had been closed, so that the relief obtained was very slight and of short duration. The prognosis is bad in any event.

URETHRAL DIVERTICULA AND CUL-DE-SACS.*

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URETHRAL diverticula and cul-de-sacs are anomalies of development, and are by no means so rare as some authorities would lead us to believe. The literature on this subject is, unfortunately, meager, and the little information one does gain on perusing it is very inadequate, so that one is tempted to regard the defects at best but as extremely infrequent ones affecting the urethral mucosa. Genitourinary surgeons of extensive experience have treated the subject in a very perfunctory manner and have paid but little attention to it in textbooks or otherwise. The reason why these urethral malformations are not more often encountered may be explained by the fact that they give rise to little inconveniences in the patient under normal conditions, and are only accidentally discovered during the examination of the urethra for some other malady. As already intimated, the author, finding nothing of interest recorded in the literature, had to rely solely upon his own resources in the elaboration and description of the subject designated by the title. This article is largely based upon a number of cases witnessed in both private and dispensary practice.

There are two forms of these urethral peculiarities, viz., (1) the *diverticulum,* a short, linear, narnow, collapsible pocket opening into the urethral canal, from one-fourth to one-half of an inch in length, of the caliber of a knitting-needle, unyielding, and nondilatable; and (2) the *cul-de-sac* proper, a larger, longer, and more distended pouch, stopping abruptly, or, rather, terminating blindly in the mucous lining of the urethra, seldom exceeding one inch in length, and somewhat larger in caliber than the preceding one. Both of these varieties are congenital anomalies, rarely found further down than the first two inches of the anterior urethra, and are in most instances situated on the floor of the canal, thus distinguishing them from enlarged and patulous urethral follicles, that are commonly located in the roof of the urethra, in proximity to the fossa navicularis.

Of interest to the histologist is the embryological phase of these small developmental errors. The only plausible theory the author is able to venture regarding their embryonic evolution is the faulty closure of that part of the genital cleft concerned in the formation of the urethral tract synchronous with faulty or delayed participation in the development of the epiblast lining it. Instead of the embryonic units blending at the proper period, they undergo a process of interrupted or faulty development and eventuate into the above-mentioned abnormalities of the urethral wall. As remarked before, they are only accidentally detected either on direct inspection and by means of the urethroscope, or as a result of urethral instrumentation in the form of sounds or similar instruments employed for therapeutic or diagnostic purposes. They are apt to engage the point of the advancing instrument, and if the operator still persists on meeting these obstacles in forcibly propelling the sound, he may not infrequently lacerate or even perforate the blind extremity, and thus establish a channel of communication between the *cul-de-sac* and the urethral canal.

* Read before the Section on Surgery of the Michigan State Medical Society, May 24, 1906.

As mentioned elsewhere, these anomalies give rise to little discomfort, but when once the seat of inflammatory involvement they may prove annoying and exceedingly rebellious to treatment, unless they are radically attacked by the method the author is about to outline. These anomalies may occasionally produce very vague symptoms, which are apt to puzzle the physician. They may, for example, simulate a mild case of urethritis, while the history and accompanying symptoms do not at all warrant such a diagnosis. They are, moreover, the cause of many a case of prolonged urethral discharge, a veritable "urethrorrhea," as it is termed by some, while microscopical examination reveals nothing of importance that could furnish a clue to the existing pathological state. Among other symptoms occasioned by them in a number of instances, painful micturition and urinary tenesmus may be pointed out. Should they become implicated in a gonococcic process concomitantly invading other portions of the urethral tract, they may form the starting point for strictures of various descriptions, particularly that of the longitudinal or bandlike type. They may also prove a prolific source of protracted suppuration, which is persistent and stubborn and does not seem to yield to the most painstaking and thorough treatment until the real cause of the malady is perchance discovered. The urinary stream in cases of urethral diverticula is irregular, either radiating and bifid or thin, rotating, and spirting and necessitating some effort on the part of the patient to expel it. This is falsely attributed to the presence of a stricture, and the patient is erroneously treated for such. Should the sound, which is chiefly used for the latter condition, happen to be of small size, it may promptly engage in the opening of the pouch or diverticulum and refuse to advance, when the exact nature of the lesion may be readily ascertained. Many more symptoms may be detailed, but the above are the main ones that demand our attention.

The *treatment* of these urethral defects is decidedly simple. It consists in first discovering the precise location of the sac or canaliculus by means of the urethroscope, or, if this be not available, of a small sound or probe; or a very fine olivary bougie may be used. With the former in position, the lacunar fold is then slit open with a small knife or tenotome throughout its entire extent to the very bottom of the urethral mucosa. Or, after the site of the channel or sac has been located, a urethrotome may be introduced, and by a sweep of the delicate blade the pocket can be divided. Local anesthesia usually suffices to accomplish this result. As soon as the fold of mucous membrane has been severed this should be immediately followed by the insertion of sounds in ascending sizes until the largest can be conveniently passed and left *in situ* for at least ten minutes each time. This must be continued for a week or ten ways to prevent the premature closure or healing of the divided edges or subsequent fibrous contraction, which may ultimately lead to stricture formation. Rarely is the fold of mucous membrane so extensive as to require ablation or removal *in toto*. The two lateral bands become eventually atrophied and level with the urethral canal.

Another method that may be utilized consists in the dilatation of the urethra either by means of a urethral dilator, or, what is still simpler, with a pair of ordinary dressing forceps gently introduced and expanded to its utmost limit (provided, however, that the *cul-de-sac* be not situated too far posteriorly), severing the band by means of a small scissor, and then proceeding in the manner delineated above.

In conclusion I wish to emphasize the rule, that in all cases of chronic urethral discharge without any appreciable or assignable cause or lesion as a basis, one must always be on the lookout for these annoying little anomalies and institute a thorough investigation for their possible presence.

106 East High Street

A NEW MANAGEMENT OF OCCIPITOPOSTERIOR POSITIONS OF THE FETAL HEAD.*

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Obstetric writers, commenting on the management of occipitoposterior positions, advise temporizing, in the hope that the malposition will rectify itself. * * * When it is found that the fetus oscillates before engagement, it may be assumed that the cord is wound about the neck or body, and is correspondingly shortened, and the head slews around with each uterine contraction, until the parturient canal dilates sufficiently to permit the head to descend. * * * If it engages in the occipitoposterior position, and manual reposition is employed, it will be found necessary to rotate the occiput in a three-quarter arc of a circle in order to bring the head in direct line with the body and to flex the chin. But if the accoucheur, failing to appreciate the true position, rotates in the opposite direction, he cannot retain the occiput in its new place, for as soon as the hand is withdrawn, the occiput reoccupies the vicious position, because the body does not rotate with the head. If this maneuver is repeated and forceps applied, the traction on the child's twisted neck is serious in its consequences, and it is a painful picture, when the forceps are removed, to see the black and bloated face "restitute" upwards and the maternal tissues gape in silent reproach for the attendant's incompetency.

To apply forceps to an occipitoposterior and rotate the head, like turning a screw on a bolt, with a pincers, is dangerous and unscientific, if not worse.

Version has largely superseded the above-mentioned methods, and no one will deny that, however skilfully performed, podalic version is a serious operation for mother and child.

Recognizing the facility with which the fetus slips about *in utero*, in all stages of labor, and assuming that the accoucheur's hand may pass where the child's body is to be extruded, I introduce either hand, under the occiput, with or without anesthesia (according to circumstances), grasp it firmly, separate the middle and ring fingers, to steady the neck, make counterpressure upon the fundus, thus bringing the fetal body and head into one solid mass, and with assistance slowly rotate the *mother* to the genupectoral posture. This manipulation brings the occiput anteriorly without traumatism to mother or child. Labor proceeds as when the patient is placed in the genupectoral position for prolapsed cord or in the lateral obstetrical posture as practised by the English school.

An awkward moment occurs when the patient's knee passes over the accoucheur, for the crux of the manipulation is to keep the head fixed steadily with the body curled upon it.

101 West One Hundred and [illegible] Street.

*Extract from a paper and demonstration before the Harlem Medical Association, May 2, 1906.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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MAGNESIUM SULPHATE AS AN ANESTHETIC.

IT has recently been determined by Meltzer (MEDICAL RECORD, December 1905) that certain magnesium salts when injected subcutaneously or directly into the circulation, or when applied to the nerve trunks or spinal cord, inhibit nerve impulses and seem to manifest a selective action for nerve tissues. Death in the experimental animals, moreover, was found to be due in all cases to paralysis of respiration alone, no depressing action on the heart being observed. Encouraged by the striking and apparently harmless effect on the lower animals, Meltzer was led to recommend the use of this agent in the production of anesthesia for surgical operations on human beings and it has thus far been employed in twelve cases by Haubold, Willy Meyer, and Blake. The latter makes a general report of the results obtained (*Surgery, Gynecology, and Obstetrics,* May, 1906) which affords some basis for judging the value of the method. The dose employed in nearly all the cases corresponded to one cubic centimeter of a 25 per cent. solution of magnesium sulphate to every twenty to twenty-five pounds of body weight. The operations included appendectomy, curettage, perineorrhaphy, hernia, abscess incision, fistula in ano, and the reduction of a Potts' fracture—quite a miscellaneous array. In a few cases a small amount of chloroform was given as an adjuvant. The anesthesia induced by the method was characterized by considerable variability, and in two instances no anesthetic effect was noted, both these patients being alcoholics. The motor symptoms were the most constant, and varied from a slight weakness of the muscles of the lower extremities to a complete paralysis of the latter and also those of the trunk and upper extremities. This paralysis persisted, as a rule, longer than the local disturbances of sensation, lasting in some instances almost two days. The reflexes were first diminished, then abolished, and then returned slowly; retention of urine was almost always present. Great variability was also noted in the effect on the mental faculties; total unconsciousness was present in only six cases, and when the patients came out of the resulting coma they were restless and showed unmistakable evidences of mental confusion. The respirations were always markedly inhibited and thus served as an indication of approach to the danger line. Vomiting was present in all the cases in which the magnesium sulphate had produced any marked effects, and sometimes was annoying and persistent.

It is quite apparent that the effects of this drug as an anesthetic are so variable that some hesitancy must govern any recommendation for its general use, even if spinal anesthesia were as desirable as general anesthesia by the usual methods. Blake points out several features in its favor which are not possessed by cocaine, chief among which is the absence of any depressing action on the heart. Its action is also more general, but in the full doses thus required it is difficult to gauge the effect, and alarming results may follow. The prolonged action which has been noted may make its use desirable when a prolonged anesthetic effect is needed, such as in the treatment of aneurysms by compression, and its marked effect on the perineum may be of some value in doing a prostatectomy on a patient with bad kidneys and a myocarditis. In view of the associated dangers and uncertainties, however, it is doubtful whether any extended application will ever be accorded to this procedure.

Blake also had an opportunity of studying the effect of magnesium sulphate injections in cases of tetanus, where its use was suggested by the marked inhibition which had been noted on both afferent and efferent nerve impulses. It was given in connection with other antitetanic measures, and in one of the two cases in which it was employed the results were apparently favorable. The other was practically a hopeless case, but even here a marked effect in restraining the convulsions was noted and the pain was relieved. As the spasm of the muscles of mastication and deglutition was lessened, feeding was more easily accomplished. The effect of the substance was continued over considerable periods, from twenty-nine to thirty-seven hours, without any cardiac depression; the repeated injections seemed to have no harmful effect, but a certain degree of tolerance became established. As to what the action of magnesium sulphate may be in tetanus, we are still in the dark. Although it may have some chemical action on the toxins, Blake thinks that its effect is purely symptomatic, and it may therefore be employed with perfect justification as an adjuvant to other treatment, mainly the use of antitoxin.

SUBCUTANEOUS INJECTION OF FATS.

THE necessity of supplying the organism with nutriment in cases in which its administration by the normal channels cannot be conducted either completely or partially has led to the introduction of a number of methods for overcoming this difficulty. Among these rectal feeding has, perhaps, found the greatest vogue; but this has its limitations, and the attention of the clinician and therapeutists has therefore been directed to other channels. The subcutaneous administration of fat was suggested as a means of supplying the body with nutriment for a time, but animal experiments showed that fat was unsuitable for this purpose, and the observations of Winternitz proved that but two or three grams of this material was absorbed daily when five hundred grams had been injected during a period of five days in the human subject. The fat injected in this case contained iodine in combination which was set free dur-

ing the process of oxidation so that the amount excreted in the urine could be readily determined, and an estimate was then made of the quantity of fat absorbed. The method is still used, however, to a limited extent as an emergency measure, for it is claimed that part of the absorbed fat escapes oxidation and becomes stored in the tissues and replaces the fat which has been used up in the body.

This theory has now been put to a further test by Winternitz, and the results of his new experiments have been recently published in the *Therapie der Gegenwart* for June, 1906. A certain number of dogs received subcutaneous injections of fat containing a definitely known quantity of iodine, and were also fed freely in the usual manner. An equal number received the same quantity of fat subcutaneously but otherwise were fed very sparingly. The animals were killed eight days after the last injection, and in those which had been freely fed the iodized fat could be readily demonstrated in the adipose tissues of the liver, the bone marrow, the mesentery, the heart, and the kidneys, but in the poorly fed subjects none of the organs and tissues mentioned contained any traces of the same. This seems to show that in the well-fed animals a part of the absorbed fat was deposited in the adipose tissues, and that in the others it was used up or oxidized. If the fat is absorbed to only a limited degree then the amount of iodine in the blood must also be necessarily small; and this was found to be the case in observations conducted for the purpose. Now, the fat undoubtedly disappears within a few hours from the site of injection in these starved animals, and the question will naturally be asked, Where does it go? Winternitz claims that it is simply present as a foreign body in the tissue spaces, and in this way spreads itself over a large area of the body; but it

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conditions present in the intestine do not hold here. Believing that if the fat were given subcutaneously in the form of an emulsion it would more closely simulate the natural conditions, Winternitz made such a preparation combined with a pancreatic ferment. But these attempts also resulted in failure, for not only was the degree of absorption even less, but, in spite of all precautions, the danger of infection was always imminent here as in the other cases.

The unfavorable results obtained by this observer would warrant the conclusion that the value of subcutaneous feeding is very questionable, and that, in view of the dangers and uncertainties of the procedure, it had, perhaps, better be given up and relegated to the scrap heap of abandoned therapeutic suggestions.

"TELEPHONE TERRORS."

Among the so-called modern improvements there is none which has gained more rapidly in general use than the telephone. Of its importance and advantage there can be no question, and now that the labors of the electrical engineer have resulted in the production of a fairly perfect instrument and service, there are certain undeveloped features in connection with its use which call for advice and study by his sanitary confrère. It must unfortunately be admitted that as regards the public telephones but little attention has thus far been paid to the sanitation of either the instrument or its surroundings. In many places a booth of some sort is provided to insure privacy, but as noted in a recent article with the above title in the *Municipal Journal and Engineer* (Vol. XXI, No. 3), there is little attempt made either to ventilate or to clean it. When not in use the door is invariably closed, so that whatever emanations may have been given forth by the last occupant are not permitted to escape, and its construction is of such a type that it can be kept clean only with difficulty. Then of perhaps greater importance is the condition of the mouthpiece of the instrument, which serves as a very efficient catch-basin for a variety of undesirable products. It has been conclusively demonstrated that during speech minute particles of saliva are expelled, which contain in many cases germs of various kinds, in consequence of which surgeons have been accustomed to wear some sort of guard over the mouth and to indulge in as little conversation as possible during the course of an operation. One can readily imagine what a collection of material is deposited during the course of the day into the mouthpiece of even a moderately used public telephone instrument.

Improvements are certainly indicated, and as our health authorities can exercise their power in reference to cleanliness of other public utilities, there seems no good reason why it should not be extended to the telephone system. It would be a simple matter, for example, to require that the door of a booth be kept open by means of some suitable contrivance when the 'phone is not in use, in order that it may at least be aired. An attachment could also be devised for the instrument by which the mouthpiece could be rendered a source of less danger. Surely the ingenuity with which the American is usually credited can be exercised to devise some means, effective and yet inexpensive, by which the desired result may be accomplished. It may be necessary, however, that the public mind be aroused by newspaper comment and otherwise before the matter is taken up by the proper authorities and called to the attention of the telephone companies.

Thyroid Migraine.

Migraine is apparently one of those conditions for the relief of which therapeutic suggestions never seem to decrease either in number or variety, and the prevalence of the complaint furnishes plenty of material for their trial—and subsequent abandonment in many cases. The disturbance itself probably depends on a variety of causes other than eyestrain, and it is useless to apply remedies without a careful study of the particular case in hand, an omission, unfortunately, only too prevalent. Among numerous etiological factors disturbances of the thyroid gland appear in certain instances to play an important part, as demonstrated by careful observations made among others by Levi and Rothschild (*Wiener klinische Wochenschrift*, No. 28, 1906), who report a series of cases in which treatment with thyroid extract was followed by well-marked improvement in the pa-

tients' symptoms. In all of these cases there were phenomena present which corresponded with the clinical picture of a chronic hypothyroidism of a benign type, including metrorrhagia, fatigue, chilly sensations, loss of appetite, pains in the joints, constipation, and trophic disturbances of the nails and hair. The relation between migraine and the thyroid may also become evident during pregnancy, when an increased functional activity in this organ, so frequently noted, is accompanied by a complete disappearance of the "sick headaches" previously complained of by the patient. The appearance of migraine at the time of puberty and its spontaneous disappearance during the climacteric may also be looked upon as bearing some relation to certain physiological changes in the thyroid gland coincident with these periods. The apparent proof of this connection seems to be shown, however, in the benefit derived from thyroid treatment, which, as already noted, has been followed by relief from pain. At any rate the suggestion that the remedy be tried in cases of migraine of undetermined origin is worthy of trial.

Albuminuria Following Kidney Palpation.

A number of years ago the interesting observation was made by Menge that albumin frequently appeared in the urine of patients who were the subjects of renal ptosis after these organs had been examined by palpation. Schreiber (*Zeitschrift für klinische Medizin,* Vol. 55, No. 3) has made some further investigations along these lines, and as a result of his observations concludes that this albuminuria is a constant phenomenon in these cases; indeed, he was able to demonstrate it with absolute certainty in thirty-nine out of forty-two patients examined. The albumin was found in the urine within ten or fifteen minutes after palpation was begun, and disappeared usually within the same length of time, although sometimes it persisted for two hours. In those specimens which were examined microscopically there were found, in addition, renal epithelium and red and white cells, but no casts. Schreiber believes that the albumin appears in the urine because the blood serum is forced directly through the walls of the capillaries by the pressure of the examining hand. When contraction of the abdominal muscles interferes with proper palpation the phenomenon in question cannot be elicited, but when palpation can be effected an albuminuria will result, even when only one pole of the kidney is compressed. In cases in which this condition persists beyond the day of the examination, it must be assumed that the kidney is acutally diseased. Schreiber thinks this phenomenon may be made use of in the differential diagnosis of certain abdominal conditions. Thus, if there is some doubt whether a certain area of resistance encountered during an abdominal palpation is due to the liver, gall-bladder, spleen, or kidney, the appearance of an albuminuria such as that described will point to the kidney as the source of the same.

Trauma and Diabetes.

Although long a matter of conjecture, the actual etiological connection between trauma and diabetes or glycosuria has never been fully cleared up, notwithstanding the numerous experimental studies which have been devoted to this subject. From a closer examination of the literature, and as a result of his personal observations, Kausch (*Zeitschrift für klinische Medizin,* Vol. 55, No. 3) believes that we may group these cases in four classes, depending on the severity of the glycosuria, as follows: (1) True chronic diabetes; (2) curable diabetes or glycosuria; (3) ephemeral or spontaneous, and (4) alimentary glycosuria. Kausch found that a true diabetes is often reported after head injuries, particularly of the occipital region, but doubts whether this is actually produced by trauma, as no definite proof has ever been brought forward of such connection. True diabetes can never be cured; it merely, according to Kausch, remains latent for a time. A "cure" exists only when the patient is able to ingest large amounts of carbohydrates, sugar excepted, without producing a glycosuria. Opposed to the noncurable is the transitory form of diabetes, or, more properly speaking, glycosuria, in which the amount of sugar is not great, but the polyuria is marked. This type may follow a trauma, and, like the ephemeral variety, persists for only a few days. But in the latter there is no polyuria, and the quantity of sugar is also small. An alimentary glycosuria was noted in several cases after trauma, the maximum amount of sugar being 0.43 per cent. These forms of transitory glycosuria have usually been noted after injuries to the skull; but whether they are due to the shock, to the psychic effect, or to mechanical causes, it is impossible to determine from the data at hand.

The Pathogenesis of Icterus.

Formerly it was universally taught that jaundice was invariably due to mechanical obstruction somewhere along the course of the biliary passages, until the discovery was made that in addition to the hepatogenous there was also a hematogenous variety of icterns. The latter was found to be due to the disintegration of large numbers of red blood cells in the vessels. But as the change of the blood pigment into bile pigment undoubtedly takes place within the liver itself, this distinction was again abandoned. Minkowski, writing in the *Zeitschrift für klinische Medizin,* Vol. 55, No. 3, has recently suggested that icterus may also be due to a functional disturbance in the secretory processes residing in the hepatic cells, by which the direction of the stream is changed and the bile finds its way directly into the circulation from the liver cells instead of being guided into the hepatic ducts. Eppinger has also claimed as the result of his microscopical investigations that icterus may result from a stasis in the bile capillaries, resulting in a rupture of the latter and the entrance of the bile into the lymphatics and from these into the blood. Minkowski believes that although this variety may exist, an icterus by "parapedesis" is also possible.

News of the Week.

Meeting of the American Medical Association.—The date set for the meeting of the A. M. A. at Atlantic City is June 4, 5, 6, and 7, 1907. An endeavor was made to arrange dates with the executives of the Congress of Physicians and Surgeons, so that the meeting of one body should immediately follow that of the other, but this was found to be impracticable.

Behring's Tuberculosis Remedy.—True to his promise made to the International Congress on Tuberculosis in Paris last autumn, Behring announces that the new remedy is ready for delivery in small quantities to clinicians who are in posi-

tion to make satisfactory tests. He is not ready to put the remedy on the market, as it has not yet been sufficiently tested, but hospital physicians will receive it in small amounts free of charge. The remedy, which is called tulase, may be given hypodermically or per os.

Transfer of Quarantine Stations.—The South Carolina quarantine stations have been transferred to the general government, and will in future be under the control of the U. S. Public Health and Marine Hospital Service. The transfers are in the form of leases for five years at the nominal rate of five dollars per annum.

A Naval Medical Officer Dismissed.—An assistant surgeon of the navy who was recently tried by courtmartial on the charge of cribbing while undergoing an examination for promotion, has been sentenced to dismissal from the service. The court found him guilty of conduct unbecoming an officer and a gentleman in that during the examination he communicated with a fellow officer and obtained assistance from him in answering questions. The man from whom the accused asked and obtained information was also tried and sentenced to a loss of fifteen numbers in rank.

The Dedication of the Harvard Medical School will take place, it is announced, on September 26. President Eliot will make the dedicatory speech, and addresses on behalf of the departments of anatomy, surgery, and internal medicine will be made by Drs. Dwight, Warren, and Shattuck. The addresses will be limited to ten minutes each, and none of the rich men who have built the school will be allowed to say a word.

The Brooklyn Hospital for Contagious Diseases.—Many residents of Brooklyn have joined in a protest against the continuance of the hospital for the treatment of contagious diseases on Kingston Avenue. The Board of Health has made application for an appropriation of $325,000 for certain repairs and the erection of a diphtheria pavilion, and those who ask for the removal of the hospital will oppose the grant when the matter comes up for consideration before the Board of Estimate and Apportionment next month. It has been suggested that the hospital be removed to Barren Island.

Establishment of Tuberculosis Camp at Dunning (Illinois).—The Chicago Tuberculosis Institute was recently granted the privilege of establishing a camp for the benefit of consumptives in the grounds of the Cook County Institutions, at Dunning, Ill. This camp, it is said, will be kept open until November 1, and the first inmates will be twenty female patients. The attending staff consists of Drs. Henry B. Favill, Ethan A. Gray, and Theodore Sachs.

Iowa State Hospital for Tuberculosis.—At the recent meeting of the Iowa State Legislature an appropriation of $50,000 was made for the purchase of a site for the proposed State Tuberculosis Hospital. The Board of Control has selected a tract on the high ridge separating the valleys of Beaver Creek and the Des Moines River; this is the highest point in that part of the State, and from it a view is had in any direction over from ten to twenty miles of country.

A Tuberculosis Ward for a Public Hospital.—It is proposed to build a special open-air ward for the treatment of the tuberculous patients in the Douglas County, Neb. (Omaha) Hospital. The ward will be constructed by adding an extension to the west portion of the hospital.

A New Hospital for Tuberculosis in Staten Island.—Plans have been filed with the Building Department for the new tuberculosis hospital which it is proposed to erect in Richmond borough on land purchased not long ago near the present City Farm. The hospital is to be known as Sea View Hospital. The buildings will be eight in number, each four stories in height, and about 80 feet by 137 on the ground plan.

A Southern California Health Camp.—Sufficient money is now available to provide for the purchase of the tract desired for the Health Camp which it is proposed to establish near Pasadena, on the road to Linda Vista, and also for the erection of the central building, in which will be located the offices, dining room, and reception rooms.

Large Bequests to Charities.—According to the will of Isaac Glazier, who died in Germany in June of the present year, $2,500 each is given to the Mount Sinai Hospital, the Hebrew Technical Institute, the Montefiore Home for Chronic Invalids, the Hebrew Benevolent and Orphan Society, the Home for Aged and Infirm Hebrews, and the Hebrew Educational Alliance. The will also directs that $25,000 be devoted to charitable and benevolent institutions besides, of which $15,000 will go to institutions in San Francisco, and $5,000 to institutions in Frankfort-on-the-Main, Germany.

The Ear as an Index of Character.—A despatch to *The Sun* says that, at the Congress of German Anthropologists, recently held at Görlitz, Prof. Blau read a paper on the formation of the ears of criminals and lunatics. He had taken accurate measurements of 1,061 ears, of which 255 belonged to lunatics and 343 to criminals, and concluded that in a vast majority of cases the external ear is larger in criminals and lunatics than in normal persons. This is especially noticeable in the helix and in the lobe. The larger the helix is the lower is the state of mental development. Abnormal development of the helix is especially noticeable among criminals charged with sexual crimes.

An Epidemic of Rabies in Lisbon.—The London *Express* says that there was a remarkable prevalence of hydrophobia in the capital of Portugal at the beginning of this month. Within less than a week 123 mad dogs and cats were killed in the streets, and many persons were bitten and treated at the Pasteur Institute. A party of German tourists landed at Lisbon recently from an excursion steamer. Several members of the party were bitten by a mad dog before they had been in the city two hours and were taken immediately to the Institute.

Yellow Fever.—Dr. C. H. Irion of the Louisiana Board of Health announced on Sunday of this week that a case of undoubted yellow fever had been discovered at New Iberia in the person of a mulatto boy, twelve years old. The boy was living in a sparsely settled portion of the town, and it is not known how the case originated. There have recently been two cases reported in Havana and one in Matanzas, and at Santiago de Cuba one Sister of Charity has died and another is ill with a disease suspected to be yellow fever.

Reform Necessary in the Illinois Insane Asylums.—In its quarterly bulletin, recently issued, the Illinois State Board of Charities announces a reform in the management of the State Asylums for the Insane. The bulletin says that the Board

found the hospitals for the insane topheavy on the custodial side. "The superintendents are burdened with business details that prevent them from giving sufficient attention to medical administration. The hospitals are more like great detention boarding houses than places for the modern treatment of hopeful cases and the industrial reeducation of chronic types."

The American Academy of Ophthalmology and Otolaryngology.—The eleventh annual meeting of this association will be held at the Hotel Oakland, St. Clair, Mich., August 30, 31, and September 1, 1906. St. Clair is on the St. Clair River, fifty miles north of Detroit. Any member who wishes to show clinical cases or make a demonstration of instruments, or who wishes to show any collection, is requested to communicate with Dr. Louis J. Goux, Stevens Building, Detroit. The secretary of the Academy is Dr. George F. Suker, 100 State Street, Chicago.

The International Medical Association of Mexico will hold its second annual meeting in the City of Mexico November 14 to 17, under the presidency of Dr. R. D. Robinson of Torreon. Members of the profession in the United States and Canada are cordially invited to be present. All the papers and the discussion will be in English. The secretary is Dr. W. R. Jamieson, Torreon, Coah.

A New Medical Society in Virginia.—The physicians of Brunswick and Mecklenburg counties, Virginia, met at La Crosse on August 14 and organized a new medical society. Officers were elected as follows: *President,* Dr. W. W. Wilkinson of La Crosse; *Vice-Presidents,* Drs. Hunter Marrow of Union Level and Herbert Lewis of Lawrenceville; *Secretary,* Dr. S. T. Jett of South Hill; *Treasurer,* Dr. B. T. Montgomery of Red Lawn.

A New Medical Society in Quebec.—The physicians of Nicolet County, Quebec, have founded a county medical society, the following officers being elected for the first year: *President,* Dr. H. Veilleux, Ste. Gertrude; *Vice-President,* Dr. Trudel, St. Gregoire; *Treasurer,* Dr. P. V. Landry, Becancour; *Secretary,* Dr. L. S. Giroux, Gentilly.

The Augusta County (Va.) Medical Society.—At the annual meeting of this society, held August 8, the following officers were elected: *President,* Dr. J. W. Freed; *Vice-Presidents,* Drs. Alexander, Whitmore, and Roller; *Treasurer,* Dr. T. M. Parkins; *Secretary,* Dr. M. J. Payne.

Dr. C. S. Millet of Brockton has been appointed secretary of the newly-established Massachusetts State Tuberculosis Commission.

Obituary Notes.—Dr. M. L. Greenfield of Rockland, Mass., died suddenly on August 9. He was born in Orwell, N. Y., forty-seven years ago, and was graduated from the New York University Medical School in 1884. He practised for twenty years in Verona, N. Y., and removed to Rockland in October, 1905.

Dr. William Edwin Taylor died in Honolulu on August 30, at the age of sixty-nine years. He was born in Virginia and entered the medical corps of the Navy in 1859. He was retired for ill health in 1881 with the rank of Medical Inspector. For eighteen months he was professor of surgery in the University of California, and for a portion of that period was president of the San Francisco Medical Society. He went to Honolulu to live in 1898. There he served at various times as president of the Hawaii Medical Society and as a member of the Board of Medical Examiners and the Board of Dental Examiners of the Territory.

Dr. S. S. Meadon died on August 6, at his home near Hartsville, Tenn., at the age of eighty-two years. He served as surgeon in the Confederate Army, and at the close of the war resumed the practice of medicine in Nashville and later in Gallatin. He retired to his country home a few years ago.

Dr. H. D. Harris of Jackson, Tenn., died on August 7, after an illness of one week. He was graduated from the Muttshaus Medical School in 1861 and served in the medical corps of the Confederate Army throughout the war, where he distinguished himself on numerous occasions for his bravery and devotion to the cause of the sick and wounded under his care.

Dr. Frederick A. Roberts of Wilmington, Mass., died on August 11, following an operation for appendicitis. He was born in Waterboro, Me., in 1873, and was graduated from the Medico-Chirurgical College of Philadelphia in 1901.

Dr. Daniel Ellison of Ashland, Va., was drowned on August 12, while fording a swollen stream on his way to visit a patient. He was graduated from the College of Physicians and Surgeons, Baltimore, in 1879.

Dr. Henry Austin Gould died at Minneapolis on August 7, aged, eighty-three years. He was born in Norridgewick, Me., and began his working life as a machinist. In 1868 he became a Congregational minister in Wisconsin, but soon took up the study of medicine and was admitted to practise in 1874. In 1885 he retired.

Dr. Charles Albert Cochrane of Augusta, Me., died August 13, at the age of seventy-three years. He was born in Monmouth and was graduated from the Medical School of Bowdoin College in 1856.

Dr. J. W. Elliott of Deposit, N. Y., died August 9, after an illness of over two years' duration, at the age of seventy-one years. He had been in practice nearly fifty years.

Dr. J. W. Ferguson of Shawhan, Ky., died August 10, at the age of fifty years. He was born in Williamstown, Ky., and was a graduate of the Medical Department of the University of Louisville in the class of 1889.

Dr. Charles D. Hunt of Atlanta, Ga., died August 12, at the age of sixty-three years. He was born in Russell County, Ala., July 26, 1843, and was graduated from the Medical Department of the University of Georgia in the class of 1871. He had practised in Atlanta since 1892.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE SCIENTIFIC CONGRESSS PRESIDENT'S ADDRESS — HYDATIDIFORM MOLES—THE LATE MR. BEIT'S LEGACY—ROYAL CHARTER SOUGHT BY SUNDAY HOSPITAL FUND.

London, August 3, 1906.

The British Association for the Advancement of Science is holding its seventy-sixth annual meeting at York, in which city it met twenty-five years ago and in which it took its origin fifty years earlier. The new President is Professor Ray Lankester, who delivered his address on Wednesday, taking as his subject the progress of science during the twenty-five years since the previous York meeting. He declared that, exciting and of entrancing interest as are some of the discoveries, there has been nothing to indicate that we are on a wrong path—nothing that cannot be accepted by an intelligent modification of previous conceptions. Though some onlookers have told the public that science is at an end, others have asserted that the new discoveries are inconsistent with the foundations of knowledge and justify every absurdity of unrestrained fancy. These two mutually destructive accusations are due to ignorance or traditions of self-interest, and one object of the Association

is to show that science has not come to the end of her work, but has only given a foretaste of what is in store for mankind.

The President then passed on to consider the developments of chemistry, referring to the discovery of five inert gaseous elements by Rayleigh and Ramsay, and then to the finding of radium by the successive efforts of Henri Becquerel and M. and Mme. Curie. "There can be no doubt," he said, "that the past quarter of a century will stand out forever in human history as that in which new chemical elements, not of an ordinary type, but possessed of truly astounding properties, were made known with extraordinary rapidity and sureness of demonstration." Of these he dwelt on radioactivity as the discovery surpassing all others in respect of the novelty of the properties of matter so suddenly revealed. A new conception of the structure of matter, he pointed out, was necessitated by it, and yet so far from being disconcerting, this new conception, he held, fits in with and justifies older schemes. He then passed in review some of the most marvelous facts and deductions necessitated by the discovery, including the work that has been done as to the nature and possible transformation of atoms and the speculations on astral chemistry. Turning from radium, the president discoursed on electricity, chemistry, and astronomy, and closed this section with the remark: "And yet M. Brunettière and his friends wish us to believe that science is bankrupt and has no new things in store for humanity!" Coming to physiology, the professor referred to the discovery of the continuity of protoplasm through the walls of the vegetable cell as a most startling fact in connection with plant structure. He is inclined to agree with those who hold that the simplest form of life at present existing is a highly complicated structure—a nucleated cell, though that does not imply that simpler forms of living matter have not preceded those we know. But improved methods and increased knowledge have made an end of the arguments for abiogenesis.

I must pass from these and other interesting subjects to what the president had to say on disease and hygiene. He condemned energetically the parsimony which assigns paltry sums—a mere nothing, a few thousands—to investigations having for object the destruction of disease, while the people are dying by thousands of preventable diseases. He deeply regretted that there was no general desire to bring the advances of science to bear on the welfare of the community. "If the people of Britain wish to make an end of infective and other diseases they must take every possible means to discover capable investigators and employ them for this purpose."

In conclusion the president said: "It seems to me not inappropriate that a society for the advancement of science should have taken its origin under the walls of Yorkminster and that the clergy of the great cathedral should have stood by its cradle. It is not true that there is an essential antagonism between the scientific spirit and what is called the religious sentiment. 'Religion,' said Bishop Creighton, 'means knowledge of our destiny and of the means of fulfilling it.' We can say no more and no less of science. Men of science seek, in all reverence, to discover the Almighty, the Everlasting. They claim sympathy and friendship with those who, like themselves, have turned away from the more material struggles of human life and have set their hearts and minds on the knowledge of the Eternal."

Dr. James Oliver has communicated to the Gynecological Society a study of hydatidiform mole with records of three cases. He holds there is no such thing as a decidua reflexa. With regard to menstruation, he did not believe in the denudation theory. Retention from imperforate hymen was against it. Hydatidiform mole was degeneration of the varicose surface of the chorion, many of its processes becoming converted into cystlike bodies. It was independent of uterine influence, solely due to an aberration of the germ plasm. This aberrant product can develop in a uterus concurrently with a normal one; *i.e.* two germinal elements have been fertilized, one taking an abnormal, the other a normal course. The change which produces a vesicular mole begins at an early stage, between the third and sixth weeks, while the allantois is active, before differentiation in the chorionic villi; hence it rarely happens that a semblance of an embryo is to be found in the débris. A mole may occur in a woman who has had healthy children or in one who has never been pregnant. Among the symptoms pain is often complained of, but seldom until the hemorrhagic discharge attracts attention. In the early days there may seem to be only pregnancy; later we are confronted with intrauterine death. The diagnosis was considered by Dr. Oliver and his three cases described.

Dr. Macnaughton Jones communicated a case and advocated curettage after every suspicious mole. Dr. Heywood Smith thought in that case the curettage was justifiable, as he did not think the specimen possessed the characteristics of hydatidiform mole. He suggested that the regeneration of villi began earlier than Dr. Oliver had stated. Dr. Aarons asked about the subsequent history. Different opinions were expressed by other speakers as to pain, and one held that it had not been proved that conception was necessary for the production of moles.

In replying to the several views put forward, Dr. Oliver said he did not think it possible for change in the villi to take place before the third week. No doubt the condition was inherent in the oosperm as soon as the coalescence of spermatozoon and ovum occurred. There was a tendency to produce a mole, but it could not be selected until the ovum was placental. As natural conception might occur later, he did not advocate curettage. According to the pathology of chorionic epithelioma, moles seem to have a tendency to imbed themselves in the uterus, and it was a question whether mere curettage would prevent cases becoming malignant later. He could not explain pain. It was the same as in other conditions. He did not think it due to an attempt of the uterus to expel the mole. He believed all moles were alike; microscopically they did not differ. He did not think it possible for a hydatidiform mole to occur in a woman who had not had sexual intercourse. The mole was unquestionably due to the fertilization of the germ plasm.

The late Mr. Beit bequeathed £25,000 to the proposed Institute of the Medical Sciences in connection with the London University, £20,000 to Guy's Hospital, a like sum to King Edward's Hospital Fund for London, and another sum of £20,000 to his trustees to distribute among London charitable institutions.

The Hospital Sunday Fund has submitted a petition for the grant of a royal charter. Any petition against it must be lodged at the Privy Council office before September 3.

OUR PARIS LETTER.

(From Our Special Correspondent.)

MALARIA IN MADAGASCAR—ROENTGEN RAYS FOR GRAY HAIR—RADIOTHERAPY OF CANCER—SUTURE OF THE HEART—DEATH OF PROF. BROUARDEL.

PARIS, July 30, 1906.

At a recent meeting of the Academy of Medicine an interesting discussion took place regarding malaria in Madagascar. Professor Blanchard cited statistics to prove the progressive increase of this disease in the island, especially in the larger cities, as in Tananarivo, for example—a city which was nevertheless reported to be the least insanitary of all in Madagascar. The present epidemic, of wide extent and very fatal, was due indirectly to the great works of public utility which had been carried out, especially to the building of the railroad between Tamatava and Tananarivo. The laborers engaged in these works, suffering from malaria, carry the infection with them from one part to another, the development of the disease being also favored by the excessive humidity of the climate. Two varieties of mosquito, *Myzomyia funesta* and *Pysctophorus costalis*, seem to be the agents for the transmission of the hematozoan parasite, most to be feared in Madagascar. The habitat of these mosquitos is being gradually extended so as to include even the elevated tablelands, which are thus losing their reputation for salubrity. Up to the present the only measures taken have been to facilitate the use of quinine by the malarial sufferers, but this seems to have been insufficient in restricting the epidemic, and the author proposed that the Academy should adopt resolutions calling for the institution of more effective prophylactic measures. M. Kermorgant said that the Government, in its efforts to suppress the epidemic, had ordered the draining of the marshes, the cutting down and burning of brushwood, the circulation of pamphlets of instruction, the free distribution of quinine, etc. But, despite all these measures, there was always a marked recrudescence of malaria in the rainy season—a phenomenon observed in Tonquin and the island of Réunion, as well as in Madagascar. One of the most efficacious measures was thorough screening of doors and windows, but it was difficult to apply this universally. Professor Laveran said the principal product of Madagascar was rice and the cultivation of this necessitated swamps, the drying up of which would simply substitute starvation for malaria. To this Blanchard replied that it was not proposed to dry up the rice fields, but only to fill up the pools around the houses and other artificial collections of water. The work of the Americans in Cuba had consisted in filling up the puddles and in removing tin cans and other hollow objects in which rain water collected. Those measures had been eminently successful in reducing the number of mosquitos. On the other hand, in Italy, where the peasants live in cabins the authorities had adopted the plan of screening doors and windows, with perfect success. At the close of the discussion the Academy adopted a resolution calling for

the appointment of a commission at Tananarivo to investigate the causes of the increase of malaria in the island and to determine upon the best measures for combating the spread of the infection.

An interesting and original communication on the pigmentation of hair by *x*-rays was presented to the Academy of Sciences by MM. Quibert and Marquès. These authors had observed that the hair of the scalp and beard became markedly pigmented when exposed to the prolonged action of the *x*-rays, and this pigmentation appeared to be lasting. Even perfectly gray hair was darkened by the *x*-rays and the color so produced had remained unchanged for months. The change was not necessarily preceded by a falling of the hair.

M. Barbario recently reported to the Society of Hospital Internes a case of recurrent alveolotubular carcinoma of the breast completely cured in two months by exposure to the Roentgen rays combined with the internal administration of magnesium chlorate.

Two cases of suture of the heart were reported to the Surgical Society by M. Rochard. The operation was performed in each instance by Lenormant. Commenting on the cases, the speaker said that in syncope occurring under anesthesia one should, as a matter of last resort and when artificial respiration, tongue traction, etc., had been tried without avail, employ massage of the heart. The author favored the subdiaphragmatic method of approach to the heart, for in syncope the diaphragm is always relaxed, which renders it possible to seize the ventricular portion of the heart and so to massage the organ in spite of the intervention of this muscular partition. Of five recorded cases this measure had been definitely successful in three. M. Manclaire would try the subdiaphragmatic method first, but if this was unsuccessful he would divide the diaphragm and seize the heart directly, for in so doing one could better aid the coronary circulation.

A great medical figure has disappeared in the person of Professor Paul Brouardel, who died from an incurable malady in the course of a few weeks. He was born in 1837 at Saint-Quentin and obtained his degree in 1865. In 1869 he was appointed professeur agrégé at the Faculté de Paris, and was nominated full professor of legal medicine in 1879. He was elected a member of the Academy of Medicine in 1881 and in the same year was made dean of the medical faculty of the University of Paris. In 1892 he became a member of the Institute. He was a grand officer of the Legion of Honor and was the possessor of many foreign orders conferred upon him when filling important scientific missions as the official representative of France. Brouardel was one of the first great scientists devoted to the subject of municipal hygiene, and he did much to demonstrate the importance of this science in a sociological sense. He devoted much of his life to the combat against tuberculosis, and early in his career he had preached the doctrine of the spread of typhoid fever by means of a contaminated water supply. In legal medicine Brouardel leaves a name universally respected. He was director of the laboratory of the morgue of which he made with his practical spirit and his scientific attainments a model teaching institute. He won for medical jurisprudence the respect of all in demonstrating its value as an aid to the administration of justice. The value of the services rendered by him to his country will keep the name of Brouardel ever in remembrance. His death is a grievous loss to French medicine.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

INTESTINAL MYIASIS—PREVENTION OF VENEREAL DISEASES—LYSOL POISONING—SPEECH PERCEPTION—THE CHARITÉ HOSPITAL—HYPEREMIA IN TUBERCULOSIS—THE VIRCHOW MONUMENT.

BERLIN, July 4, 1906.

A PAPER on intestinal myiasis read by Wirsing before the Society for Internal Medicine was of great practical interest. The speaker said that the larvæ of three kinds of diptera were found in animals, causing cutaneous myiasis due to the *Dasselfliege*, myiasis of the pharynx in sheep caused by the *Œstrus*, and intestinal myiasis in horses caused by the *Gastrophylus duodenalis*. The occurrence of human myiasis was very rare, though Schlesinger had quoted somewhat over a hundred cases. Wirsing had seen three cases caused by the common fly; in one of these the infection had taken place per anum, and among the symptoms produced were restlessness, diarrhea, intestinal cramps, and attacks of hallucination. Danger arose through erosion of the intestinal wall, hemorrhage, and inanition. Good results followed the use of purgatives, especially calomel and the bitter mineral waters, and the various anthelmintics.

At the last session of the Berlin branch of the German Association for the Prevention of Venereal Diseases, Oppenheim read a paper intended especially for the instruction of the laity. He said that the nervous system of the modern man was very irritable, as a result of the civilization of to-day. Gonorrhea sometimes though but rarely gave rise to diseases of the nervous system, such as meningitis or neuritis, causing disorders of gait similar to those of tabes. Syphilis, on the other hand, was responsible for many nervous affections. Raymond of Paris was right in saying that without syphilis and alcohol the specialists in nervous diseases would lose their occupation. In order to illustrate the fact that iodine and mercury are very effectual in many cases, but not so in others, the speaker compared syphilis to a fire breaking out in a building adjoining a palace, this palace being the nervous system. In case the drugs mentioned were effective, the palace was protected by plenty of water, but if this were not so the palace might be regarded as containing great quantities of explosives which were reached by the fire and destroyed the edifice. The fire caused the explosion, but the destruction was due to the explosive substances. Syphilitic diseases of the nervous system were to be avoided by early treatment and strict obedience to the medical adviser.

Much discussion followed the reading of a paper before the Society for Internal Medicine by Blumenthal, on lysol poisoning. Lysol, he said, was a solution of cresols in soap and acted as a corrosive poison, with a particular affinity for the nervous system. It was but slowly absorbed and rarely gave rise to vomiting; the blood was not affected and showed no morphological alterations. The muscles, brain, and lungs contained about the same amount of the cresols, the liver holding most of it. In investigations on dogs the author had found that fatty tissues contained even more than the liver, and he concluded that the lipoid tissues dissolved such bodies and served to bring the poison into contact with the body cells. Lysol poisoning was usually recovered from in three or four days, without permanent damage. The treatment recommended consisted in washing the stomach with milk, and intramuscular injections of digitalis. In the discussion Burghard pointed out that very serious cases also occurred, with symptoms of great gravity, lasting for weeks and even ending fatally. He had used magnesia and subnitrate of bismuth with good results in the treatment. Westenhoeffer had observed tracheitis, bronchitis, and pneumonia, Mosse and Hirschfelt, nephritis as the result of poisoning with this agent, and Plehn stated that in fifty cases he had seen pneumonia but once and only one patient had died.

A paper on a subject rarely discussed in medical circles was read by Gutzmann before the same society, on the limits of the perception of speech. Speech, he said, was perceived by hearing, feeling, and sight; these senses being highly cultivated by man. In order to investigate this subject he had studied the powers of perception for long series of disconnected syllables. In dictating indoors 111 words devoid of sense with 233 syllables, twenty-six mistakes were noted, and on repeating the experiment in the open air it was found that the number of errors was increased and that the person under observation exhibited less acuity of hearing. For the perception of speech by sight the movements of the lower jaw, lips, cheeks, and the roof of the mouth came into consideration. Of great importance for the recognition of sounds was the knowledge of the words most often used; the three German words *die, der, und* comprised nearly 10 per cent. of ordinary speech, and sixty-six words comprised nearly 50 per cent.

Two departments of the renovated Charité Hospital have been recently opened. On June 10 the formal exercises were held in the old building, which has become celebrated through Virchow's work. The new pathological building was inspected by the guests and an address of dedication was delivered by Prof. Orth. On June 11 the new Dermatological Hospital was opened by Lesser, who in his address pointed out the great development of this branch of medicine and especially commented on the significance of the discovery of the *Spirochæta pallida* as the causative agent of syphilis. Beautiful demonstrations of the organism were exhibited by Hoffmann.

At the third convention of the German Society of Tuberculosis Physician Kuhn demonstrated a method for curing early tuberculosis by hyperemization by means of his aspirating mask. He stated that an important reason for the frequent localization of the disease in the pulmonary apex was to be found in the anemia due to imperfect respiration. He had designed a mask which was intended to prevent breathing through the nose and thereby produced hyperemia of the lungs by congestion. Inspiration was made more difficult and was therefore prolonged, but expiration was free, and the congestion accompanying the use of the mask could be demonstrated with the Roentgen rays. Hemoptysis was never produced, and forty patients treated by this method showed marked improvement both locally and in the general condition. Several of those who

took part in the discussion criticised the method, but Leyden spoke of it as being a welcome addition to the various other plans in use.

The physicians of Berlin are much interested in the monument to be erected in memory of Virchow. The commission has given the first prize to the design of the sculptor Klimsch, which portrays a man fighting against a fabulous monster, while Virchow's portrait appears only in a medallion on the base. The medical societies have protested against this selection, and would prefer a monument showing a full-length figure of the great pathologist. The commission has resolved to reopen the question, but no decisive action has yet been taken.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

RETURN OF CHOLERA—ORIGIN OF THE OUTBREAK—PECULIARITIES OF THE EPIDEMIC IN MANILA—GUARDING THE WATERSHED—PERSONAL NOTES.

MANILA, P. I., July 30, 1906.

A CHOLERA outbreak of considerable dimensions has occurred again in the city of Manila. For the week ending June 30 there have been sixty-three cases. The presence of the disease is undesirable at any time, but it is particularly unfortunate that it should make its appearance at this time of the year. The rainy season has just set in, and as the first two months of the same are usually characterized as the hot wet months, or, in other words, during July and August, cloudy skies, high humidity, temperature between 85° and 93° Fahrenheit are to be expected, it will be seen that the conditions are particularly favorable for the propagation of the cholera organism, as well as of flies, which are most likely to carry them about. The weather during these months corresponds closely to the conditions produced by the sirocco encountered in southern Europe, along the shores of the Mediterranean.

The disease had almost entirely disappeared from the Islands. Between May 22 and June 2 there was not a single case reported, either in the city or in the provinces. On this latter date, however, a case made its appearance in Pasig. From June 2 to 9 no further cases were reported. Upon this latter date, however, Pasig again showed three cases; June 12, four cases; June 14, five cases, and upon the 18th seven cases were reported. The importance of the presence of the disease at Pasig will be appreciated when it is understood that it is the center through which a large part of the traffic into and out of the provinces of Laguna and Rizal passes. It has a railroad line, river steamers, and wagon roads which lead in various directions. It has numerous market places and is a distributing center. On account of the foregoing, the appearance of the disease at Pasig is of considerably more importance than at many of the other provincial towns.

About June 18 the disease appeared more or less simultaneously in the towns of San Felipe Neri, Pandacan, and Cainta, in the province of Rizal; Siniloan, Pila, and Bay, in the province of Laguna; Malolos in Bulacan, and Angeles in Pampanga. The advocates of the theory that the disease is propagated by some fermentation or other mysterious process which goes on in the soil immediately came forward and pointed out that this was a full justification of their claims, but at best this explanation could not be regarded as satisfactory. It is thought more likely that the appearance of the disease at so many widely separated towns must be due to some more readily explainable cause.

A thorough inspection was made of the town of Pasig, and several days ago it was shown on fairly reliable testimony that a truck garden kept by a Chinaman had been fertilized with liquid human excreta. The annual religious pilgrimage, which took place this year during the month of May, to worship at the shrine of the Virgin of Antipolo, which is only a few miles from Pasig, lasts usually for thirty days, during which period it is estimated that upon some days as many as forty to fifty thousand persons are present. Investigation shows that in almost every instance the first persons who contracted the disease in the towns mentioned above were returning from Antipolo through Pasig, and had probably eaten some of the vegetables which were obtained in Pasig, and which were probably fertilized with some excrement which contained material from a cholera stool. A subsequent investigation has been made of this matter, and while it is difficult at all times to obtain thoroughly reliable information, still the evidence so far shows that in most of the towns in which the disease made its appearance, the first cases occurred among persons who had just arrived from Pasig. The secondary cases must have no doubt been due to contact.

In the town of Tanay, in the province of Rizal, there have already occurred 112 cases with 56 deaths. From Pasig the disease spread down the Pasig river toward Manila. The suburbs and outlying towns of Guadalupe, Pandacan, and San Felipe Neri soon became infected, and from these the infection spread to the city of Manila. During the week ending June 30 there were 63 cases, beginning with 2 on June 24 and ending with 23 on the last day of that week.

So far, the infection in Manila appears to be of a most virulent character. Practically all cases are found dead, the significance of which is that there are probably a large number of cases of cholera existing in Manila of which the health authorities know nothing, and in consequence the premises remain undisinfected, and each one is liable to become a center of infection. Unless the local physicians report cases more promptly, the advisability of prosecuting them is being considered.

Another noteworthy feature about the outbreak is the fact that the cases have occurred almost entirely among the poorer classes—none of the natives of the higher social scale, nor any Spaniards, Europeans, or Americans are so far known to have contracted the disease. This would indicate that the infection must be in the foodstuffs which are peculiar to the poor, but no particular food fits this description, unless it be the shellfish which they are in the habit of gathering near the mouths of the city sewers, some of the latter being probably infected. So far the cases have occurred in widely separated sections of the city. No two cases have occurred in any one house, nor in adjoining houses.

In view of the proximity of the disease to the Manila watershed, it was thought advisable to have the same guarded by the military. Accordingly the Governor-General requested Major-General Wood to detail a sufficient number of troops for this purpose. The troops proceeded to Mariquina the morning of June 28. In order that they may be vested with full authority, the Commission has passed a special act, which gives officers of the United States Army the authority of peace officers, and the power to make arrests of persons who violate the health regulations.

The municipal board of the city of Manila, in a special session held to-day, passed an emergency ordinance with a view to protecting the water supplies. It provides that the offenders may be brought to Manila and tried before the city courts.

Surgeon-General Rixey, U. S. Navy, arrived in Manila June 26, for the purpose of making a thorough inspection of the naval medical service in the Philippines. He has already inspected the new hospital which was recently completed at Cañacao, Cavite.

Dr. W. Ramsey Smith, head of the Health Department of South Australia, spent several days in Manila, during the week, in looking over the medical work being carried on here.

A WORD ABOUT RASHID, THE LEPER.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Under the heading "Senseless Cowardice" you comment in your last issue on the alleged ill-treatment to which this leper has been and still is subjected. I am not in a position to offer any correction to that part of your comment which relates to the treatment which this man has received in other States, for the only source of information I have on this is the sensational daily press. But I am in a position to state that as far as this concerns the "wilds of West Virginia" you are in error. I inclose a copy of the *West Virginia Medical Journal*, the official organ of the West Virginia State Medical Association, and a copy of a local paper, both of which contain articles on this subject by reliable eyewitnesses. From these articles you will see that the "educated medical men" did do their duty and did "quiet the unreasoning fears of the public," with the result that both before the leper left this State and after his return to it he was treated with all the consideration due a fellow man. It is true that he has been isolated, but every needed comfort was furnished him in the tent with which he has been provided, and a more permanent shelter for him is now in the process of erection. At the expense of the county in which he is now located a regular physician residing in the immediate vicinity is looking after his health. So far as this State is concerned, the newspaper reports can hardly be characterized as exaggerations; they are falsehoods. WILLIAM W. GOLDEN, M.D.

ELKINS, W. VA., Aug. 20, 1906.

The Uses of Etiquette.—Medical etiquette, instead of being kept up, as people so often imagine, in the interests of the doctors, is maintained in the interests of the public. It is they, not the doctors, who would suffer most were it done away with.—*The Spectator.*

Progress of Medical Science.

Boston Medical and Surgical Journal, August 16, 1906.

The Serum Treatment of Exophthalmic Goiter.—G. A. Waterman refers to the various theories as to the cause of this condition and records his experience in the use of serum derived from blood drawn from the jugular vein of the goat two weeks or more after the removal of the thyroid, the serum being used subcutaneously. Of the five cases reported, two were considered as cured, two improved, and one unimproved. He thinks that in the serum treatment we have an agent which influences the disease favorably, and may, with further modification, prove to be of more uniform value. It may be along this line or by the use of the cytotoxic serum, that we shall be able to find a specific means of relieving the distressing symptoms of a most troublesome disease.

New York Medical Journal, August 11, 1906.

Puerperal Fever Treated by Uterovaginal Drainage.—A. Ernest Gallant says that the excellent results obtained by the use of his bivalve cervical drain in cases of early miscarriage, sterility, and dysmenorrhea due to obstruction (see MEDICAL RECORD, November 22, 1902, page 836) seemed to warrant the enlarging of this drain and its adaptation to the cervical canal of the uterus recently emptied during the latter months of gestation. This keeps the internal os well open and does not plug up with blood and serum. The diameter is large enough for the introduction of a catheter through which to introduce irrigating fluids without removing the drain. The bivalve drain not only affords easy exit for the lochia, but acts as a foreign body and excites uterine contractions and promotes involution. During the puerperium the woman should not be allowed to lie upon the back, but always upon the side or abdomen. A few cases are related, illustrating how the drain works when in practical use.

Gleanings Concerning Menstruation.—James Oliver in 1887 endeavored to show that the menstrual discharge in the human female was not a concomitant of a more or less extensive shedding of the uterine mucosa, and clinically it was difficult to believe that it essentially was an outpouring of blood from vessels whose integrity had been destroyed by a gross process of disintegration. Speaking generally the uterus behaves like a glandular structure, and it is to this behavior more especially that he draws attention. He recapitulates Heape's description of the changes observed by him in the case of the *Semnopithecus;* he speaks of four menstrual periods which are subdivided into eight stages. In speaking of the stage of formation of the menstrual clot Heape says: "The full extent of the act of denudation is reached, the severe action disclosed being almost worthy of the term devastating. All over the body and fundus of the uterus the superficial portion, about one-third of the mucosa, including uterine and glandular epithelium, stroma and blood-vessels, is cast away, leaving behind a ragged wreck of tissue, torn glands, ruptured vessels, jagged edges of stroma, and masses of blood corpuscles, which, it would seem hardly possible, could be satisfactorily healed without the aid of surgical treatment." It is evident that our knowledge of the mechanism and utility of the menstrual function, and of the structures which participate directly in the production of the menstrual discharge itself, is still very meager. Regarding the evolution of menstruation we know absolutely nothing.

The Importance of Abdominal Examination Before Insurance.—Samuel P. Gerhard believes that the examination of the abdomen is woefully neglected by most medical examiners for insurance, and he relates a case to show the importance of greater care in the examination of applicants, and the great annoyance that could be averted if examiners were more thorough.

The Function of the Testicle.—Hubert Richardson says that the changes produced by castration are confined principally to the genitalia and breasts, the bones, the skin and appendages, the muscles, the glands and internal organs, the larynx, the skull, the brain, and the mentality, differing according to the age at which the operation is performed, and with the sex. After considering the effects of castration upon the various tissues and organs of the body he closes his article by calling attention to the serious constitutional effects which follow castration in the young; and as, according to the last United States census, one in every three hundred and twenty of the population is either insane, criminal, or a pauper, the impracticability of the scheme of compulsory emasculation of criminals, feeble minded, idiots, insane, epileptics, etc., is self-evident. In any case resecting the vasa, leaving the testicle intact, is the maximum operation which should be permitted.

Journal of the American Medical Association, August 18, 1906.

Tumor of the Carotid Gland.—W. W. Keen and J. Funke report a case of the rather rare tumor of the carotid gland, an inconstant organ located between the forks of the common carotid artery. Up to date twenty-seven such cases have been reported as operated on and two have been found at postmortems, making twenty-nine in all. The authors think from the increased number of cases observed of late years, however, that such growths are not quite so infrequent as has been supposed. It is the deformity it causes and the occasional rapid growth of the tumor in its later stages that call for surgery, but on account of the involvement of the vessels and of the vagus in the tumor, and the consequent dangers of the operation, Keen advises against meddling with it except in cases of very rapid growth and threatening malignancy. Abstracts of the cases reported in the literature are given, and the diagnosis, symptoms, embryology, histology, etc., are discussed at length. A better knowledge of the normal gland would facilitate the study of these growths, but the lack of this has led to considerable confusion in their classification. Funke suggests that in view of all the facts they may be called endotheliomata.

Infection in Acute Lymphatic Leukemia.—P. Marvel reports a case, calling attention particularly to the following features: 1. A pain in the leg of unknown cause, which was the first disturbance of the previously existing good health. 2. A slowly progressing anemia, coincident with menorrhagia. 3. An acute attack of tonsillitis followed by enlargement of the lymphatic glands of the face, neck, axilla, and groin with the thyroids, liver, and spleen. 4. The absence of pathogenic change in the blood cells at the beginning of the tonsillitis attack and its appearance some time within the following twelve days, as evidenced by the second examination that was permitted. The diagnosis was supported by the following clinical symptoms: Rapidly progressing anemia, conspicuous predominance of lymphocytes, general debility, pathogenic change in the lymphatic glands, enlargement of spleen, liver, and thyroids, early appearance of petechiæ, ecchymotic or purpuric areas, hemorrhagic dyscrasia, gastrointestinal irritation, and, associated with the latter part of the illness, profuse sweating. The clinical evidences pointing to infection in this case are, he says, strikingly similar to those recognized in scurvy, sepsis, and other accepted bacterial diseases. He thinks, therefore, that the streptococci or the streptococcic toxins of the tonsillitis had much to do with the pathogenic change of the lymphatics and blood tissues and incidentally with the serious metabolic disturbance, functional failure, and death which followed.

Gastric Hyperacidity and Gastric Symptoms.—J. D. Steele, with a view to confirming Stockton's theory that the symptoms credited to gastric hyperacidity are due mainly to a hyperesthesia of the gastric mucosa, and to ascertain what other factor might also be effective, has studied thirty cases under his observation. In about one-half of his cases the cause of the irritation and pain lay in the existence of decided gastric motor insufficiency or of hypersecretion. In fourteen, however, no cause could be demonstrated for the hyperesthesia, but in nearly all of these the gastric symptoms were directly connected with overfatigue or worry, or were a part of a general nervous irritability. All the patients were benefited and ultimately cured by treatment directed to the nervous condition. This, with the fact that the symptoms do not appear to depend necessarily on the amount of acidity and may be absent when it exists to a very high degree, seems to indicate that in these cases it was the local manifestation of a general state of nervous irritability. This was the view taken by Kaufmann, Stockton, and Musser, each of whom have reported similar cases. The practical bearings of this on the treatment are obvious, as that for the neurosis must differ from that of cases due to ulcer, retention, or hypersecretion. Steele finds a liberal mixed diet nonirritating to the sensitive mucosa, and the use of nerve sedatives, together with agents to relieve acidity, most useful. His experience also agrees with that of Musser as to the value of nux vomica, in doses slowly ascending to the physiologic limit, in the treatment of these cases.

Antitetanic Serum.—H. J. Scherck reports the results of the use of antitetanic serum for Fourth of July injuries in that city. A few days before the Fourth a large amount of the serum was obtained, put up in packages of 10 c.c. with everything complete and thoroughly sterilized, and kept in an icebox at a suitable temperature. Beginning about the 4th and extending to about the 7th of the month, 170 cases were treated in the city dispensaries. They included almost every possible Fourth of July injury, but not a single case of tetanus developed; repeating in this the experience of the previous two years in which the serum was employed. In 1903, before the use of the serum, 56 cases were treated, with 16 deaths from tetanus. In 1904-5 37 and 84 cases respectively, with no deaths, and in the present year 170 cases, as stated. To test the efficacy of the serum four guinea-pigs were inoculated with the minimum lethal dose of tetanus toxin. Two of these were treated with the minimum protective dose for their weight, and a third with four times this amount. The fourth pig received no protective injection, and showed tetanic symptoms in 16 hours after the inoculation, and died eight hours later. None of the others showed any symptoms whatever of tetanus. In the dispensary patients treated, in a few cases, there was a slight rise of temperature on the day following the injection, but no other symptoms were produced. In a few cases the injection was made in from two to four days after injury, and still proved prophylactic.

The Lancet, August 4, 1906.

Blood Pressure and Pigmentation in Addison's Disease.—A. Rendle Short records a case of Addison's disease, on which many observations were made on the blood pressure, and he summarizes as follows: (1) The symptoms of Addison's disease are due to vasomotor paralysis. This is due to absence of adrenalin, the normal excitant of the sympathetic nerve endings, from the blood. (2) The pigmentation is due to vascular relaxation of the skin, causing exaggerated functional activity of the pigment cells. (3) The most promising line of treatment, on theoretical grounds, is the administration of vasoconstrictors of prolonged action, and digitalin has given good results in one case.

Caterpillar Rash.—John C. Thresh says that every few years some entomologist suffers from an urticarial rash, due to handling caterpillars or their cocoons. Because children collect caterpillars in order to see the transformation into a butterfly, he claims that unless a note of warning is sounded cases of caterpillar rash will become more frequent.

On Some of the Pseudo-Parasites of Cancer.—Albert S. Grünbaum roughly classifies the pseudo-parasites as resulting from (1) cell degeneration; (2) cell inclusion or either leucocytes or other cells; (3) cell derivatives, *e. g.* the spermatid vesicle; and (4) non-specific organisms. He claims that a proper classification is often difficult, and may frequently afford ground for differences of opinion. Illustrations accompany the article.

A Case of Acute Rheumatism; Hyperpyrexia; Recovery.—E. Bertram Smith reports such a case occurring in a man, aged 54 years. On the eighth day his temperature by mouth was 107.2° and his pulse 128. An ice pack was used and just before applying it the temperature rose to 109.3° in the rectum. After three-quarters of an hour in the pack the temperature dropped to 107° and the ice was discontinued. Only two cases could he find recorded in the British literature of recovery after so high a temperature had been reached in rheumatic hyperpyrexia, and in both of these cold baths had been employed.

British Medical Journal, August 4, 1906.

Landry's Paralysis.—Eric Macnamara and Julius Bernstein give the full details of such a case which, from a clinical standpoint, is a typical one. The motor symptoms were those of a gradually ascending flaccid palsy, and these amounted to so high a level that on the eleventh day of the illness ocular movements were impaired. Thereafter the symptoms gradually retrograded. Throughout there were no sensory symptoms nor any incontinence of feces or urine, and eventually recovery was complete. Several microorganisms have been noted by various observers as occurring in the tissues of these patients, and they conclude that an organism resembling a tetracoccus isolated from a similar case post mortem was existing in an active condition in the blood and cerebrospinal fluid of a patient with Landry's paralysis, from which he recovered. And though the evidence is insufficient to definitely point to it as the causal agent, in the light of bacteriological findings in other acute infections the association is suggested. Further, it helps to confirm Buzzard's post-mortem findings in a similar case.

Notes on a Case of Fissura Abdominalis.—Howard Stevenson reports such a case occurring in a seven to eight months premature female child. Two hours after birth a large mass of bowel lay exposed outside the abdomen without peritoneal or other covering. This mass consisted of large and small intestines, with a patent Meckel's diverticulum. Operation was performed when the child was two and a half hours old. The fissure was between one and two inches long; this was enlarged and the intestines replaced. The abdominal wall was sutured, the umbilical cord being fixed in the upper angle of the wound. The child died on the eighth day.

Ascaris Lumbricoides as a Cause of Appendicitis.—Aldo Castellani reports the post-mortem findings in such a case, and shows a photograph of the appendix containing a worm. The worm was firmly inserted into the appendix, and could not be pulled out, although much force was applied. The post-mortem findings clearly prove that ascarides under certain circumstances may be the cause of appendicitis.

Gumma of the Brain.—F. H. Jacob reports the case of a man, aged 50, who was seen to be apparently unconscious. There was incontinence of feces and urine and the right arm was completely paralyzed. There was a marked drop of the right angle of the mouth, and paresis with rigidity of the right leg. Both knee jerks were active. On the penis was a large papilloma thought to be syphilitic. Under the use of the iodides and mercury he improved greatly, possessing perfect movements of the face, arm, and leg, but with some weakness of the right arm.

Münchener medizinische Wochenschrift, July 31, 1906.

Regarding Proteolytic Ferment Action of the Leucocytes.—Muller and Jochmann stated in a former communication on this subject that the blood from a case of myelogenous leukemia would promptly digest Loeffler's serum at 50° C., but not at the temperature of the body. They attributed this to the fact that the ferment action was only rendered possible by the rapid death of the myelocytes owing to the high temperature, and that it was inhibited at ordinary temperatures by certain elements in the blood. It was claimed by Stern that perhaps the plasma contained inhibitory elements which lost their activity at the temperature noted. The present paper by Muller and Jochmann deals with the answer to this claim of Stern's, and as the result of their present series of experiments they conclude that the leucocytes of the normal human blood as well as those from leukemia, fresh pus, and bone marrow, are deprived of their digestive powers by the addition of blood plasma or serum at a temperature of 50-55° C., although at this temperature they still develop a well-marked ferment action even when diluted with physiological salt solution. This shows, according to the writers, that Stern's contention is unfounded.

An Improved Method of Displaying the Spirocheta in Smears.—Hoffmann and Halle call attention to the fact that in making thin smears when looking for this organism, cells and nuclei are apt to be destroyed and the detritus thus obscures the field under observation. A method is desirable by which the search may be prosecuted even in thicker layers of the material to be examined. That proposed by the authors is as follows: Into a flat glass dish of about 5 cm. diameter there are placed 5 c.c. of a 1 per cent. osmic acid solution and 10 drops of acetic acid added. This is placed in a Petrie dish in order to avoid the irritating vapors from the osmic acid. Carefully cleaned cover glasses are then exposed to the acid for 2 minutes, and while they are still moist, the material for examination is passed over the surface with a single sweep. Then the cover glass is immediately returned to the dish for another minute or two. The fixed specimens are then dried if necessary, but preferably without heat, and placed in a dilute solution of potassium permanganate for a minute, after which they are washed in water and dried with filter paper. The staining with eosin is completed after the manner advocated by Giemsa. It is claimed that the spirochetes in these preparations may be readily distinguished and the cells and tissue bits in the field are intact and so do not obscure the picture.

A Case of Bacteriemia without Symptoms.—Künzel reports a case in which the symptoms during life afforded no clue whatever to the true condition present, which on autopsy was determined from the examination to have been sepsis. The organs were practically

negative and presented nothing which should have brought about a fatal issue, but a chance examination of the blood showed an abundance of streptococci. Microscopical preparations of the tissues confirmed these findings. Although these streptococci were universally distributed throughout the body, the patient had had no rise of temperature, nor were there any other symptoms present which would warrant the suspicion of such a severe septicemia. It would seem wise, therefore, to institute a bacteriological examination in every case where the pathological examination failed to disclose the cause of death.

Deutsche medizinische Wochenschrift, August 2, 1906.

Chorea Gravidarum.—Martin, from his many opportunities to observe this condition, is convinced that in the majority of mild as well as severe cases the pregnancy need not be interrupted, but that medical treatment is almost always successful. In only three cases has he found it necessary to produce abortion, but as soon as this was done recovery always resulted after a longer or shorter period. In two cases he also had an opportunity of treating chorea in the same patient in several successive pregnancies, a rather unusual occurrence. In one of these cases there was no history of any previous organic disturbance or infectious disease; in the other the chorea followed an attack of articular rheumatism. In a discussion of the treatment of these cases, Martin states that the induction of abortion should only be considered as a last resort, and then only in patients where there is present a severe endocarditis, meningitis, or similar complication. The result is often fatal, and this is not usually due to the chorea itself, but to apparent liability to puerperal infection which these patients present, although this has been lessened since the introduction of bougies or tents for the purpose has been abandoned and anterior colpohysterotomy substituted. As regards medicinal treatment, he has had good results following the administration of the bromides (bromide of soda and ammonium aa 2,0; bromide of magnesium, 4,0) together with careful attention to nursing and feeding.

Streptococcus Mucosus as a Cause of Otitis Media.—Wittmaack, in endeavoring to clear up certain points in the bacteriology of middle ear disease, made use of the procedure advocated by Schottmuller, by which it is possible to separate well-marked varieties of streptococci growing on agar and blood culture media. As the result of this method the following varieties may be distinguished: *Streptococcus erysipelatos, viridis* and *mucosus.* Careful studies made in 55 cases seem to show that in addition to the other varieties of streptococci, the *Streptococcus mucosus* apparently plays an important rôle in the production of an acute otitis media, and that this variety is, moreover, the most virulent when tested by injection into mice. If the disease was due to the mucosus, its course was usually protracted (four to five weeks), and if due to the diplococcus, it was much milder and apt to last only about two weeks. The former variety of infection seems also more apt to be complicated by mastoiditis.

Changes in Virulence in Pathogenic Organisms.—Loeffler discusses the liability of all organisms, whether plant or animal, to be influenced by external factors, among which food and temperature are the most important. This applies particularly to the lower orders of plants, including the bacteria, so that it becomes possible by artificial means to reduce or increase the virulence of these organisms to an extent without limitation. This acknowledged change in the pathogenic character of bacteria led Loeffler to experiment with the organism of foot-and-mouth disease, which is very virulent in cattle, but less so in sheep and swine. He endeavored to make this organism more virulent for the less susceptible animal and then to observe whether such cultures would lose in virulence by the process when injected into cattle. If this fact could be proved, then the modified organism might be used for prophylactic vaccination in cattle exposed to the disease. He was able by successive inoculations of the cattle lymph in young pigs to produce a lymph which, although very virulent for the latter, produced little reaction when injected into cattle and provided a degree of immunity against the disease which lasted several months. The method seems harmless and suitable for practical purposes. It will be further developed by the author.

French and Italian Journals.

Use of Hot Solution of Soda in the Disinfection of Floors.—Giuseppe Pecori calls our attention to the lack of efficiency of the solutions of corrosive sublimate in ordinary use for disinfection of walls and floors. He finds comparatively useless many disinfectants ordinarily used. In order to obtain a disinfectant that would be efficient for the disinfection of hospital floors, as well as the rooms used in infectious cases, the author has made experiments as to the value of solutions of soda used hot for the destruction of the tubercle bacillus and other common germs. He finds that solutions of soda of 2 per cent. used hot and kept in contact with the bacteria for from five to ten minutes are not to be relied upon to destroy the bacilli, but that if solutions of 5 and 10 per cent. be used hot and applied for five or ten minutes they are efficacious and destroy all the bacilli. He believes that such solutions have a very real value in the disinfection of walls and floors, and that at the same time they are not at all injurious even to cement floors. Another advantage is that the solutions are exceedingly cheap. The commercial soda that is an oxyhydrate and contains 70-72 per cent. of sodium hydrate is the one that should be used.—*Gazetta Medica di Roma,* May 15, 1906.

Contribution to the Surgery of the Gall Bladder and Cystic Duct.—Mario Segre has been impressed by the changes in the gall-bladder walls that are found in cases of malignant disease of the gall-bladder on the post-mortem table. He has made experiments on rabbits by producing complete or partial stenosis of the gall ducts to find out what changes were produced in the walls of the gall-bladder and cystic ducts. He finds that the epithelium of the gall-bladder is first affected; later the muscular fibers undergo degeneration; finally all layers are transformed into connective tissue. In cases of incomplete stenosis the muscle of the gall-bladder undergoes hypertrophy and there is an attempt to push the obstructing calculus away. When atresia is complete this process does not take place. In the incomplete cases there is danger of an ascending infection of the ducts, owing to the biliary stasis which exists. In incomplete atresia there is a favorable condition set up for the formation of calculi. In complete obstruction there seems to be no use in conservative treatment of the gall-bladder, since it soon becomes degenerated. The author advocates cholecystectomy, since the patient readily adapts himself to the absence of the organ.—*La Riforma Medica,* June 2, 1906.

Acute Poisoning with Quinine in Infants.—Osvalde Federici draws our attention to the comparative frequency with which acute poisoning by quinine takes place in infants. He had the care of a patient of sixteen months of age, who secured a bottle of quinine confections in his mother's absence, and swallowed between twenty and twenty-five of them, estimated at about 4.5 grains. Within two hours and a half the child had died of acute poisoning, with nervous symptoms predominating over the gastric ones. There was vomiting and congestion of the stomach and intestine, with post-mortem ulcerations found in the stomach, but the predominating symptoms were those of collapse and convulsions, followed by coma, in which the child died. At the autopsy no other changes were found in the internal organs than those already mentioned. The author concludes from his observations that acute quinine poisoning in infants and in animals produces no marked lesions of the digestive organs. The form in which the drug is administered makes a difference in the degree of poisoning, a soluble salt acting quicker and more powerfully. There is great difference of opinion as to the poisonous dose in infants, and there is need of further accurate study in this direction.—*Rivista di Clinica Pediatrica,* May, 1906.

Relations of the Menstrual Function and Mental Diseases.—Aleardo Salerni says that in normal women there are always nervous symptoms accompanying the coming of the menstrual period. In those affected with mental troubles there is almost always irregularity of menstruation, amenorrhea, or menorrhagia. In many mental states there is a distinct exacerbation of the disease at the time of menstruation, but there are no special typical symptoms at that time, simply an increase of the ordinary symptoms of the disease. The author believes that there is no causal relation between these menstrual irregularities and the mental diseases. There are always other etiological factors present. At the same time, the occurrence of menstruation has a marked effect on the course of the disease. In the periodic forms of mental disease this relation is marked, and such diseases often first appear at the menstrual period. The chronic mental diseases are rarely accompanied by menstrual irregularities. The toxoinfective forms are most affected by menstrual irregularities. In arrest of development regularity of menstruation is in direct relation with the physical development of the subject. Cases of periodic mental disease and arrest of development are always observed to undergo an attack of agitation at the arrival of the menstrual period, which continues as long as the flow lasts, and increases to a climax, to decrease toward the end of the flow.—*Il Policlinico,* May, 1906.

Book Reviews.

Consumption. Its Relation to Man and His Civilization. Its Prevention and Cure. By John Bessner Huber, A.M., M.D., Fellow of the New York Academy of Medicine; Member of the National Association for the Study and Prevention of Tuberculosis, etc. Philadelphia and London: J. B. Lippincott Company, 1906.

It is no easy task to write a book on a medical subject that, while fully within the grasp of lay comprehension, shall also be of value to the physician; yet Dr. Huber has attempted this, and has succeeded admirably. While there are already several excellent works on tuberculosis intended for the instruction of nonmedical readers, the present volume is probably the only book of this class likely to be directly useful to physicians also. The author has planned his work on the broad, generous lines of German scientific writing, but has, in addition to this thoroughness, managed to inject into it a more distinctly literary quality than is usually met with in the medical books of to-day. The text is divided into fifteen parts, devoted respectively to general considerations, the etiology of the disease, predispositions to tuberculosis, sociological factors, factors relating to the home, prevention, the cure, and the means to this end, American and European sanatoria, the sanatorium and its adjuncts, administrative measures, nongovernmental activities, and a scientific résumé. In a series of appendices, the matter of disinfection, plans for the erection of tents and shacks, data relative to the cost and construction of sanatoria, etc., are given, as well as very useful lists of American societies and committees for the prevention of tuberculosis, and of sanatoria. Much information in regard to the tuberculosis situation that is essential to the physician, but has not yet found its way into the ordinary text-books, is given, and the discussions of the climatic and fresh air treatment contain many hints likely to be of the greatest assistance in managing individual patients. The sociological aspects of tuberculosis also are treated most interestingly, and the reforming of the conditions under which the poor in great cities are compelled to live is given extensive consideration. Interesting illustrations are scattered through the volume, and we warmly commend it to the physician, both for his own perusal and for use among his patients.

Outlines of Applied Anatomy, with Special Reference to Surface Landmarks. By Richard J. A. Berry, M.D., F.R.C.S.E., F.R.S.E., Professor of Anatomy in the University of Melbourne, formerly Lecturer on Anatomy in the School of Medicine of the Royal Colleges, Edinburgh; and Examiner in Anatomy to the University of St. Andrews, to the University of Aberdeen, and to the Royal College of Surgeons, Edinburgh. With forty-six illustrations. Edinburgh: William Green & Sons; Philadelphia: J. B. Lippincott Company, 1906.

This work is a concise presentation of the subject of applied anatomy brought down almost to the form of a compendium. As stated in the preface, the author has endeavored to bridge over the gap between anatomy as studied in the dissecting room and its practical application in hospital wards. It consists in a systematized series of brief anatomical descriptions, with especial reference to surface landmarks clinically applicable. The diagrams and illustrations, while in many instances not original, are helpful. The book is well adapted for hasty reference, but is not exhaustive and is not pleasantly readable, as is the case with some other recent works on applied anatomy. Its chief recommendation lies in the conciseness of the author's treatment of the subject.

Reference Handbook of the Diseases of Children. For Students and Practitioners. By Prof. Ferdinand Fruhwald of Vienna. Edited, with additions, by Thompson S. Wescott, M.D., Associate Professor of Diseases of Children in the University of Pennsylvania. With 176 illustrations. Philadelphia and London: W. B. Saunders Company, 1906.

It is always a good plan to read the preface of a work; sometimes it conveys more information than the title page, and often it may be the means of preventing disappointment. In the present instance we learn from the preface that this compendium is not designed to take the place of a text-book, but that it is intended to prepare and stimulate the student for the study of text books and to serve as a convenient clinical guide. We further learn that, as far as treatment is concerned, this work is simply an epitome of the pediatric therapeutics at present in vogue in Vienna. If these two facts are remembered, the book will cause no disappointment. The subjects are arranged alphabetically, beginning with abscess and ending with zona. There are numerous cross references, some of which appear unnecessary; for example, the average medical student is hardly likely to look for agrypnia when he wants insomnia, or for arthrogryphosis in place of tetany. On the other hand, even a student might possibly be tempted to look for articles on empyema, or tonsillitis, or dysentery, or foreign bodies in the nose; if so, disappointment is in store for him. In the discussion of the various topics, symptoms and treatment receive ample attention, while pathology and diagnosis are practically ignored. The treatment is at times decidedly heroic, and has to be modified by the American editor; the editorial pen might well have been drawn through several preparations unknown in this country, as well as through the half-page of names of European baths, etc., suggested as being beneficial in scrofulosis. We do not think the present work is especially suitable for the American medical student; and whatever may be its reputation in Germany, it is not likely to attain a high rank here.

Materia Medica and Therapeutics. An Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, A.M., LL.D. (Hon.) Aber., M.D. (Lond.), Fellow of the Royal College of Physicians of London; Consulting Physician to Charing Cross Hospital and to the Hospital for Consumptives, Brompton; formerly Examiner in Medicine in the University of Cambridge and Examiner in Materia Medica in the University of London and in the Victoria University. New and Enlarged Edition, Revised Throughout, and containing the Indian and Colonial Addendum to the British Pharmacopœia. Forty-ninth thousand. First American Edition, with the Formulæ Adapted to the United States Pharmacopœia, by Oscar Oldberg, Ph.D., Dean and Professor of Pharmacy in North Western School of Pharmacy. Chicago: W. T. Keener & Co., 1906.

As we have so recently reviewed Bruce's Materia Medica and Therapeutics (see Medical Record, February 10, 1906), there is no need of a lengthy notice on the present occasion. For a long time this book has been most favorably known in England and Canada as one of the very best text-books on the subject; and it has been a matter of surprise to us that there has been no revision of it to conform to the requirements of practitioners using the United States Pharmacopœia. And now, in this first American edition, it is to be regretted that the editor did not thoroughly adapt it to the U. S. P. by introducing the numerous preparations of our Pharmacopœia which are not found in the B. P. Possibly, when another edition is called for, we may have this masterly and popular work made suitable to our needs and requirements.

Neurotic Disorders of Childhood. Including a Study of Auto- and Intestinal Intoxications, Chronic Anemia, Fever, Eclampsia, Epilepsy, Migraine, Chorea, Hysteria, Asthma, etc. By B. K. Rachford, M.D., Professor of Diseases of Children, Medical College of Ohio, University of Cincinnati; Pediatrist to the Cincinnati Good Samaritan and Jewish Hospitals; Member of the American Pediatric Society, of the Association of American Physicians, etc. New York: E. B. Treat & Co., 1905.

This excellent and most readable book is a development of a series of articles published originally in the *Archives of Pediatrics* some ten or twelve years ago. These articles were entitled "Some Physiological Factors of the Neuroses of Childhood," and as revised they constitute the main portion of Part I in this book. Three other chapters have been added on Gastrointestinal Toxemia, Autointoxication, and Chronic Systemic Bacterial Toxemias. This part is in the nature of an introduction dealing in general terms with the undeveloped and irritable nervous system of the child, and its reaction in the different pathological conditions of anemia, toxemia, autointoxication, etc., in response to reflex initiations, and in states of excessive nerve activity. The second part deals practically with the various neuroses, their causation, symptoms, and treatment. The book will be of service to the pediatrist as well as to the neurologist; indeed, it is written rather from the viewpoint of the former. It treats chiefly of the homely but practical questions of the cure of the neuroses of childhood, and concerns itself less with speculations regarding the pathology and morbid anatomy of these diseases. It is an eminently practical book and one that will often be of great assistance to the general family practitioner.

Das Wesen der Psychose auf Grundlage Moderner Naturwissenschaftlicher Anschauung. Von Dr. Heinrich Stadelmann. Heft V: Die Paranoia; Heft VI: Die Epilepsie. Munich: Otto Gmelin, 1905.

This is an analytical study of the Psychoses or as the author has it "The Psychosis," implying a common substratum for Hysteria, Epilepsy, Paranoia, etc. Stadelmann dissects the psychological, physiological, chemical and physical phases of the psychoses and reviews critically the various opinions held as to these factors. To him psychological dissociation in a chemicophysical phenomenon of polarity. In the present section he deals with epilepsy and with paranoia.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, Held at Toronto, August 21, 22, 23, 24, and 25, 1906.

GENERAL SESSION.

(Special Report to the MEDICAL RECORD.)

First Day—Tuesday, August 21, 1906.

THE meeting was called to order at 2 P. M. in the Convocation Hall and prayer was offered by the Rev. Dr. McLaren.

Valedictory Address from the Retiring President.—Mr. GEORGE COOPER FRANKLIN, F.R.C.S., of Leicester, said it was his privilege as *laudator temporis acti* to refer to the past year's work, and he spoke of the admirable and most excellent work of the British Medical Association, the time and devotion given by the gentlemen who managed to be members of the Council, of the Committees, of the Representatives, etc.

Induction of the New President, Richard Andrews Reeve, B.A., M.D., LL.D., Dean of the Faculty of Medicine, University of Toronto. In his induction a badge was given him, a locket inside of which was a protograph of his own child, the Convocation Hall. The badge of office was presented by Dr. F. N. G. Starr.

Reception of Delegates from Colonial Branches and Distinguished Visitors.—This reception of delegates, distinguished visitors, members of various American medical societies, was marked by much applause.

Recommendations of Council.—It was moved, seconded and carried most enthusiastically that Mr. George Cooper Franklin, F. R. C. S., and Sir Victor Horseley, F. R. C. S., F. R. S., be and are hereby elected Vice-Presidents of the British Medical Association for life, in accordance with By-Law 38, for their distinguished services to the Association.

Addresses of Welcome.—Address of welcome to Toronto was made by His Worship the Mayor; in behalf of the local reception committee by Mr. Irving H. Cameron, M. B., F. R. C. S., LL. D.; of the Canadian Medical Association by the President, Dr. Alexander McPhedran; and of the Ontario Medical Association, by the President, Dr. George A. Bingham.

Presidential Address.—RICHARD ANDREWS REEVE, B. A., M. D., LL. D., reviewed in lengthy detail the advances made in medicine and surgery, especially during the past decade, and ended his address by stating that the members of the British Medical Association had come to this country at a critical period in their history, at a time in the making of a nation; that the profession in Canada had not exceeded in loyalty the standards based on the traditions of the profession. He referred to the bill in the House of Commons, introduced by Dr. Roddicks, a bill standing for an idea and an ideal, "Dominion registration and reciprocal action on the part of Great Britain and the daughter, Canada."

Dr. HENRY BARNES, LL. D., of Carlisle, offered a resolution, which was seconded by Dr. T. G. Roddick, LL. D., F.R.C.S., of Montreal, that the best thanks of the Association be given to Dr. Richard Andrew Reeve for the scholarly and interesting Presidential address on the occasion of the seventy-fourth annual meeting.

Address on Obstetrics.—Dr. W. S. A. GRIFFITH of London delivered this address at the evening session. He referred in the introduction to former orations on obstetrics delivered at meetings of the British Medical Association, of which there had been only a few. The first, in 1863, was by Dr. J. G. Swayne of the British Medical School, and it was interesting to note that of the many subjects discussed in this address, the obstetric use of chloroform, version in cases of obstructed labor, the treatment of placenta prævia, cesarean section, blood-letting and chloroform in puerperal convulsions, the nature of thrombosis and of phlegmasia dolens, and the operation of ovariotomy, almost all were still matters under discussion. The second address, in 1884, was given by Dr. G. H. Kidd of Dublin, who took as his subject Puerperal Fever, which he handled chiefly from the clinical point of view. The next address was delivered by Dr. Cullingworth at Newcastle, in 1893. The subject was Pelvic Peritonitis in the Female, and the Pathological Importance of the Fallopian Tubes in Connection Therewith. The address remained as a landmark in our knowledge of the pathology of salpingitis; it led to the general appreciation by British gynecologists of the true pathology of perimetritis, as well as to advances in abdominal surgery in the treatment of these cases. In 1900 an address was delivered at the meeting of the Association at Ipswich by Dr. W. J. Smyly of Dublin, the subject being Maternal Mortality in Childbed. Its chief importance as a landmark was in its indication of the simplification of antiseptic measures for the protection of parturient women, as, for instance, the abolition of the douche as a routine practice, and in its insistence on the substitution as far as possible of external or abdominal for internal or vaginal examinations during labor. Finally, at the meeting at Manchester in 1902, Sir William Japp Sinclair discussed Carcinoma in Women, chiefly in its clinical aspects. In this address he expressed his firm conviction that the secret of cancer would be discovered (if ever) by the study of cancer of the uterus. Dr. Griffith then entered upon a discussion of the subject of his address, which was "The Teaching of Obstetrics." He reviewed the practice which obtained in this respect in London, and offered suggestions for the improvement of the methods now in vogue. The author closed with a eulogy of the late Dr. Matthews Duncan, who went to London to fill the vacant post of obstetric physician at St. Bartholomew's Hospital in 1877.

SECTION ON SURGERY.

First Day—Tuesday, August 21.

THE PRESIDENT, SIR HECTOR CLARE CAMERON, M.D., OF GLASGOW, IN THE CHAIR.

Posture as an Aid in Surgery.—Dr. MURRAY MCLAREN of St. John, N. B., read this paper. He said the objects of posture were variable, and the desired results were obtained in many ways and through different channels, mechanical, anatomical and physiological factors to be considered. A natural and restful position of the patient was to be desired, with an avoidance of pressure upon certain areas of the body. Posture was of importance in the relief of pain, vomiting, dyspnea, in drainage, hemorrhage, in the prevention of the entrance of fluids into the air passages, and also in the avoidance of pulmonary complications. He considered the Simm's, the geniopectoral, Pryor's, Trendelenburg's, Rose's, Fowler's and other positions. Posture should be particularly considered in the administration of anesthetics, in the prevention of syncope, in the prevention of the inhalation of saliva, and the prevention of aspiration pneumonia. Posture was considered also in the post-operative treatment and in the relaxation of muscles following fractures.

Dr. IRVING H. CAMERON of Toronto believed that the dorsal decubitus was man's prerogative of rest, and should not be slighted. The only other animal that ever rested on its back was the dog, and this position of rest was given us for a purpose that should not be ignored.

Dr. CARMALT of New Haven, Conn., spoke of the reversed Trendelenburg position in the treatment of septic peritonitis with free pus in the abdominal cavity, and called attention to the report of Fowler's thirteen cases, in which the head

of the bed was raised fourteen inches. The upper part of the abdominal cavity was where pus was the more easily absorbed, and, by raising the head of the bed, quicker and more perfect absorption was favored.

Dr. Liston H. Montgomery of Chicago discussed the paper.

Fracture-Dislocation of the Spine.—Dr. A. Beverley Welford of Woodstock read this paper, and considered as involved only that part of the spine extending from the base of the skull to the lower border of the first lumbar vertebra, with its accompanying complete motor and sensory paralysis and absence of important reflexes from compression or laceration, or both, of the cord substance. After such an injury the question arose, what should be the proper course to pursue? An attempt should be made at reduction by extension and counter-extension, and evidence of its successful performance might be given by hearing the peculiar click, and by noting that the spinous processes were in normal line. One might be successful in replacing the dislocated parts, but there still might not be relief of the compression upon the cord; in fact more injury might be done than good by lacerating or compressing the cord. The question again arose, how long to wait for symptoms to show that improvement had taken place ? If symptoms showed no relief in from two to eight weeks, he said they had a right to assume that, although pressure had been relieved, the cord had been so much damaged as to be incapable of functionating. In case of uncertainty, he asked, why not do a laminectomy at once? He advocated earlier operation, and related two interesting cases that he had operated upon.

Enlargement of the Prostate and Its Treatment.—Mr. Lynn Thomas, C. B., of Cardiff opened the discussion of this subject, and said that during the past five or six years there had been quite a revival of interest in this subject, and some of the most remarkable successes had attended work on the enlarged prostate, especially in the aged. He had tried to formulate certain rules for his guidance in attacking the variable pathological conditions of enlarged prostate. Persons the victims of prostatism should not be submitted to enucleation if there was contraction of the orifice of the urethra, or if there was a fibrous prostate. He believed the middle lobe was more commonly the seat of pathological changes than any other. He also quoted from authorities to show that the capsule was intimately connected with the stroma and also the outer surface of the fascial sheath of the prostate. He asked, under what circumstances should the prostate be enucleated? When the catheter life became established patients preferred operation. He considered the operation to be safer than the continued use of the catheter. The vast majority of patients who use catheters two or three times a day sooner or later become septically infected. He had done 29 suprapubic and 2 perineal operations. He had looked up the statistics, only those in which ultimate results were given, in Europe and in America, and he found as follows: The total number of perineal prostatectomies was 677; of suprapubic prostatectomies, 583. The total recoveries from the perineal operation showed 89.58 per cent.; in the suprapubic, 88.9 per cent. The deaths directly due to the operation by the perineal route amounted to 6.8 per cent.; the suprapubic route, 7.7 per cent. The remote causes of death in both operations was exactly the same, 3.54 per cent. The recoveries from the operation, showing complete cures was 81.4 per cent. for the perineal, and 95.6 per cent. for the suprapubic operation. So far as the death rate was concerned, the statistics showed an advantage of 1 per cent. in favor of the perineal route. So far as complete cures were concerned, 14 per cent. was in favor of the suprapubic route. The perineal route was the more favorable for drainage from the bed of the cavity left after prostatectomy; if the suprapubic route was chosen it might be well to institute additional drainage by a perineal incision. In septic cases the operation had better be done in two stages. Here followed a description of his technique. In his conclusions he stated that there was no choice between the suprapubic and perineal operations so far as accidents or mortality were concerned. In both operations, there sometimes followed strictures of the urethra, fistulæ, etc. The suprapubic route should not be undertaken by surgeons with short fingers. It was not possible to remove the prostate in one mass without removing the whole of the prostatic urethra.

Dr. Robert F. Weir of New York said the two important points to be decided upon at the present time were first, in prostatic difficulties when was the best time to attack that organ; secondly, what was the better route for attack? The earlier attempts were made on those patients when there was nothing else to be done and when this was the only operation to perform; and then the kidneys and bladder were involved and the mortality was made high. Even to-day the statistics show that the mortality was heavy, ranging between 9, 12 and even 14 per cent.

Dr. G. A. Bingham of Toronto gave a description of the microscopical structure of the prostate, which showed a lack of true capsule, the definite lobes being absent. Embryologically, the prostate was shown to be purely sexual in origin. The pathological changes in hypertrophy were taken up to show the relationship of the newly formed tissue to the remainder of the gland. It was contended that in the modern operation of prostatectomy enucleation was performed through the outer part of the gland, and that a portion of the prostate was always left behind. He then considered the question of a "middle lobe." Three classes of cases were discussed under treatment: (1) The early cases, where the only symptom was obstruction; here enucleation was advised, with catheter life as the alternative. (2) The very late cases, in which was advised permanent drainage of Bottini's operation. (3) The intermediate cases when enucleation was the best treatment. He held that neither perineal nor suprapublic prostatectomy met all indications. He closed his remarks with statistics, which favored the perineal route of approach.

Dr. Arthur T. Cabot of Boston said he only did the suprapubic operation in those few cases of old men with feeble organs, where it was necessary to make a short operation, or where the patient had a third lobe which had to be removed by short anesthesia. He believed the perineal operation to be the one of choice. The functional results following the perineal operation were so much better than those following the suprapubic, or the partial, or the Bottini operation that he now adopted it as the method of choice. The preparation of patients for operation was an important thing. For instance, cases that were profoundly uremic when first seen were those that gave high mortalities if operated upon at once. Most of them could be placed in good shape for operation by adopting catheter drainage through the urethra until the tongue cleared up, the appetite returned, and the patient recovered his strength; operation then could be done with safety. Such drainage had an extraordinary effect upon the kidneys; the urine became remarkably increased and there was an improved elimination in the amount of urea. After operation good results followed from simply good drainage and an occasional irrigation, keeping the bladder clear of clots. He now removed the perineal drainage earlier than formerly.

Dr. Teskey of Toronto favored the perineal approach, believing the operation to be the more easily performed and the drainage more effectual and less time taken in its performance. He could find no argument favoring the suprapubic operation. Statistics were wanting regarding the sexual function after operation.

Sir Hector Clare Cameron of Glasgow reported an interesting case upon whom he operated sixteen years ago. At that time there were no surgical writings on this subject. When he saw the patient, a man 46 years of age, he had been using the catheter for years and he suffered

much pain. He had absolute retention and the only urine passed was by catheter. It was an extraordinary fact that he had been sounded for stones, but none found. He had been suffering from severe attacks of hemorrhage and the bladder had become much distended with blood which had putrefied; this was accompanied by an enormous distension of the bladder, due not to blood and urine alone, but from gaseous putrefaction. He believed that few realized the enormous distension of the bladder which often took place. When the knife was used stinking gas came from the bladder and thirteen stones (five of large size) were removed. Having removed these stones and putrid clots a large drain was introduced, the wound stitched and a wait of six weeks was made, when a second operation was performed. Then the pathologist reported an adenomyomata of the prostate. Sixteen years after the operation the patient remained in perfect health, except, following such enormous distension of the bladder, there was still no power left to empty it completely.

Dr. E. E. King of Toronto believed the suprapubic route the better, as the operation could be carried out in his experience more quickly and more thoroughly. He used two large drainage tubes; one he removed at the end of thirty-six hours, the other at the end of seventy-two. The irrigation was continued every eight hours, but not with a pressure over eighteen inches in height. As a rule too much pressure was used. He was particularly interested in Sir Cameron's case, in which the patient was almost moribund. He firmly believed that in years to come the suprapubic operation will be the one of choice.

Sir William Hingston of Montreal believed that, all things considered, the suprapubic operation was the better one, but that both operations were followed too frequently. The operator himself should decide what operation to do.

Dr. Francis J. Shepherd of Montreal related the history of a case operated on by him in 1892, the patient being 50 years old. To-day he was perfectly well. He preferred the suprapubic operation.

Dr. W. Alexander of Liverpool had had over 200 old men under his care for years, and yet he scarcely ever found occasion to operate for prostatic enlargement. The operation was performed too often. He preferred the suprapubic route.

Dr. D. J. Williams of Llanelly, Wales, preferred the suprapubic approach.

Dr. H. A. Bruce of Toronto believed the more rational method of approach was the suprapubic. Many cases of prostatic enlargement should not be operated upon at all; cases should, in his opinion, be more carefully selected.

Dr. William J. Mayo of Rochester, Minn., President of the American Medical Association, said that in the work done at Rochester the perineal operation was more often performed, they doing three or four perineal operations to one suprapubic. The perineal operation, when gotten at from the urethral side, gave a shorter convalescence. There was no particular difference in the mortality rate. But, when the perineal operation was done, the patients were in bed one week or less, and left the hospital within three weeks; whereas, in the suprapubic operation, there was a tendency to develop fistula, and they remained in the hospital one month or more. There was about ten days saving of time, but there was the same mortality. In some cases the suprapubic operation was to be preferred; for instance, when there was a tendency for the tumor to rise in the bladder. Most of the cases had to be cystoscoped and the tumor examined to see which method was the one of choice. But whichever way the tumor presented was the easiest way to remove it. He called attention to the high percentage of malignancies, not less than 15 per cent. of enlarged prostates showing malignancy at some point and in the tumor itself. This he believed to be an important fact, and well worth remembering. This was particularly important, as it might enable them to eliminate a certain percentage of the cases of malignancy previous to operation. Again, this fact called for a comparatively earlier operation.

Dr. Ochsner of Chicago chose more often the perineal route. He believed in first thoroughly exposing the prostate by a horseshoe incision. He called attention to the similarity in removing a prostate and the vaginal removal of the uterus. The operation was much facilitated by placing in sharp retractors and drawing the gland downward, so that the field of operation was entirely under control. One should keep in mind the venous plexus about the prostatic urethra. In those cases where enucleation was very difficult Ferguson's forceps were of great aid.

SECTION ON MEDICINE.

First Day—Tuesday, August 21.

Sir Thomas Barlow, M.D., President of the Section, in the Chair.

President's Address.—Sir Thomas Barlow said that with a program so full as that of this section and with so much interesting material, it seemed idle to take up time with an address on the "Aims and Scope of Medicine" or some like conventional topic, as was so often done. After a single word of cordial appreciation for the honor of being selected to preside over the section he preferred simply to announce the excellent papers that were to be read and allow the section to proceed with its work. He could not refrain, however, from complimenting his Canadian brethren on the modesty with which they had kept themselves in the background and placed the names of visiting members and guests of the Association prominently on the program. The papers for this first morning on "Blood Pressure in Its Relation to Medicine" were an excellent example of the thoroughgoing work of the committee and doubtless would be epochal in their statement of the most recent advance in diagnosis.

Physiology of Blood Pressure.—Dr. Percy M. Dawson of Baltimore, Md., opened the symposium on Blood Pressure on Relation to Disease with a paper on the physiological aspect of the question. He said that much confusion had arisen from the fact that the word blood pressure had been used without specifying just what form of blood pressure was intended by the term. Personally, he had never used the term without putting an adjective before it. Systolic blood pressure was that which depends upon the force of the heart. Diastolic blood pressure was that which resulted from the various tendencies to bring blood back into the heart. The pulse blood pressure is really the systolic blood pressure minus the diastolic blood pressure. Whenever the term is to be used, then, Dr. Dawson preferred to use the plural—blood pressures. Dr. Dawson said that the problem of blood pressure might very well be illustrated by means of a curve or figure in which the various forms of blood pressure were represented by abscissas and ordinates. For each case these had to be calculated if the exact idea of what was intended by the real blood pressure was to be worked out. In all cases the question of the resistance offered to the initial energy of the heart must also be considered, and this added to the complexity of the problem. In a word, the study of blood pressures was by no means simple, and would require careful investigation before physiological knowledge could be applied for therapeutic purposes.

Clinical Investigation of Blood Pressure.—Dr. G. A. Gibson of Edinburgh discussed the various modes of investigating blood pressure for clinical purposes. The work of the heart, he said by way of introduction, was modified by many extrinsic factors. Blood pressure owed not a little to the peripheral resistance. This was very changeable. The abdominal vessels ruled by the splanchnic nerves also modified general

blood pressure. The elasticity of the arteries transformed potential into kinetic energy, and this must be taken into account. Viscosity was also a factor, though its importance was not well understood. There was a layer of blood constantly in contact with the vessel walls, and as this was quite immobile friction was generated and resistance to flow occurred. Dr. Gibson did not agree with those who consider that the educated touch, *tactus eruditus,* was quite sufficient to enable the physician to recognize the quality of blood pressure. To insist on this was to put oneself in the position of those who would say that temperature might be judged by means of the finger also. The position was antedeluvian, or at least antiquated. Much help could be derived from the use of blood-pressure instruments in pneumonia; the change of blood pressure represented the point of danger. A drop below the ratio that went with the pulse rate was the herald of death. In typhoid fever, the increase of blood pressure indicated by the instrument was the signal often of an outbreak of nervous symptoms. It was easy to realize even from these examples how important the use of instruments for the estimation of blood pressure might be. The speaker said that the best principle of measuring blood pressure was that employed originally by Riva-Rocci. This consisted of a band around a member. It was important, of course, that this band should be broad enough, otherwise the result obtained was too high. The sphygmomanometer invented by Erlanger gave both the diastolic and systolic blood pressure in graphic tracings, and was undoubtedly the best instrument. Other instruments were useful, but contained dubious elements and liability of error. Another method employed was that of noting the tint of the skin for blood-pressure purposes. While this had certain elements of truth, it was not as useful, in Dr. Gibson's opinion, as the method of direct measurement of pressure. He considered that it was extremely important to take certain precautions with regard to the measurement of blood pressure. The posture of the patient was extremely significant. The patient must be in a horizontal position. Excitement made a very great difference in the matter of blood pressure. This might occur even in the doing of things with which the patient was very familiar. Dr. Gibson found that his own blood pressure, which was normally about 150 during the course of a lecture, rose to 190, or even higher. It was easy to understand, therefore, that patients who came for the first time to a strange physician might very well suffer from so much excitement that the blood-pressure tracings obtained from them would have very little real significance. A number of observations ought to be made, and blood pressure should be kept on charts just as the temperature is. In a word, the instrumental methods of measuring blood pressure promised to give a new and very helpful set of facts for diagnostic purposes.

Pathology of Blood Pressure.—Sir William Broadbent, M.D., of London said that the question of the *tactus eruditus,* the trained finger, appealed to him very much, and though he might seem antediluvian, he still had to express the opinion that with the finger one could recognize very well all the variations of blood pressure for which special indications could be found in therapeutics. It would be amusing to consider blood pressure instruments in country practice. Exact instruments were only of use to educate the touch. Blood pressure depended to a great extent on the resistance in the capillaries. The viscosity of the blood depended not entirely on the stickiness of the blood particles by which they cohered to one another, but also on the tendency of the blood to stick to the walls of the blood-vessel. This adhesion, indeed, was the main cause of the delay of the blood in the capillaries. Many unexpected factors influenced blood pressure. Cold and heat, for instance, and excitement, were extremely important. The persistent small pulse of hysteria every physician knew. The vascular atony of neurasthenia was also well recognized. In the speaker's opinion the best criterion of normal blood pressure was the radial artery. If this could be emptied readily by the pressure of the finger, then there was no serious change in blood pressure. It was with regard to this that the education of the touch was most important. In fat people there was often a small pulse and artery. In thin people the artery was often large and round, yet the question of emptying by pressure could be used on both classes of patients and some definite ideas as to the comparative blood pressures could be obtained. He said that the heart might readily be interfered with by pressure upon it from the diaphragm. The right ventricle was especially likely to be affected. It rested upon the slope of the diaphragm. When this muscle was stretched, as because of the presence of gas in the abdomen, or because of a distended stomach, then there was a reduction in the general blood pressure because there was not blood enough passed on by the right ventricle to the lungs, and thus to the left ventricle, to keep up the blood pressure. When the pulse is too rapid, enough blood did not get in and out of the heart to keep up the general circulation, and the conesquence was a drop in blood pressure. This factor was sometimes neglected. When the heart was weak, then stimulants must be used. If there was resistance in the capillaries, then this must be reduced. For the purpose nitroglycerin, tetranitrin, and the nitrites were the most important drugs. Sir William Broadbent considered that to decrease the action of the heart was nearly always a mistake. Increase of heart action was always compensatory. This might become dangerous, but only too often a willing heart was disturbed by depressant drugs in its faithful overwork. The conditions of the blood must be modified so as to decrease viscosity. This could be done by withdrawing the calcium salts, as well as the ordinary salts, from the body. Alkaline waters acted not so much directly as by eliminating poisons that were in the system. Mercury was, however, the most important drug for this purpose in his experience. Mercurial aperients accomplished more than any other single set of drugs.

Blood Pressure and Arterial Sclerosis.—Dr. T. Clifford Allbutt of Cambridge, England, discussed the relationship of blood pressure to degeneration of the arteries. Increase of blood pressure, he considered, was due to something inside the circulation or something outside the circulation, or to the normal decay of the arteries. The factors within the circulation were toxins. These were usually due to infections, though they might be the results of the introduction of such substances as lead or alcohol into the system. Outside the circulation were certain organic changes, as for instance granular kidney, which made the work of the heart harder and somehow led to degeneration of arteries. With regard to overeating as a cause of increase of blood pressure, it was to be borne in mind that this was very individual. Some persons could eat large quantities and suffered not at all. Others ate relatively small quantities, yet showed distinct signs of disturbance. Usually it was considered that increase of blood pressure led to arterial sclerosis. Dr. Allbutt had seen blood pressure rise without producing arterial sclerosis. He had seen arterial sclerosis without rise of blood pressure. At times arterial sclerosis advanced so far as to defeat the heart without material rise of blood pressure. He had seen a preliminary thickening of the arteries in the early stage of arterial sclerosis apparently which had been due to rise of blood pressure, but which disappeared, showing that the thickening was only a compensatory action on the part of

the muscular coat. Dr. Allbutt considered that arterial tension was a bad term for pressure in a living tube. The term arterial sclerosis itself was not a clinical, nor even a single pathological entity, but rather represented a series of changes due to a number of different causes and conditions.

Forms of Arrhythmia.—Dr. J. MacKenzie of London, England, discussed the elements that went to make up the heart's contribution to blood pressure. They have been catalogued as Gaskill's functions under these names: tonicity, excitability, rhythmicity, contractility, and conductivity. Keeping these in mind, Dr. MacKenzie said that every form of arrhythmia could be traced to a definite cause. He said that the sphygmograph had been derided by many, but that was because they expected to obtain results from it for which it was never intended. A man might complain that a hand saw did not shave well, but that did not condemn the saw as useless. The sphygmograph was not meant to study blood pressure, but the character of the pulse. Dr. MacKenzie had often seen exhaustion of the heart occur without dilatation, and even rupture of the heart might occur as the result of overwork in these conditions. The therapeutic lesson was not to stimulate the heart, but to lessen resistance.

The Trained Finger.—Dr. Lindsay Stevens of Glasgow said that the trained finger was better in estimating blood pressure than any instrument. Many factors militated against the accuracy of instruments. Dr. Stevens had never seen high tension cause arterial sclerosis. He considered that high tension might be an effect but not a cause of arterial sclerosis. Both were due to poisons in the blood. Syphilis and lead had been mentioned, but every infectious disease produced a poison that increased blood pressure and also caused some degeneration of arteries.

Instruments Absolutely Necessary.—Dr. Alexander McPhedran of Toronto said that all forms of instruments for measuring blood pressure were on exhibition in the exposition. Any one who had used an instrument for measuring blood pressure realized how impossible was any proper judgment of difficult cases by means of the finger. If any one still believed in the *tactus eruditus*, disillusion came at once after even a little experience with an instrument. Dr. McPhedran cited many cases and showed that the instrument also helped in the decision as to whether a particular line of treatment should be followed. When the nitrites produced no fall in blood pressure, then this could be determined by the instrument and the uselessness of further nitrite giving realized.

Spasm in Blood Pressure.—Dr. McCaskey of Fort Wayne, Ind., said that the most important feature of blood pressure was the peripheral resistance, and this was often due to spasm of the arterioles. This could be overcome by drugs, showing that there had been no arterial change. The prognosis of such cases was better than had been anticipated. Organic degeneration of arteries was not preceded by high arterial tension, but this was an effect of the arterial sclerosis.

Arterial Sclerosis and Pain Symptoms.—Dr. Alfred Stengel of Philadelphia said that in certain cases arterial sclerosis was accompanied by fever and chills without any other cause, and abdominal pains also occurred as a consequence of arterial degeneration. Where fever and chills had been observed, careful search had been made for gall stones, pus in the kidney, inflammation of the gall bladder, cystitis, and for any lesion of the prostate. Even autopsies had been made without finding anything. The abdominal pains were quite marked and had been observed by many excellent physicians. Ortner in Vienna had described a case with cramplike pain. Osler had seen a similar case. In Dr. Stengel's experience a patient had repeated attacks, and it was seriously considered that an exploratory incision should be made in order to determine whether the appendix was affected or not. Finally, a very severe attack occurred and suppression of urine and uremia followed, with fatal termination. At the autopsy no appendicitis was found and no other inflammatory condition to account for the pain. There was a high-grade arterial sclerosis of the abdominal vessels. Altogether, twenty-five cases of abdominal pains associated with arteriosclerosis have been analyzed. Some of them were found to be angina pectoris, giving its symptoms in the abdominal region. Most of them, however, showed a high-grade arterial sclerosis of the intraabdominal vessels, but no other lesion to account for the pains. Thrombosis was not necessarily present, though this frequently terminated the scene. There was a suggestion in these cases of the intermittent claudication which occurred in the legs occasionally in association with arterial sclerosis. When there is an aneurysm of the abdominal aorta, then there was always sure to be pain and tenderness. The tenderness is more marked than the pain, however, and the characteristic attacks such as were described in ordinary arterial sclerosis did not occur.

Muscular Hypertrophy.—Dr. Ewart of London said that all persons engaged in active occupations had a certain development of the muscular coat of their arteries that made their arteries palpable. He had noticed this in examining cases in his wards when he found that seamstresses and others who did no manual labor did not have palpable arteries even at an advanced age very often, though the young women who did hard manual labor had quite palpable arteries even at twenty or under. Hence the importance of recognizing the influence of the occupation. Rest was the most important thing to keep off the change which led to the aging of the arteries. Sleep with its definite tendency to lessen blood pressure was the best possible preventive of precocious senility. Next to this rest in a horizontal position was the most important. All the factors had to be taken into account, or the relation of cause and effect in blood pressure and arterial sclerosis could not be properly understood.

(*To be Continued.*)

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

Second Annual Meeting, Held at Washington, May 17 and 18, 1906.

(*Continued from page* 196.)

(Special Report to the Medical Record.)

SURGICAL SECTION.

Thursday, May 17.

Dr. W. W. Keen of Philadelphia in the Chair.

Tuberculous Peritonitis.—Dr. Richard Douglas of Nashville read this paper. He said that 16 per cent. probably represented the frequency with which tuberculous peritonitis occurred in tuberculous subjects. In the 5,687 intraperitoneal operations in St. Mary's Hospital, Rochester, Minn., 3 per cent. were for some variety of tuberculosis, and out of 883 collected autopsies upon tuberculous children Biedert had found peritoneal involvement in 18.3 per cent. Tuberculous peritonitis was but one of the local manifestations due to the action of the tubercle bacillus. The statement that it was always secondary was practically unchallenged, yet in view of the conclusive proof furnished by Walsham, he felt that evidence would soon be forthcoming that the peritoneum, like many other structures in the body, might be the primary site of the lodgment of the bacillus. He classified the channels of infection as (1) hereditary transmission; (2) lymphatic vessels; (3) blood-vessels; (4) epithelial channels; (5) inoculation into the skin and other tissues. In speaking of prognosis Dr. Douglas said the effects of operative treatment had been to teach us that tuberculosis was often present without producing special symptoms and with a natural tendency to recover. Peritoneal tuberculosis appearing as a part of general miliary tuberculosis offered little hope of even temporary arrest. The subacute and

chronic ascitic forms were most amenable to operative treatment. In only exceptional instances should operation be undertaken in the fibrous form. All forms except the peracute were at least temporarily benefited. He considered that in general miliary tuberculosis medicinal and hygienic measures only should be employed; in dry fibrous peritonitis surgical measures should not be resorted to except to meet complications, as intestinal obstruction; in peracute cases, those of violent onset resembling appendicitis, the expectant treatment should be preferred. In the ascitic form he thought the simple incision not sufficient; the exudate should be completely removed, but efforts should not be made to detach adherent viscera further than to free encapsulated fluid. He thought the general conclusion justified that tuberculous peritonitis can be cured by laparotomy. The unsuccessful cases were those that had advanced disease in other organs. Operative results, he said, give a recovery rate of from 25 to 30 per cent. The prognosis after treatment by both medical and surgical methods had been carefully studied by Shattuck; out of the ninety-eight cases treated, the end results were known in fifty-seven cases; twenty-five of these were treated medically; the ultimate mortality, reaching to a period of eleven years, was 68 per cent.; thirty-two cases surgically treated, mortality 37.5 per cent. From these figures it was learned that cases of tuberculous peritonitis might recover under simple medical treatment, and evidence was not wanting to show that an anatomical restoration might be obtained.

Dr. Wm. Litterer of Nashville, Tenn., in the discussion of this paper, said that for the past year he had been conducting experiments upon animals (dogs, guinea pigs, cats, etc.) with the view of ascertaining whether it was possible to produce tuberculous peritonitis from the alimentary tract without involvement to the wall of the gut, or of the mesenteric or retroperitoneal glands. He said the open question as to whether we could have a primary infection of the peritoneum was answered in the negative by such men as Veit, Nothnagel, Vierodt, and a number of recent writers. The results of his experiments had been only partially successful in so far as demonstrating a primary peritonitis was concerned, but in the course of the investigations he had been able to demonstrate the passage of the tubercle bacillus through the normal intact mucous membrane without showing any evidence of lesion at the point of entrance This was the opinion of Walsham, Harbitz, Theobald Smith, Ravenel, and many others. Baumgarten's views, he said, ran counter to this, for he insisted that the bacilli always produce some lesion at the point of entry. He gave a résumé of the experimental work he had done, and said the investigations would be published in detail subsequently.

Dr. Alexander Ferguson of Chicago said that tuberculous peritonitis ran a course of more or less destruction uninfluenced by any known drug or combination of drugs that had been administered for its relief; like many other diseases within the abdominal cavity, it entered the realm of surgery just when the patient was sliding into eternity. When laboratory workers should have discovered a cure, probably a serum, capable of cutting short its progress, or obtaining results superior to operative procedures, then the surgeon would rejoice in reassigning the disease to the physician. The abdomen should be opened below the umbilicus in acute or subacute cases as soon as the diagnosis was made, or to make a diagnosis; the hand to be passed in to feel every structure within the peritoneal cavity in search for a primary focus, and having found it, it should be removed, whether it be the Fallopian tubes, uterus, ovaries, appendix, gall-bladder, or section of bowel. He said a turbid, or milklike fluid should not be washed out because the phagocytes in it were the principal curative agents provided by nature, but clear ascitic fluid should be washed out, as it had no curative power. Then the cavity was to be filled with physiological salt solution with iodoform emulsion (10 per cent. in glycerin) applied to the diseased parts. The speaker cited two cases to illustrate that early surgical interference was not contraindicated in acute tuberculous peritonitis. In chronic tuberculous peritonitis he often opened the abdomen over the most prominent part, explored with the hand, broke down cheesy material, liberated encysted fluid, flushed away tuberculous débris with saline solution, mopped dry, and smeared with iodoform emulsion. Intraabdominal tuberculous abscess was treated by evacuation, insertion of iodoform emulsion, and drainage.

The Treatment of Tuberculosis of the Bones and Joints.—Dr. Joel E. Goldthwaite, Boston, read this paper. He held that if the patient was otherwise in good health there was no reason why the area of disease should at once be excised. If to save life it was necessary to sacrifice a part, it should by all means be done; but he thought we should be very sure first that such radical measures were required, a part lacking much of its function being better than the best artificial contrivances. He thought the general treatment should not be overshadowed by surgical measures; that every hygienic measure should be used just as in tuberculosis of the lungs; life absolutely in the open air, in tents or shacks, or specially ventilated rooms, plenty of sunlight, and good feeding. This, of course, was also the best preventive measure. Local treatment, he said, should consist in the preservation of function of the part without increasing irritation at the site of the disease. Just as it was important to exercise the lungs in pulmonary tuberculosis, so he thought it was necessary when the disease attacked the bones and joints and function should be allowed up to the limit of toleration. In this way, he said, healing took place much more rapidly than when limitation of function made all the parts sluggish. He believed that conservative measures should be given a thorough trial until other lines of treatment became advisable. The operation to be performed in a given case, of course, depended upon the part affected; amputation or the entire removal of the affected part might in some cases be demanded, but at least a short period of conservative treatment under favorable conditions should first be urged. The presence of an abscess, he said, was generally first made known by interference with the function of a part, and the mere presence of an abscess, so long as it did not interfere with function, was of little importance while it remained closed. He thought if the abscess and the primary focus could be removed at the same time it would be desirable to do so; but it had to be borne in mind that a free opening was not desirable, as it offered a fresh port of entrance to infection. He thought many deaths were due to systemic infection in this way and not to the local tuberculosis. He advocated aspiration in such cases rather than free drainage. He believed that if the treatment of tuberculosis of the bones and joints were carried out along these lines the results would be better.

Dr. Wisner R. Townsend of New York said that, owing to the great advances that had been made of late years in the knowledge of the etiology and pathology of the diseases affecting the bones and joints, the question of diagnosis was deserving of special consideration at the present time. Until recently, he said, all chronic affections of the bones and joints occurring in childhood were considered to be due to tuberculosis. Arthritis caused by infection from pneumococci, streptococci, staphylococci, gonococci, colon and typhoid bacilli, and other pathogenic microorganisms were classed as tuberculous. The arthropathies occurring in nervous diseases were often erroneously included with the above, and the same was true of lesions of scurvy and the infectious processes occurring in measles and scarlet fever. Rheumatism and tuberculosis had been the two diseases supposed to cause most of the diseases of the bones and joints. Even coxa vara and fracture of the neck of the femur in children had been classed as hip disease. To-day, the speaker said, these conditions could be easily and positively made out, and the profession was keenly alive to the necessity for greater proficiency in diagnosis. The addition of the *x*-ray as an aid to such diagno-

sis had already proven of great value, and its use should be encouraged. He thought that too much attention should not be paid to the presence or absence of tuberculosis in the family history, but that the tuberculin and other tests should be thoroughly tried in surgical tuberculosis in order to ascertain their real value as aids to diagnosis. He considered tuberculosis of the bones and joints a most serious condition, and one that needed the greatest care in treatment, both constitutional and local. Outdoor life, supplemented by surgical and orthopedic treatment, was justly meeting with great favor. He thought there was no reason why mild cases of tuberculosis of the bones and joints should not entirely recover. Most operations were performed when sepsis was already a serious factor, and this should be guarded against. Mechanical treatment should be employed, he thought, from the beginning, but not continued blindly after sepsis had occurred. Apparatus of varying types should be used to preserve and restore function when possible.

Dr. A. T. Cabot of Boston said that surgical tuberculosis was, in the vast majority of cases, a process secondary to some deeper infection, the primary focus being usually in the lymphatic system, connected either with the respiratory or digestive organs. The treatment should be general and local, hygienic and operative. He thought it was the physician's first duty to put the patient in surroundings of air and sun such as had abundantly proved their efficiency in the cure of all forms of tuberculosis; secondly, he should provide in every possible way for the fullest nutrition; thirdly, he should give the diseased parts rest by apparatus which interfered as little as possible with the motion and exercise of the unaffected parts of the body; fourthly, after these fundamental needs had been provided for he should proceed by operative measures to remove or alleviate local conditions; fifthly, it was his duty to protect the community from contagion, and to this end he should teach his patients to destroy all discharges from tuberculous processes; sixthly, he should impress his recovered patients with the importance of so arranging their business or occupations that they might be able to pass a large part of their time in the open air, and so guard against a recurrence of the disease.

Dr. B. E. McKenzie of Toronto was pleased at the emphasis laid upon the matter of diagnosis by Dr. Townsend, but he had come to look upon it as a rather certain factor now, and would not be inclined to attach as much doubt to it to-day as Dr. Townsend had. There were three elements of particular importance to be considered, viz., heredity, lowered vitality, and infection. As to the rest as an element in the treatment he thought a good deal depended upon how the rest was secured. He thought that much of the orthopedic apparatus used in hip disease and disease of the spine was antiquated and out of date; he did not believe the apparatus could keep the spine even fairly well at rest. He advocated the use of the Bradford frame, and said that with it a great advantage was that the child could be kept out of doors. As to amputation he thought that when there was but one lesion, as in one limb, amputation might sometimes be an important conservative measure. As to abscesses, they might be left alone very largely. As to the position of the leg, he thought there should be flexion of from 5 to 15 degrees.

Dr. Joseph Bloodgood of Baltimore said the paramount object of treatment was the cure of the disease with complete function of the joint, the latter being the most difficult to obtain. The three factors in treatment were local rest of the diseased part, surgical intervention in selected cases, and the general hygienic treatment of the patient. To accomplish a cure with restoration of joint function depended more upon early recognition of the disease than any other factor. The public, therefore, had to be educated to the early symptoms suggesting lesion of the bone or joint, and it was necessary that the general practitioner should be keen in his differential diagnosis. He believed that in all forms of surgical tuberculosis the open-air or hygienic treatment was usually incomplete. He impressed the fact that treatment locally and generally should be continued months, and perhaps years, after symptoms had disappeared. The indications for surgical intervention were manifold and varied with the age, duration of the disease, and extent of the lesion. He thought that the employment of Bier's method had not been given proper consideration in this country. He was skeptical as to the value of injections of iodoform, etc. In children operation was contraindicated, as a rule, in all stages. In case of abscess better results were obtained by direct attack of the bone focus than by any treatment of the abscess itself.

Dr. W. S. Baer of Baltimore said he heartily agreed with those who thought that in the treatment of tuberculosis the less operative work that was done the better, particularly in cases of children, but there seemed to him to be a certain class of cases occurring after the age of fifteen in which it was possible to recognize a very early tuberculous focus in which the disease should be attacked radically. With the aid of the *x*-ray and tuberculin a pretty definite idea could be obtained of the condition. It seemed to him better to eradicate a small focus when possible than to risk a prolonged treatment. He agreed with Dr. Goldthwait in regard to allowing the joint motion within certain limits.

Dr. S. von Ruck of Asheville, N. C., desired to call attention to the use of laboratory products of the tubercle bacillus, and said that for the last two years he had been experimenting with various culture products in a series of 2,000 cases and had been convinced of the value of this method, used in conjunction with dietetic and hygienic treatment. He had had remarkably good results, he said, in the treatment of joint tuberculosis.

The Surgical Treatment of Tuberculous Glands of the Neck.—Dr. Charles H. Mayo of Rochester, Minn., presented this communication. He said the lymphatic system was increasingly appreciated for its protective and nutritive value as well as for its action in maintaining metabolism, but that until recently it had received scant attention from anatomists, and at present the great majority of the profession did not consider the glandular system except when gross evidence of disease was present. The defense function was important, and it was not unusual for the glands to sacrifice themselves in resisting invasion. He reviewed the anatomy of the lymphatic system and said that when a gland was found enlarged the first thoughts that would arise were: What is the infection? Where did it gain entrance? If a number of varied groups were diseased we had to ask what was the general or constitutional cause of the manifestation. In the cervical glands the most probable source of entrance would be the nose, throat, ear, scalp, or teeth. By far the most common source of infection apparently was the tonsil. The high percentage of tuberculosis found in the tonsil had been surprisingly instructive. The first node involved and palpable was usually the tonsillar gland, felt in the space behind the angle of the jaw. There were many lymph glands in the parotid structure, and when primarily involved by tuberculosis it usually meant that the infection had come from the middle ear. The postpharyngeal glands, when involved by tuberculosis, were likely to liquefy and open into the cellular space behind the pharynx, developing a postpharyngeal abscess. He believed that radical operations in very acute tuberculosis were questionable procedures. He classed treatment as non-operative and operative, the first including general hygiene, medicinal, *x*-ray, and congestive therapy. The prophylactic operative included the removal of the tonsils and adenoid tissue in the young. Direct surgical treatment he considered as palliative and radical. He believed that tuberculous glands were best treated by their removal, as the glands as such were destroyed by the disease, while the bacilli might be held for an indefinite period, ready to develop in case of a lowered state of vitality of

the patient. The radical operation should be a complete one for the removal of the group or groups involved. Muscles, as a rule, should be left uncut and the essential motor nerves intact.

Dr. Floyd W. McRae of Atlanta said the point made by the writer with reference to complete removal of primary foci was an important one, but it was a matter not easy of accomplishment. Tuberculosis within the substance of the parotid gland, he said, was very difficult of diagnosis; he had made the mistake of thinking it sarcoma, and had to change the diagnosis on opening into the structure. With reference to treating the open wound he had had no experience with the various iodine solutions, but had confined himself to carbolic acid, followed by alcohol and temporary drainage with silkworm gut, as first suggested by Ferguson of Chicago. These were left in twenty-four hours and drained out the excess serum.

Dr. John H. Gibbon of Philadelphia said that this form of tuberculosis was one which appealed to surgeons, because if there was one form of tuberculosis which the surgeon sees that may be considered as localized it was this one. He considered the question of diagnosis a most important one, and thought it was only in recent years that differentiation had been attempted. In the earlier stages of the disease it was desirable to try the alteratives, with hygienic and climatic treatment. He was especially convinced of this when one group of glands only was affected. With outdoor life, such alteratives as arsenic and iodides in some form, particularly hydriodic acid, improvement occurred. When the trouble was chronic and when suppuration had taken place removal of the glands was advisable.

Dr. A. H. Ferguson of Chicago said the first thing looking to a diagnosis was to inspect the nose, throat, and mouth carefully, and to have any abnormal condition there corrected. He deprecated the use of the *x*-ray, unless in connection with suitable change of climate. He did not think the kind of incision materially mattered. He deprecated the complete operation where there was a mixed infection. The only case he had lost was one in which he had operated, in spite of a mixed infection.

Dr. W. W. Keen of Philadelphia said he had never followed the practice of dividing the sternocleido muscle, as he had always found that by lifting it he had been able to get access to the glands with perfect ease. The principal glands to be removed were those in immediate contact with the jugular vein, and occasionally, though rarely, with the thoracic duct. Injury had occurred more frequently to the thoracic duct in the removal of sarcomatous glands because of the greater adhesions. He said he was a strong advocate, and had practised for years, the thorough extirpation of these glands. He removed every gland he could find, big or little, because he was sure the smaller ones would become enlarged, as they were probably already infected. He had found it often difficult to make the diagnosis between tuberculous glands and Hodgkin's disease, but he had found that in the tuberculous glands much more commonly there were chains of glands matted together which could be distinguished as individual glands in a mass, rather than the enlarged single glands met with in the earlier stages of Hodgkin's disease.

(*To be Continued.*)

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held April 23, 1906

Dr. Floyd M. Crandall in the Chair.

Report of Cases Presenting Mild Constitutional Symptoms with Grave Internal Conditions Discovered by Operation.—Dr. Frederick Holme Wiggin reported these cases. The first case was that of a man, forty-three years old, who was presented to him on February 5, 1906, with the history that for the past three years, following his wife's death, he had suffered from constipation, insomnia, and biliary attacks. He also had a chancre on his lip. The insomnia and constipation increased. Cathartic medicine gave him but little relief. The day before Dr. Wiggin saw him he was seized with a violent pain on the right side of the abdomen. His temperature was 99° and pulse 82. Under enemata, castor oil, and tincture of opium he appeared to be somewhat relieved, but the temperature went to 101°. The blood count showed a leucocytosis, and this was found to be increasing. Dr. Lambert was called in consultation and operation was advised. A few days later the symptoms became normal, the pulse falling to 68. Operation was consented to and the cecum was found to be bound down by firm adhesions, which were broken up with much difficulty. The appendix was found to be coated over with thick adhesive material. There was found an abscess containing a dram of pus. The patient made an uneventful recovery, about a month later going to Europe in the enjoyment of good health. Dr. Jeffries examined the tissue and reported inflammatory changes about the appendix which were very extensive, but he was unable to say whether they were specific in character or not. There were no evidences of malignancy or tuberculosis. The man also suffered from arteriosclerosis, the arteries being very hard. If the patient had been left alone no doubt the abscess would have broken through, causing an extensive peritonitis.

The second case reported was that of a woman, thirty-one years old, who for five years past had been troubled with constipation and loss of appetite. She had half a dozen attacks of pain on the right side of the abdomen, etc. The pain was severe and the temperature 99.5°. When Dr. Wiggin saw her the temperature was from 100.2° to 100.4°. Under the use of castor oil her condition improved. The reason for operating was because of the pain and tenderness over the cecum under deep pressure. At operation the appendix was found to be flexed upon itself and a dram of pus was found encapsulated.

The third case reported was that of a man who for three months had a certain amount of pain and nausea every morning. This pain was also very apparent over the cecum when he drove his carriage over a stone or other obstruction. The pulse and temperature were normal. There was a little tenderness over the cecum on pressure. The patient looked ill and an operation was advised. The appendix was found to be thickened and, when opened, five gallstones were discovered in it, one of which had ulcerated nearly through. On the under side of the appendix where the ulceration was there was noted a patch of peritoneal inflammation about the size of a quarter. Dr. Wiggin said that his experience taught him that when a patient presented himself who gave a history of no desire for food, constipation, bilious attacks, with pain or tenderness on pressure over the cecal region, operation should be performed.

The Vitascope—Moving Pictures Showing Certain Manifestations of Nervous Diseases and Illustrating Surgical Operations.—Dr. Cecil MacCoy gave this demonstration. In it he showed moving pictures of characteristic gaits of locomotor ataxia, paralysis agitans, spastic paraplegia, etc. Also hysterical intentional tremors, ankle clonus, muscular dystrophy, chronic chorea, and the *petit mal* form of epilepsy. He also produced pictures of a certain French surgeon amputating at the knee joint, etc.

The Use of Moving Pictures in Teaching Diseases of the Nervous System.—Dr. Edward D. Fisher briefly alluded to the use of the vitascope as an aid in teaching, and thought a great deal was due Dr. MacCoy for bringing this subject before the society, and in such a novel way. Yet he did not think it could take the place of demonstrations on the living subject, provided sufficient material could be obtained for teaching purposes. The vitascope no doubt was a great aid in enabling teachers to show patients with nervous diseases, but he did not believe they would ever do away with the living patients.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Sept.	1-6
Arizona*	Ancil Martin, Phoenix	Phoenix	October	1
Arkansas*	J. P. Runyan, Little Rock	Little Rock	October	9
California	Chas. L. Tisdale, Alameda	Los Angeles / San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	October	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Nov.	13
Delaware	P. W. Tomlinson, Wilmington	Dover	Dec.	11
Dis. of Col'bia	W. C. Woodward, Washington	Washington	October	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	October	17
Georgia	E. R. Anthony, Griffin	Atlanta	October	9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October	2
Illinois	J. A. Egan, Springfield	Chicago	October	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October	23
Iowa	J. F. Kennedy, Des Moines	Des Moines	Sept.	—
Kansas	T. E. Raines, Concordia	Topeka	October	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October	19
Maine	Wm. J. Maybury, Saco	Portland	Nov.	13
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept.	11
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	October	9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October	2
Mississippi	J. F. Hunter, Jackson	Jackson	October	9
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov.	20
Montana*	Wm. C. Riddell, Helena	Helena	October	2
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City		
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	October	16
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo,	Sept.	25
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	1907
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	October	2
Ohio	Geo. H. Matson, Columbus	Columbus	Dec.	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Sept.	25
Oregon*	B. E. Miller, Portland	Portland		
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg,	Dec.	—
Rhode Island	G. T. Swarts, Providence	Providence	October	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	1907
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May,	1907
Texas	T. T. Jackson, San Antonio	Houston	October	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	October	1
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Clarksburg	Nov.	13
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne	Sept.	5

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

South Carolina.—At the examination held in June, there were fifty-two applicants; of these, thirty-nine passed and thirteen failed.

North Carolina.—At a recent meeting of the State Board of Medical Examiners, a resolution was adopted to revoke the license of any physician who is addicted to the use of drugs or alcoholic stimulants to such an extent as to incapacitate him for the performance of his duties as a physician.

Missouri reciprocates under certain conditions with Colorado, Delaware, District of Columbia, Indiana, Iowa, Kansas, Kentucky, Maine, Michigan, Minnesota, Nevada, New Jersey, Wisconsin, and Wyoming. Physicians who are licensed in the above-named States can register in Missouri if they received their license prior to March 1, 1901, and had previously graduated from a medical college with four-year requirements. If they received their license since March 1, 1901, in addition to having a diploma from a four-year medical college they must have passed an examination before the State Licensing Board and have obtained an average of at least 75 per cent.

Wisconsin.—At the recent meeting of the State Board of Examiners, sixty-seven licenses to practise were issued to non-resident physicians. The one-year restriction formerly imposed on nonresident doctors has been removed. The following officers were elected: *President,* Dr. W. T. Sarles of Sparta; *Secretary,* Dr. J. V. Stevens of Jefferson. The board resolved that a committee of three be appointed to inquire into charges recently said to have been made, that the State medical examiners are acting in an irregular manner, and that the secretary of the board was acting in the interests of advertising houses.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending August 11 and 18, 1906:

	Week of Aug 11		Week of Aug. 18	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	371	173	376	176
Diphtheria	128	16	151	20
Measles	125	4	67	6
Scarlet Fever	53	—	32	2
Smallpox	1	—	1	—
Varicella	8	—	17	—
Typhoid Fever	116	16	113	10
Whooping Cough	56	11	51	1
Cerebrospinal Meningitis	9	10	0	4
Malarial Fever				
Totals	867	230	817	236

Carcinoma of the Pancreas.—Enrico Grimani tells us that there may be two kinds of foci in the pancreas from which carcinoma may start, the epithelium of the glandular acini and that of the excretory ducts. The last-mentioned structures are the most frequent source of malignant formations. The islands of Langerhans may also be considered as capable of originating cancers. The author has examined the pancreas in a man who died from carcinoma of the pancreas, which enclosed the duct of Wirsung, which had become transformed into a cyst throughout its length; the ductus cholodocus was also affected, while the cystic duct was dilated. The neoplastic alveoli were lined with cylindrical epithelium; the growth was primary in the pancreas, secondary in the liver.—*Archivio per le Scienze Mediche.*

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Illinois, Galesburg	July 28–Aug. 4	2	.
Louisiana, New Orleans	July 28–Aug. 4	9	2
Michigan, Detroit	July 28–Aug. 4	2	..
Missouri, St. Joseph	July 28–Aug. 4	1	.
New Jersey, Elizabeth	June 30–July 7	1	..
New York, New York	Aug. 4–11	1	..
Pennsylvania, Columbia	July 28–Aug. 4	1	
Texas, Greenville	Mar. 26–Aug. 6	33	.
Washington, Spokane	July 1–31	1	..
Wisconsin, Appleton	July 28–Aug. 4	3	..
Milwaukee	July 14–21	1	
"	Aug. 4–11	1	..

SMALLPOX—FOREIGN.

Africa, Cape Town	June 30–July 7	1	.
Argentina, Buenos Ayres	May 1–31	.	107
Brazil, Pernambuco	June 15–30	.	2
China, Hongkong	June 9–30	4	3
Shanghai	June 23–30	1	1
France, Paris	July 14–21	8	
Great Britain, Liverpool	July 21–28	4	
Chile, Antofagasta	June 21–July 5	33	3
India, Bombay	June 26–July 10		7
Calcutta	June 23–30		10
Madras	June 30–July 6		4
Rangoon	June 23–30		4
Italy, General	July 12–19	4	..
Russia, Moscow	June 30–July 21	11	7
Odessa	July 14–21	5	2
St. Petersburg	June 30–July 7	6	2
Siberia, Vladivostok	June 14–28	2	.

YELLOW FEVER.

Cuba, Habana	Aug. 15	1	
Mexico, Merida	July 22–28	12	7
Tierra Blanca	Aug. 12	1	
Vera Cruz	July 22–28	1	1 Imp. f'm Merida

CHOLERA—INSULAR.

Philippine Islands, Manila	June 23–30	41	40
Provinces	June 23–30	117	71

CHOLERA—FOREIGN.

India, Bombay	June 26–July 10		78
Calcutta	June 23–30		28
Karachi	July 1–8	1	1
Madras	June 30–July 6	..	17
Rangoon	June 23–30	..	4

PLAGUE.

Australia, Brisbane	June 20	1	1
Sydney	June 23	1	1
Chile, Antofagasta	June 21–July 5	5	1
China, Hongkong	June 9–30	112	93
India, General	June 23–30	806	700
Bombay	June 26–July 10		74
Calcutta	June 23–30		23
Karachi	July 1–8	24	17
Rangoon	June 23–30		137
Japan, Formosa	June 1–July 10	671	640

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Original Articles.

JAPANESE NAVAL SANITATION.*

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LATE DIRECTOR-GENERAL OF THE MEDICAL DEPARTMENT OF THE IMPERIAL JAPANESE NAVY.

MR. PRESIDENT AND GENTLEMEN:

I am here to-day owing to an invitation from the committee of the Cartwright Lectures. We Japanese feel that it is not only a great honor to me personally but also a great compliment paid to the medical profession of the Japanese Empire, and I thank you all on their behalf for your cordial and friendly feeling towards us.

I was selected as the recipient of your invitation by Professor Kitasato of the Home Department and Education Department because I had some experience with naval hygiene and in forming the preventive measures for diseases occurring among the seamen during my term of office as a naval surgeon between 1872-1893, but as I have no other qualification I am afraid I shall not be able to satisfy your expectations, and I hope you will listen with indulgence to my lectures.

As you all know, previously deaths from diseases during wars had been several times more numerous than those from swords, bullets, and shells. In looking through the history of the last two hundred years we find them in the ratio of 1 to 4. As it is too slow and not worth while to narrate all the details I will not describe them here, but will limit myself to a general history of hygiene in the Japanese Navy, hitherto not well known to the world, *i.e.* from 1872 to 1905, and also to the experiences of our medical officers during the Russo-Japanese War. And as I believe the object of your committee is to hear the present condition of Naval and Military sanitation in the Japanese Empire, I will try to lecture on that subject to my best ability.

I have prepared a table showing various details from 1878 to 1888 and I am now going to explain all the details. From 1888 until the present day there have been no important changes, and if I explain to you the constitution of the Medical Bureau of both Army and Navy, and also the number of cases of illness before and during the Russo-Japanese War, I think you will grasp all the important points of my lectures.

The average number of cases of general disease during 1878, 1879, 1880 was just over 4,327 per thousand, that is, one sailor suffered 4.32 times every year. The death rate averaged 16.34 per thousand and the invalid rate 8.75. The number of patients with kakke was 349.33 per thousand. Those who died from it averaged 7.96, and those invalided, 2.45. Therefore the number of sailors lost through death and made invalids owing to general diseases was 24.09 per thousand and those lost through death and invaliding from kakke, 10.43 per thousand. If we now subtract 10.43 from 24.09 only 13.66 remains. Therefore it was clear that if kakke could be wholly exterminated, the number of losses from illness would decrease to 13.66.

From 1881 to 1883 the number of those was slightly decreased. In 1884 the general aspect of the health of the Navy suddenly changed and the number of hospital cases decreased correspondingly with the decrease in kakke. The number of general diseases was 1,776.27 per thousand, that is, one person became ill 1.77 times a year. Deaths per thousand decreased to 7.98, and invalids to 7.80. The number of kakke cases averaged 127.35 per thousand. Deaths from it decreased to 1.42. Therefore the average of deaths and invalids from general diseases decreased to 15.78 and that of kakke to 1.60. Similarly in 1885 the number of general diseases decreased to 974.85 and deaths to 7.84. Kakke decreased to 5.73 without death. Therefore the number of deaths and invalids decreased to 12.14. In 1886 general diseases per thousand averaged 564.13, deaths 7.43, and kakke 0.35 without death or invaliding. In 1887 general diseases per thousand were 434.22; deaths, 6.04; and invalids, 6.15. In 1888 general diseases per thousand averaged 400.59, deaths, 7.08; and invalids 9.15. Therefore the number of losses through deaths and invalids per thousand in 1884 was 15.78; in 1885, 12.14; in 1886, 12.57; in 1887, 12.19; in 1888, 16.33. If we now compare this period of 5 years with that of the 3 years from 1878 to 1880 we find the marked decrease of general diseases and disappearance of kakke with corresponding decrease in the loss of sailors year by year. These good results must depend upon certain causes, and now I will try to describe various important facts since the establishment of the Naval Medical Bureau in 1872.

Establishment of the Naval Medical Bureau.—The Naval Medical Bureau of the Japanese Empire was established for the first time in 1872. At that time there was not one who had a thorough idea of naval hygiene, because up to that time there was no medical officer in our navy, and other officers thought that the necessity of medical men in the Navy was simply for treating diseases and wounded. Even the medical officers so thought. They never had the slightest idea of doing anything in preventive medicine or in general hygiene. Accordingly the only medical record left from 1872 to 1877 was limited to the description of results of treatment, names of diseases, and names of patients. Between 1876 and 1883 the records gradually began to include facts outside the patients in the naval hospital and also some hygienic affairs. Finally from 1884 the records became more and more complete, giving various tables illustrating the naval hygiene, by the issue of the instructions relating to the duties of the medical officers.

The Education of Naval Medical Officers.—At the time of the establishment of the medical

*Abstract of the Second Cartwright Lecture delivered before the College of Physicians and Surgeons, New York, January 29, 1906.

Bureau in 1872, Dr. Wheeler, attached to the British Legation, was invited by the Naval Hospital to give lectures, both theoretical and practical. In 1872 Dr. William Anderson was specially invited from England to coach the junior medical officers and students. In 1877 16 men qualified and passed out of the school. These were the first graduates. Chief among them were the present Surgeon-Generals Yamamoto, Totsuka, Kimura and Suzuki. However, later on (during my absence in England) the levying of medical students was stopped and the special teacher was discharged. It was then found that as the new medical officers could not understand any foreign language, they could not only not learn anything about naval and military hygiene in foreign lands but they could not follow the progress of medical science in general. Besides, they could not talk and associate with foreign medical officers, and on occasions when they went to foreign ports or lands, they could not find out the sanitary conditions, especially those relative to the endemic and epidemic diseases of those ports or lands.

Again this want of knowledge of foreign languages was very inconvenient when it came to buying food, materials, drinking waters, etc., and thus there was always fear of the invasion of infectious diseases through this channel. Moreover, the foreign language used by the Imperial University in teaching medicine was German, yet that most useful and important to our naval officers was, I thought, English. Finally, as unless those who served in the Navy were able to keep up the general spirit characteristic of the sailors, they could not work hand in hand with the fighting or line officers and would find many inconveniences in conducting the sanitary affairs. I insisted upon reestablishing the naval medical school and raised some students in 1881. Besides the full medical course, English was taught as an extra subject, and by 1894, eighty students in all were graduated as officers. But after that year (in 1893 I retired from active service, was placed in the reserve list, and became a member of the House of Peers) fresh students were not again raised and new medical officers were adopted from among those who had studied in the Imperial University and specially licensed medical schools.

Medical officers were also sent abroad to pursue further study in medicine. In 1872 Drs. S. Ono and K. Yoshida were sent to England, in 1874 Dr. T. Ishigami to England, in 1875 Dr. K. Takaki to England, and in 1878 Dr. A. Saneyoshi to England. Since then one or two medical officers were sent each year to Europe, chiefly to England and Germany.

The Education of Nurses.—Nurses were educated and taught the subjects necessary to their calling in the hospital at each naval station. I entered the Navy in 1872 and began to treat the sick and wounded. What at once attracted my notice was the large number of kakke patients and the numerous deaths resulting from it. And as this disease truly played havoc with the health of our Navy and killed many so as to greatly reduce our fighting strength, I directed all my efforts toward finding its cause and treatment. By doing so, I meant to prevent the outbreak of this disease and provide against unforeseen danger through ill-health in time of crisis of our Empire. In pursuing this purpose I met with many difficulties and passed through years of hard work.

The first time I heard of the fearful nature of kakke was forty-four years ago. At that time guards were despatched from several Daimios to Kyoto to act as protectors of the Imperial Palace, and my father being one of them stayed there for over a year. On his return, he told me of the disease called kakke which killed many of these men. They attributed the cause to food, and called a provision box the "kakke box."

Later, in 1868, that is, in the year of the Meiji Revolution, I served for eight months in the army of Prince Shimadzu but did not see any cases of kakke. As said before, I entered the Navy in 1872 and began then to treat kakke patients for the first time. Up to May, 1875, I had seen several hundreds of kakke cases at the Naval Hospital. In summer several acute cases appeared daily. Often five or six cases had to be treated at the same time, and the house officers had to work very hard through the day and night. At that time, the kakke patients constituted three-fourths of the whole number of patients. The treatment adopted was purgatives and digitalis for edema, palpitation, etc.; strichnine, iron, etc., for numbness and paralysis; tincture of aconite, for hypersensibility of the muscles; purgatives and venesection for acute cases. This treatment was general, and there was no definite opinion as regards the food.

Conditions being such, it became my fixed desire to discover the cause and treatment of kakke. But I thought that with my insufficient knowledge of medical science, I could not possibly discover them, and from then on the desire to go abroad in order to fit me for attaining my object never left my thoughts even for a moment. At last in June, 1875, the desire was fulfilled and I started for England. I reached London in July and entered St. Thomas' Hospital Medical School in October. After staying there for over five years, I returned to Japan in November, 1880, and was made the director of the Tokyo Naval Hospital in December. Thus, I got the opportunity to treat kakke patients again. The general conditions on my return were exactly the same as before I went to England, and with subsequent increase of sailors, more kakke cases appeared. At times when the disease was in full force we found the hospital too small and often had to use neighboring temples. Moreover, acute cases were many and the medical officers had a very busy and hard time. Such conditions struck my heart cold whenever I thought of the future of our empire, for unless we could discover the cause and treatment of kakke, our Navy would be of no use in time of need.

As a first step toward the cause and cure of this disease, I began to note the localities and seasons and to examine sailors in ships, barracks, etc., and I obtained the following facts. (1) Kakke occurred mostly from the end of spring to summer, but it was not limited to the warm season, sometimes occurring during the severe cold of winter. (2) It varied in different ships, barracks, etc. (3) Even in the same ship, it appeared in some stations, but not in others. (4) Within the same building and with the same clothes it sometimes occurred and at other times it did not. (5) I discovered that although clothes, food, living, etc. were not quite the same in all stations, yet they were almost similar.

With these facts I could not easily discover the cause, and I went on with further investigations with the following results: (1) As regards the class of patients in general, I found that sailors, soldiers, policemen, students, shop-boys, etc., were those who most suffered. The upper class also had but more rarely become affected. (2) The people living in the same place suffered unequally, that is, some suffered and others not. (3) Although it occurred mostly in large cities, like Tokyo, Osaka and Kyoto, yet it sometimes appeared in other cities and towns also.

Thus with such results and without discovering

the cause of kakke the time quickly passed to the year 1881. In February of the year 1882 I was appointed the Vice-Director of the Naval Medical Bureau. About that time it was found to be necessary to provide an extra medical officer besides the usual number for training ships going for long voyages with cadets when they had finished the Naval College course, because kakke used to occur abundantly during a voyage.

In 1882 there was a crisis with Corea and three warships were sent to (Chemulpo) Ninsen and Saibutsu Bay. They stayed there only forty days, but owing to the shortness of hands caused by the prevalence of kakke among the sailors, the officers felt quite unfit for battle. (For example, on board *Hiyei* out of 330, 195 suffered). It was a very anxious time for those in position, because if those three ships had been captured by China at that time, we should have been unable to cope with the North China Squadron. As a consequence I handed to the chief of Naval Medical Bureau on the 24th of June, 1882, a memorandum describing the facts.

Following this, in August, 1882, H.I.M.S. *Fuso,* in spite of anchoring off Shinagawa Bay had to send half of its crew ashore for treatment for kakke.

Continuing still further, I examined the reports of the Tokyo and the Yokohama Naval Hospitals for 1881 and discovered that three-fourths of the patients were suffering from kakke.

In 1883 I got an order from the Minister of the Navy to permit me to examine the hygienic conditions of ships, barracks, schools, etc., belonging to the Navy. I found that although the working hours, clothing, dwelling houses, etc., were similar everywhere, yet in food there was a great deal of difference. So I now asked the head of each section department to send me in the reports describing the details of food taken three times daily for a week. From this I discovered the following facts: (1) Albuminates contained in the food were not sufficient to make up for the amount of albuminates discharged from the body. (2) On the contrary, the food contained too much carbohydrate. If we now look into the table recognized by the scientific world showing the comparative amounts of nitrogen and carbon discharged daily by a fair sized adult, we will see that carbon 310 grams and nitrogen 20 grams, *i.e.* N. 1 to C. 15.5. (3) The food taken by our sailors showed N., to C. 18 to 32. (4) The greater the difference in these proportions the more kakke occurred; and the less the difference, the less kakke.

After obtaining these important facts I came to the conclusions that: (1) Kakke is caused by the disproportion of nitrogenous and nonnitrogenous element (C. and N.) in the food; that is, the amount of the nitrogenous was insufficient to make up the loss and that of nonnitrogenous excess. (2) The symptoms of kakke patients are really due to these causes, and the good results obtained by purgatives are due to their powers in getting rid of the superabundant carbohydrates. (3) The changes occurring in nerves, muscles, etc., are due to their inability to repair the waste tissues, and consequently to perform their physiological functions; while superfluous carbohydrates act as unuseful elements interfering with nutritive process.

In October, 1882, I offered a proposal to the late Count Kawamura, the chief purpose of which was to change the old dietary system. When this proposal was put forward before a meeting there was a good deal of opposition. They said that the change was too radical and instanced the great disturbance caused by the change of diet in the Italian Navy some years before. They also called attention to the new system of fixing the amount of food by quality and quantity instead of by monetary value. In spite of difficulties caused by this opposition, my opinion finally prevailed, and the new system was adopted. But, as we required a few months longer in order to examine and fix the quality and quantity of food to be given, and as even some medical officers were secretly in opposition, I took this occasion to try the new system on a certain number of patients in the Tokyo Naval Hospital, comparing the result with that of the old system.

The experiments were continued for a period of four weeks. The average increase of weight of the five patients on the new diet was 160 momme,* that of the five patients on the old diet was 170 momme. Of the patients on the new diet all were discharged cured; of those on the old diet four were discharged cured, one became tuberculous.

In December of the same year, in order to ascertain the amount of food suitable for officers and men, a special body weight table was published and made to be reported on a certain fixed date yearly. By this means we got a comparative scale of bodily weight noted once every month and continued for five years from 1884 to 1888.

This table showed that the bodily weight was highest during the months of February, March, and April and lowest in August and September. Therefore after 1889 the weights were taken only in March and September every year.

During ten years from 1884 to 1893 there was more or less difference yearly, but, taken as a whole, the weight has increased nearly eight pounds. From 1894 to 1903, for ten years, there was not much change in weight, and I think that shows the sufficiency of food supplied. During the former ten years the number of general diseases decreased in accordance with the yearly increase of weight. The last ten years showed no change in weight and diseases. This shows that there is more or less increase or decrease even in a healthy body during twelve months, and that these changes are physiological and have no relation to health.

On September 26, 1883, I for the first time spoke on the cause of kakke before the meeting of the Society of Hygiene, and published my opinion that it was due to a disproportion in the carbon and nitrogen content.

On October 5, 1883, I was promoted to be director of Medical Bureau. Soon afterward I asked the Minister of the Navy to have a special committee of investigation on the cause of occurrence of an almost unprecedented number of cases of kakke on board the training-ship *Riujo,* which left Shinagawa on December 19, 1882, and returned to Shinagawa on October 15, 1883, after voyaging through New Zealand, South America and Hawaii, spending 271 days.

My proposal was adopted and a special committee consisting of the following members was formed: Rear-Admiral Maki, chairman; Surgeon-General Takaki, Captain Isobe, Commander Kunitomo, Fleet-Surgeon Kagami, Fleet-Surgeon Toyozumi, Paymaster Ijichi, Paymaster Kurihara, Secretary Iwamura, Lieutenant Serada, clerks—Matsumura, Sakamoto, Mishina.

The first meeting of the committee was held on November 12, 1883. Chairman Maki explained the object of this committee and I was appointed chief of the investigation board. After this, meetings were held on Monday, Tuesday, Wednesday, Thursday and Friday every week up to April 11, 1884, and altogether the committee met seventy-nine times.

*One momme is the equivalent of 3.8 grams Troy.

As a result, I, with the assistance of Staff-Surgeon Toyozumi, compiled ten chapters entitled: (1) Patients, (2) Clothes, (3) Bedding, (4) Food, (5) Drink, (6) Housing, (7) Labor, (8) Rest, (9) Voyage, (10) Anchorage, (11) Weather and Climate, and (12) Conclusion.

Besides, we made up 6 tables on diseases, 32 tables on food, 1 each on drink, climate, weather, and temperature, and also tables on the food supplied daily to petty officers, sailors, students, gunroom officers, and officers. Finally the committee met to discuss the results of investigations on February 12, 1885.

In November, 1883, I was informed of the sailing of the training ship *Tsukuba* in a short time, and at once planned to utilize this opportunity to vindicate the new system of reformed dietary by making *Tsukuba* voyage through the same route as *Ryujo*. So in spite of the proposal of October, 1882, I demanded the immediate practical application of the new diet before the sailing of *Tsukuba* on November 24, and in consequence, the Minister of the Navy issued the order of the change of diet throughout the Navy on November 29. Again on November 26, 1883, I proposed the necessity of the Medical Bureau having the reports of food supplied in ships, barracks, schools, etc., every month, and in the following December the minister ordered its application. These reports have continued until the present day.

On November 29, 1883, I had the honor of being presented to His Imperial Majesty at Akasaka Palace, and on this occasion explained my views as regards the cause and prevention of kakke. There were three chief reasons for my representation: (1) The fighting strength of the Army and Navy engaged in the protection of our empire is greatly weakened through deaths and invalids caused by kakke, and the latter gives a great anxiety to those in position to look after the hygiene of both Navy and Army. (2) Many students with bright prospects may have to stop their studies or may die from this disease. That would be a great misfortune for the future of our empire. (3) If we discover the cause and preventive measures for this disease, it will be recognized as a great forward movement.

The Methods for Investigating the Cause of Kakke.—(1) As we cannot discover the true origin of kakke in spite of examination of symptoms, etc., we must use some other means. (2) In order to examine the food necessary for nourishing the human body, it is important to know the comparative scale of nutritive elements, that is, albuminates, fat, carbohydrates, and salts, and of C. and N. (3) In examining the suitability of nutritive elements in food taken by those suffering from kakke, it is found that the proportion is not proper. (4) The causes of this disease are due to the loss of equilibrium in the proportion of nutritive elements and also to the deficiency of a certain element; that is, the compounding of food is not properly done. (5) The occurrence of kakke due to the deficiency of a definite element, that is, albuminate, is shown with the examples of the long voyages of *Asama, Tsukuba, Ryujo,* etc. The disease does not occur if the food is well supplied. (*a*) It does not occur among men having a sufficient supply of food or among officers. (*b*) In voyages with long stoppages at ports and short sailings. (*c*) From 1882 to 1883, when *Ryujo* went for long voyages, the disease disappeared completely as soon as she arrived at Hawaii and was supplied with fresh eating materials. (6) High temperature, moisture, marshy air, crowding, hard labors, nervous exertion, coarse food, etc., cannot be considered the chief causes of kakke, because if they are the causes both Europeans and Americans ought to suffer, but on the contrary, they do not. (7) In considering them from both theoretical and practical points, they seem quite reasonable; therefore, the true cause of kakke lies in the wrong method of food supply. Now that the monetary method of giving food has an important relation, and as this method is considered wrong, it ought at once to be changed so as to make our fighters healthy and unconquerable.

In December, 1883, instead of the very simple rules of the former time, I compiled a new book of instructions consisting of seventy-seven articles and twenty-two blank forms, and had it used throughout the Navy by the approval of Minister of the Navy. This book, since several times revised, is still being used.

On January 15, 1884, Jungi Kawamura, Minister of the Navy, issued the following notification to the Navy: "It is hereby ordered that the following regulations in regard to the supply of food to the petty officers and men in ships and barracks shall be observed from February 1, 1884.

Regulations in Regard to the Supply of Food to the Petty Officers and Men in Ships and Barracks.

Article I. The food of petty officers and men in ships and barracks shall be under the control of the principal officer under whom they are serving, and the articles of food shall be bought with the money allotted for the purpose, and supplied to them.

Article II. The articles of food shall be as follows: Rice, bread, beef (fresh or preserved), salted beef, salted pork, fowls or eggs, fish, *miso,** shoyu (sauce), vegetables (potatoes, carrots, radishes, cabbages, and onions), beans, wheat, flour, tea, fats and oils (suet or lard, butter, olive oil, oil of the sesamum orientalis), sugar (and starch), milk, vinegar, spices, alcoholic liquors, salt, pickles.

Article III. The articles of food shall be bought by the paymaster by order of the officer in command, and they shall be given out after being examined by the surgeon.

Article IV. A record of the articles of food shall be kept by the paymaster, which record shall frequently be examined by the officer in command.

Article V. If the preserved articles of food are found to be in bad condition, the matter shall be reported by the paymaster to the officer in command, who, in turn, shall order the surgeon or other officer to examine them and shall report the matter to the Minister of the Navy Department through the chiefs of different departments.

In 1883, after my proposal to reform the food system on November 26, I made a great effort to have the *Tsukuba* go over the same route as the *Ryujo*. There was opposition to this from various points and the permission could not be obtained easily, but in the end, after much discussion, all difficulties were overcome except that of expense. So, with the knowledge of the Minister of the Navy, I consulted Hakubun Ito, member of the Imperial household, and Seigi Matsugata, Minister of Finance, and finally reached my goal by the special allowance of 60,000 yen from the treasury.

Before the sailing of the *Tsukuba* a special committee for investigation was put on board, and consisted of Captain S. Arichi, Lieutenant Y. Matsumura, Surgeon T. Aoki, and Paymaster N. Kataoka.

The food supply was ordered according to the new system. The vessel sailed on February 2 and returned to Shinagawa on November 16. The result obtained was good, comparing it with that of the *Ryujo*.

*A kind of sauce made of beans, barley, and salt.

When the good report at the end of September of the year ("no kakke") of the experimental voyage of the *Tsukuba* became known, the principal men (Minister excepted) in the Navy for the first time began to support me in my fixed purpose. They said that they had always opposed me in their hearts and only obeyed the new regulation because they were ordered by the Minister, but they must give in now with such powerful practical proofs.

In January, 1885, on looking through the reports of 1884, I was greatly satisfied with the results. The number of general diseases was nearly halved and that of kakke considerably decreased with no death. With such results I began to make public more and more my views on the preventive measures for kakke.

On February 2, 1885, Baron Ishiguro, Surgeon-General of the Army, who is my close friend, published a book on kakke. He had studied the cause and preventive measures for some years and came to the conclusion that the chief cause of kakke is the unhealthy and unwholesome air in rooms, and that the disease can be prevented with the supply of fresh air.

On February 13, 1885, I made a new proposal for using barley and rice equally instead of rice alone, and of having this adopted from March 1, as the season of kakke was approaching, under the following rules: From March 1 to March 15, only once, at breakfast; from March 16 to 31, twice a day, morning and evening; after April 1, at every meal. I did this for the following reason:

Although the number of cases of kakke decreased considerably (almost to half of the year before), and deaths in the Navy had become so few, almost unprecedented since the establishment of our Navy, owing to the new food regulations of February, 1884, yet the disease had not yet disappeared completely, and we must make further efforts to exterminate it. Then I thought of the plan of using barley instead of bread alone, as the men could eat the former better than the bread. From this I expected better results. The Minister of the Navy ordered the addition of the word "barley" amongst the articles of food, and its practical application on December 21 throughout the whole Navy. As I saw uneasiness arising among the Navy officers and men owing to the change, and as, moreover, I wanted to report the full results of the investigation on the voyage of the *Ryujo* and also wanted to tell the purpose of this new change, I, with the approval of the Minister of the Navy, delivered the following address at the Naval Club on February 25:

"All of the gentlemen here present will remember the orders, C. No. 2,743 (2), issued on the 29th of November, 1883, and C. No. 7, issued in January, 1884, by which regulations regarding food were made for the first time. By last year's experience we have found that most of the men dislike meat as well as bread, and we do not know what we shall do next. But if we leave the matter to their own choice, we shall certainly have a great many cases of kakke, as has hitherto been the case, especially as more than 1,000 new men have been enlisted this year. Now, there is nothing better than barley food for preventing kakke. As, however, barley is coarse in appearance, we are afraid that some of the men who do not understand the object of the improvement in the scale of diet will feel dissatisfied. We consequently wish to speak about the preventive measures to be adopted against kakke and to take this opportunity of reporting the result of the examination into kakke on board the *Ryujo*.

"That kakke can be prevented by an improvement in the scale of diet has been deduced from scientific reasoning, and has been proved by experience in our Navy, and for a long time we were planning such preventive measures. Fortunately, G. No. 2,743 (2) was issued on the 29th of November, 1883, directing that nutritious food should be given as far as possible, to which followed the regulations in regard to the supply of food, which were issued with C. No. 7, in January, 1884. According to these regulations, the Medical Bureau drew up tables showing the proper amount of food for healthy men and invalids, and distributed these to vessels, barracks, and hospitals, thus trying to insure the health of the men. As, however, we had expected, these suggestions often could not be carried out, especially in the case of newly enlisted men, who not only dislike bread, but cannot take a proper amount of meat. If things are left in such a condition, there is no doubt, from recent experience, that we shall again have a great many cases of kakke this year, in spite of the favorable result shown in the decrease of cases of kakke which was obtained in the year which followed the improvement in the scale of diet. This is why we decided to give the barley food. We believe that the majority of the men in our Navy have been used to take barley food from their childhood, so that in reality they can eat it, although they show their dissatisfaction at it after becoming accustomed to the rice given to them since they entered the Navy. It is accordingly considered that the best preventive measure, at present, against kakke, will be to give barley, which it was directed should be given to the Navy in general from the month of March by the order of the 21st inst. If this order is carried out strictly, we are sure to find no case of kakke in our Navy. We consequently ask you, gentlemen, that you will kindly help us in the work of prevention, for the good of our country, according to the order just given."

On March 19, 1885, I obtained the honor of an interview with His Majesty the Emperor and presented the reports of the following items: (1) The results of kakke investigation on board the *Ryujo*. (2) The decrease of kakke from the gradual improvement of diet since January 15, 1884. (3) A great probability of exterminating the disease from the Navy in a few years.

An March 28, 1885, I for a second time spoke on the preventive measures of kakke before the meeting of the Hygienic Society of Japan; the chief items of this address were: (1) The report of the investigating committee placed on board the training-ship *Ryujo* during its voyage in 1883. (2) The report of the experimental voyage of the *Tsukuba* in 1883. (3) The results obtained through the examination of food supplied in 1883, that is, a very small quantity of nitrogenous food as against the large amount of carbohydrates, the proportion being nitrogen 1 to 28 of carbon. In addition, the occurrence of numerous cases of kakke and general diseases during that year. (4) The good results obtained by improved diet since 1884 and the difference brought about in the proportion of nitrogen and carbon by various changes in the proportion of diet.

Soon after my speech, Toyosaku Murata, a member of the Hygienic Society, wrote a long letter to a daily newspaper against my opinion.

On April 6, 1885, Prof. Ogata of the Imperial University and Home Department reported to Count Yamagata, Minister of Home Affairs, the discovery of the kakke bacillus. In this he said that he found a short blunt-pointed bacillus in the cardiac muscle, liver, fats, kidneys, spinal cord, etc., and that he had

confirmed it by cultures. He utilized rats, rabbits, and monkeys for experiments. He published a second report afterwards, but after all it came to nothing.

On the 18th of the same month, Kenji Osawa, member of the Hygienic Society, in a long speech attacked my opinion as regards the choice of diet, especially of barley and beans, but about a year afterwards he told me that he had been wrong.

Similar attacks appeared in speeches and writings continuously up to the end of 1887, but I kept complete silence, as I wanted to reply by practical results. Luckily for me, the later results showed gradual improvement, that is, forty-one cases of kakke in 1885, only three in 1886, and none in 1887, and enabled me to retaliate by their publication.

About this time, Moriharu Miura of the Imperial University published a new opinion regarding the cause of kakke. He attributed it to the poisons of blue fishes, because he said that the symptoms simulated mineral poisoning, as by lead, and that since the improved system of diet in 1884 the fish supply had gradually decreased, especially from 1885 to 1889. He made practical applications of his idea to some regiments, but as we have heard nothing about it since, it must be accounted as a non-success.

On August 24, 1885, I made a proposal to change bread and biscuit for a proportionate amount of barley and rice which had been supplied since March of that year, because I recognized its necessity owing to the great difficulty in making bread experienced during rough weather even in time of peace. In November of that year my proposal was taken up and its application was at once ordered so as to make the sailors accustomed to their use.

Experiments on Dogs. — Finally, besides arranging and investigating as described, I had thought of experimenting on dogs, and in September, 1884, commenced my experiments. The results obtained were as follows:

First Experiment.—I took six dogs at the beginning of September, 1884, and separated them into two groups, A and B, and brought them up, giving to each differently combined food materials. The dogs in group A received rice and vegetables. They all gained in weight, but all died. In group B. the dogs received beef in addition to rice and vegetables. They gained less in weight than the dogs in group A, but all lived and were healthy. The increase in weight of three dogs of A group, when compared with the weight first taken, showed an increase of 2,905 momme, but all the dogs died. The total increase in weight of the three dogs of B group, when compared with the weight first taken, was only 1,430 momme, but all were still alive and healthy. Therefore, it is not always reasonable to take the increase of bodily weight as a positive proof of health.

The above results are proofs of the difference in the physiological constitution of animal life produced by the consumption of different combinations of food. It was also shown by the quantity of feces passed, that the digestion and absorption are not the same in each dog, though the same combination of food is given to each. Further, the quantity of excrements of those dogs which took the food mixed with meat is less than that of the dogs which took no meat.

Second Experiment.—This experiment was commenced on September 1, 1885, and completed on November 30, 1886. At this time, as at first, six dogs were used and separated into two groups, A and B, and differently combined foods given to each group. The principal articles of food given to A group were rice and sweet potatoes, and that given to B. group consisted of boiled barley, beans (soja Hispidia) and sweet potatoes. The other articles of food given to each group were the same and the quantity of these articles was determined according to the weight of each dog. Two of the three dogs in group A died; those in B group all lived.

The result of the two experiments was that of those six dogs to which rice was given as the principal food, in spite of an increase in weight, all but one died before the expiration of the experiment. The increase in weight of six dogs to which barley, beef, and beans were given as their principal food, was not so conspicuous as in that of the other group, but every one of them was healthy and very active both mentally and bodily.

Therefore, although these experiments seem to be very crude, yet the results certainly prove that the variety of food consumed and its combination have direct influence upon the health of animal life.

It is not quite proper to conclude that the causes which affect the health and development of man will produce in some ways the same results as in dogs, but I have no doubt that the health of man is greatly influenced by the variety and combination of food consumed as well.

By the beginning of 1890, the reformed diet was crowned with a complete success, and not only kakke was wholly exterminated, but also the general diseases became greatly decreased.

In the same year the Imperial ordinance for reformed diet was issued, and thus my original object was obtained.

All through these years of hardships I tried to explain my purpose to others by comparing the food to gunpowder. I said that the former is the primary force of the human body as is the powder in the gun; so it is just as important to select the food suitable for sailors as the powder for guns and rifles.

In former times the food was supplied according to the monetary system without any regard for quality or quantity. Therefore, when the price of food articles was high they could not get sufficient nutrition for the maintenance of health, although they were able to get more when it was low. As a consequence, the distribution of food was unequal at times, and although the sailors could stand any hardship at one time, yet they could not at other times, owing to the want of food. Such a state of things is a serious danger for the country in time of need. The gunpowder is supplied with a definite quantity of the best quality without considering the amount of expense. This is what I wish to have in regard to the supply of food. By doing so we can preserve the equal supply of suitable food at all times, and also keep the officers and men in good health, so that they can bear hardships both in peace and war. In 1890, as the success of the reformed diet became positive, the particulars concerning the preventive measures taken for kakke were compiled into a book, and presented to the Minister of the Navy.

As the result of the reformed diet with the improvement of the Naval hygiene, during six years, from 1884 to 1889, the amount of expense saved from the waste amounted to 1,232,416½ yen. On October 16, 1890, I for the third time had the honor of audience of His Majesty the Emperor, and represented the following facts: (1) As I foretold on the occasion of the presentation to His Majesty in 1885, kakke had now been completely exterminated from the Imperial Navy. (2) The present condition of the health of the Imperial Navy and the economic influence of the improved diet were

due to the Naval expenditure. (3) The fear of the inability of the Naval officers and men for hardships in time of need had now gone. (4) The general tendency of the increase of kakke among students and others without any regard for profession had now vanished. (5) The appearance of kakke all over the country and its tendency to increase seemed to have its origin in the reformed land-tax of Meiji 6 (1873). Since that time the habit of eating rice as the chief food settled upon the remote districts, and, besides, owing to the general tendency throughout the country to raise mulberry leaves, the production of rice and other cereals markedly decreased. In consequence, the vegetable albuminates contained in food necessary for bodily nutrition decreased, while on the contrary, the amount of carbohydrates comparatively increased, thus causing the increase of the disease.

On thinking over my past experiences I cannot hesitate to declare that the present improved condition of the Imperial Japanese Naval hygiene was due to having had an able man at the head of the Navy, and also to the education of medical officers. Because, if we had not such a man at the head, new suggestions would not have been taken up, or if the medical officers were not thoroughly educated, they could not have succeeded in the task of the preventive measures. The success of the new system and the attaining of my long-cherished desire were accomplished owing to the late Count Jungi Kawamura, who was the Minister of the Navy when I was made the Chief Director of the Medical Bureau. When I first took up the official duty as the Director of the Medical Bureau, I told the Count that if he would give me full power to execute whatever I deemed necessary in order to keep up the health of the Naval officers and men so as to make them fit for any duty, I would never say a word against his plans in other branches (education, training, duties of officers and men). He then answered, "All right." So that whenever I wanted to try any new plan, he always supported me in carrying it out as long as circumstances allowed.

In order to maintain the health and efficiency of the men, I firmly believe it to be of permanent importance to have the following facts in constant observation: A careful selection of men at the time of enlistment and the maintenance of their health are absolutely essential to fulfill the purposes of the Army and Navy.

To fulfill these objects there must be an organization in which the medical officers and nurses must be properly educated so as to fit them for their duties, and the officers and men of other branches must be taught elementary physiology and hygiene. Accordingly, in Japan, elementary physiology and hygiene are taught to cadets and officers, in addition to the subjects special to themselves, at both the Naval College and the Academy. Petty officers and men are also instructed by medical officers attached to various departments.

The Medical Bureau of the Imperial Japanese Navy is constituted as follows:

I. The Medical Bureau is one of five departments of the Navy and has the following officers: Director, Surgeon-Admiral, 1; Surgeon-Captain, 1; members, surgeons, surgeon-lieutenant, and pharmacist, 4; clerks, 3.

The Bureau governs the following: (1) The medical administration, hygiene, pension, and physical examination of men to be enlisted. (2) Transactions concerning hospitals and materials for treatment. (3) Education of the medical officers and pharmacists.

II. *Education of Naval Medical Officers.*—In the medical school under the control of the director of Medical Bureau, the officers are taught advanced subjects. Not only that, but the newly-appointed officers and probational surgeons and pharmacists are instructed in subjects necessary for their future positions. Besides, the hygienic experiments for clothing, food, etc., are here conducted.

The medical school has the following officers: Dean, aide-de-camp, professors, and treasurer. The scholars are divided into three classes: (1) official; (2) special; (3) training.

The first class consists of officers selected by the Minister of the Navy.

The second class are selected by the Minister of the Navy from commander-surgeon and surgeon-lieutenants (served more than three years) wishing to pursue their studies further.

The third class contains the newly-appointed officers and probational surgeons and pharmacists.

A special class may be found from among medical officers and pharmacists according to the necessity.

The dean makes the rules concerning instructions, etc., according to the school regulations, and puts them into effect after getting an approval of the director of the Naval Medical Bureau.

At the end of every year, the results of examinations and investigations made at the school are fully considered by the dean, who has to forward them to the Director of the Medical Bureau with his remarks.

The dean presides over the meeting consisting of professors and teachers called to discuss the progress of the science and plans for future teaching, and he has to report its results to the Director of the Medical Bureau.

Again, the results of sanitary investigations on clothes, food, etc., are also reported to the Director.

The term of both "official" and "special" classes is one year. Of the "training" class, half a year for the newly-appointed officers, six months each in school and hospital, making up one year for the probational surgeons and pharmacists. A special teacher is nominated by the dean for the "special" class, in order to direct investigations, and at the end of the term each of the classes has to describe and report the results of the investigations made to the dean.

The members of the first and second classes live outside, but those of the third class in the school. Finally, when the Director of the Medical Bureau sees the necessity of forming a special class, he has to fix the number, subjects, and terms, and to represent them to the Minister of the Navy. The latter will then order the formation of the class.

The subjects for an official class are as follows:

(1) Naval Hygiene: Construction of ships, ventilation, drinking water, diet, disinfection, prevention of infectious diseases, etc., clothes.

(2) Geographical Diseases: Endemic and epidemic diseases of other countries, especially along the coast of each.

(3) Military Surgery: Varieties, characters, complications, treatment, etc., of the wounds occurring in sea and land battles.

(4) Military Medicine: Diagnosis, treatment, and practical clinical training.

(5) Physico-Chemical Examinations: Practical methods for examining food articles and others concerning sanitary investigations and clinical diagnosis.

(6) Bacteriology: Methods for bacteriological investigation, necessary for pathogenic bacteria.

(7) Pathological Anatomy: Pathology, both theoretical and practical.

Extra subjects: Foreign languages (English or German or French), practical study of surgical operations, practical surgical anatomy, ophthalmology, diseases of ear, nose, and throat, medical jurisprudence, dentistry, photography, medical electricity.

The members of the "special" class are allowed to pursue their studies in advanced subjects according to their wishes.

The subjects for the "training" class for the probational surgeons are:

(1) Naval Hygiene: General idea of ship construction and hygiene in special reference to the Navy.

(2) Geographical Diseases: General idea of endemic and epidemic diseases of different countries.

(3) Military Surgery: General pathology of gunshot wounds, first aid, conveyance of the wounded.

(4) Methods for examining food articles: Practice of physico-chemical investigation.

(5) Pathological Anatomy: General pathology, both theoretical and practical.

(6) Bacteriology: General bacteriology and methods for practical investigation.

(7) Clinical practice with patients, both medical and surgical.

(8) Foreign Language: (English conversation.)

Extra subjects: Regulation of the Navy.

The probational pharmacists are taught with the subjects necessary for their duties. The object of the special class is to teach certain special subjects in the shortest possible time.

The Regulations for the Education of Nurses.—The subjects are: Anatomy, physiology, pharmacy, bandaging, nursing, methods for the conveyance of patients. All the subjects except the last are taught in the Naval Hospital. Instruction in the last is given in the Naval Barrack. As bandaging and nursing are their most important duties, the nurses are especially instructed in these subjects.

Extra subjects are: Reading, penmanship, composition, arithmetic, gymnastics, care and use of firearms; naval nomenclature, names of the parts of ships and their belongings; rowing of Japanese and foreign boats; methods of transmitting commands; swimming, etc. The period of education occupies eight months.

Higher Education of Nurses.—The training schools for post-graduate instruction in nursing are established within Naval hospitals, and one director and several teachers are attached to each. They teach two different classes of nurses selected from different parts of the Navy. The terms begin on February 20 and on September 1, and end on July 20 and February 10 respectively every year.

The following are the subjects for two classes:

B Class:

1. Disinfection (20 lectures of an hour each.)

2. First aid (lectures and practices, 30 hours). Fainting, asphyxia, drowning, stranguary, inhalation of poisonous gas, poisoning, visceral hemorrhage, retention of urine, burns and scalds, chilblains, hemostatic methods, bites, etc.

3. Bandaging (lectures and practices, 30 hours); materials, making, sterilization, applications, plaster-of-Paris and splints, etc.

4. "Carrying the wounded" (lectures and practices, 20 hours); manual and mechanical conveyances.

5. Management of medical stores (lectures and practices, 5 hours).

6. Practical pharmacy at the dispensary.

7. Nursing in the wards.

The time for lectures and practice is 90 hours (5 hours every week.) The students receive instruction in the wards from the medical officers, in dispensary and medical stores from the pharmacists, and assist the regular members of each.

A Class:

1. General outline of infective diseases affecting the wounds (lectures, 15 hours).

2. Antiseptic dressing (lectures and practices, 25 hours); definition of antiseptic treatment, preparation and use of antiseptic bandages, preparation of sterilized water and applications, preparations for operation, disinfection of operating theater, patient, clothes, instruments, etc., important points during and after operation.

3. Aseptic treatment (lectures and practices, 10 hours); definition, preparation and application of aseptic bandages.

4. Management of Infectious Diseases (lectures, 25 hours); varieties, causes of each, nursing, examination of discharges.

5. Methods for examining the drinking water (qualitative analysis).

6. Pharmacy (practical) in the dispensary.

7. General nursing in the wards.

The hours for lectures and practice are 90 (5 hours every week). The students receive instructions in the wards and operating room from the medical officers and assist in the duties of the regular members of each.

Remarks:

The death rate in the Navy was, as is seen in the table following, 51 per cent., and that in the Army was 28 per cent., thus showing that the rate of instant death is much larger in the Navy. This is no doubt due to the more powerful projectiles used in the Navy causing much damage by their explosions.

All the wounded were treated aseptically. Operations were avoided as much as possible because we found that conservative surgery is most efficient.

In our Army and Navy also before the battle commences, we are in the habit of putting on new clothes after cleansing the body thoroughly as a matter of self-respect, and also this is useful as a preventive method against introduction of any septic matter from the outside when injured or wounded.

TABLES OF DEATHS AND CASUALTIES, WITH RESULTS, IN THE JAPAN-RUSSIAN WAR

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Present Out
Officers	307	159	14	134	132	....	1	1
Gun-room Officers.	93	51	4	38	37	1	....	..
Petty Officers	891	511	27	353	310	27	7	..
Men	2,333	1,139	68	1,126	1,010	74	42	..
Miscellaneous	65	31	4	29	28	....	.. 1	..
Total	3,689	1,892	117	1,680	1,526	102	51	1

Percentage of deaths, including secondary fatalities	54
Instant deaths	310
Returning to duty after wounded	90.8
Invalided	6
In Hospital	3

NUMBER OF DEATHS IN THE BATTLE OUTSIDE OF PORT ARTHUR, FEBRUARY 9, 1904.

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Present Out
Officers	16	2	1	13	13	....	....	..
Gun-room Officers	2	....	1	1	1	....	....	..
Petty Officers	11	1	1	9	9	....	..	..
Men	42	....	3	39	35	3	1	..
Miscellaneous	1	....	....	1	1	....	..	..
Total	72	3	6	63	59	3	1	..

TOTAL NUMBER OF DEATHS AND WOUNDED IN THE BATTLE IN THE YELLOW SEA ON THE 10th OF DECEMBER, 1904.

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Out
Officers	28	12	1	15	15	....	....	..
Gun-room Officers	6	3	.. .	3	3	...	....	..
Petty Officers	64	29	3	32	28	4	....	..
Men	127	21	2	98	80	18	....	..
Miscellaneous	7	..	....	7	7	..	....	..
Total	232	65	6	155	133	22	....	..

NUMBER OF DEATHS AND WOUNDED IN THE BATTLE OF THE SOUTH-EASTERN COAST OF COREA.

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Out
Officers	9	1	1	7	7	....	....	..
Gun-room Officers	2	...	....	2	2	....	....	..
Petty Officers	35	13	3	19	18	1	....	..
Men	83	22	6	55	49	4	2	..
Miscellaneous	4	....	....	4	4	....	....	..
Total	133	36	10	87	80	5	2	..

NUMBER OF DEATHS AND WOUNDED OF THE MEN FOR THE SIEGE OF PORT ARTHUR.

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Out
Officers	6	1	2	3	3	...	....	..
Gun-room Officers	8	3	1	4	4	...	....	..
Petty Officers	61	6	4	51	44	7	....	..
Men	268	20	20	228	205	22	1	..
Miscellaneous	....	....	...	...	...	....	....	..
Total	343	30	27	286	256	29	1	..

NUMBER OF DEATHS AND WOUNDED IN THE BATTLE OF THE JAPAN SEA, MAY 27, 1905.

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Out
Officers	40	5	2	42	40	....	1	1
Gun-room Officers	14	2	....	12	12	...	....	..
Petty Officers	158	34	3	121	112	2	8	..
Men	469	45	22	402	358	8	36	..
Miscellaneous	10	2	2	6	5	....	1	..
Total	700	88	29	583	527	10	45	1

NUMBER OF DEATHS AND WOUNDED IN THE PERIOD BETWEEN THE 9TH OF FEBRUARY, 1904, UP TO THE 13TH OF AUGUST, 1905, EXCLUDING THE BIG BATTLES.

Classification	Total No. of D'd & W'ded	Instant Death	Subsequent Death	W'ded	Cured R't'ing to Duty	Cured Invalided	Present In Hospital	Out
Officers	199	138	7	54	54	....	....	..
Gun-room Officers	61	43	2	16	15	1	....	..
Petty Officers	562	428	13	121	108	13	....	..
Men	1,350	1,031	15	304	283	19	2	..
Miscellaneous	43	30	2	11	11	....	....	..
Total	2,215	2,670	39	506	471	33	2	..

REMARKS ON BANTI'S DISEASE (SPLENOMEGALIA AND CIRRHOSIS OF THE LIVER).*

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In 1894 Banti[1] described four cases of splenomegalia, anemia, cirrhosis of the liver, and ascites, which ended fatally and came to an autopsy. From observations made on these and six other similar cases Banti described the clinical picture of the disease, which is at present universally known by his name. The essential part is a combination of splenomegalia, anemia, cirrhosis of the liver, and finally ascites. Although all these clinical manifestations were known, it was formerly customary to classify them according to the predominance of one or the other symptoms. It was Banti who first pointed out the relation of these various phenomena to each other.

*Read before the American Gastroenterological Association on June 4, 1906, at Boston, Mass.

According to Banti the disease has three stages: The preascitic or anemic, the intermediary, and the ascitic stage. Symptoms of the first stage are anemia and swelling of the spleen; increasing weakness, pallor of the mucous membranes, and dyspnea on exertion follow. Sometimes epistaxis occurs, or if there is severe anemia a transitory edema of the malleoli and an irregular intermittent fever result.

The blood shows diminution of the number of red blood corpuscles, a still more marked decrease in the amount of hemoglobin and poikilocytosis. The leucocytes are normal in every respect.

The anemia sometimes grows better, sometimes worse; it is amenable to rational treatment (arsenic, iron).

The swelling of the spleen develops slowly. When the patient consults a physician it has usually reached such dimensions that it represents a large tumor. It retains in general the rounded shape of the spleen, but is of a firmer consistency, and usually projects into the left abdominal cavity to a point somewhere between the navel and iliac crest. Banti thinks there is no doubt at all that the swelling of the spleen precedes the anemia. Liver and kidneys are normal. The first or preascitic stage lasts from one to four and a half years.

Now comes the second or transitional stage. At this time the urine is passed less frequently, and dyspeptic symptoms, like diarrhea, hemorrhoids, etc., arise. This stage is relatively short and lasts only a few months.

The third or ascitic stage begins with distention of the abdomen and ascites slowly develops. The fluid is never absorbed. Even after puncture the fluid will reaccumulate again very soon. At this time a decrease in size of the liver dullness can be demonstrated, the spleen remaining unchanged. The urine is diminished in quantity, concentrated, contains much urobilin, but no bile pigments, no albumin, and no sugar. The skin is of a somewhat darker hue and the conjunctiva somewhat icteric.

The signs of anemia slowly increase, and slight rises of temperature in the evening occur. The patient becomes progressively weaker, and unless some other disease carries him off he dies from exhaustion.

The last stage is relatively short, lasting generally only a few months, at the highest seven to eight.

Pathologically a large amount of connective tissue proliferation was found in the spleen (fibroadenia) and in the liver (cirrhosis).

The well-known Italian investigator assumes that the spleen is the original seat of the disease, poisonous substances developing in it and entering the blood, in this way causing anemia and hyperplasia of the connective tissue in the liver. In some cases Banti has had the spleen extirpated with happy results.

Senator[2] later made the same subject the object of his investigation. He also classes the cases of splenic pseudoleukemia in the group of Banti's disease. Etiologically, Senator believes that autointoxications play a large rôle, because in many of these cases the splenic enlargement was preceded by diarrhea.

Regarding the symptoms Senator lays stress upon the hemorrhagic diathesis, which often occurs here, as evidenced by hemorrhages of the stomach and bowel, these being frequently the first sign to arouse the attention of the patient. According to Senator the ascites is sometimes absorbed. The blood is characterized by oligocythemia, oligochromemia (possibly leukopenia).

Curschmann[3] and Maixner[4] then pointed out the

intimate connection between cirrhosis of the liver and profuse and sometimes fatal gastric and intestinal hemorrhages. In Curschmann's case the spleen was considerably enlarged, felt hard, was not sensitive to pressure, and projected beyond the border of the ribs by about four fingers' width. The liver was somewhat small, but plainly cirrhotic.

Curschmann explains the hemorrhages by the fact that in cirrhosis of the liver collateral communications between the portal system and the system of the vena cava occur (thus causing varices in the stomach, esophagus, and pharynx).

Maixner has observed seven cases in which hemorrhages from the intestinal tract were the first symptoms to appear during the course of the disease, and also frequently to recur. In all cases the hemorrhage was very severe; in some even the direct cause of death.

In all these cases the liver is considerably enlarged and reaches nearly a hand's width below the right margin of the ribs. The spleen is also considerably enlarged and of hard consistency. Ascites was present only a few times. At autopsy there were no ulcers found in the stomach, only dilated veins in the cardiac part and in the esophagus. Maixner explains these symptoms as follows: "Early and frequent hemorrhages from the intestinal tract, large splenic tumor, light and slow development of ascites, and continuous diarrhea can be easily explained by the presence of a collateral circulation, accompanied by venous stasis. Since this circulation is one of the most perfect, we can see why the fatal course of liver cirrhosis can be so long protracted."

The resemblance of these cases of Maixner with those of Banti is evident. The gastric and intestinal hemorrhages have been counted as one of the symptoms of Banti's disease by Senator long before Curschmann and Maixner.

Von Aldor[5] lately described four analogous cases of "hemorrhagic cirrhosis of the liver" and discussed the question, whether these cases are not identical with Banti's disease.

Under this heading also falls an important article by William Osler, who, two years before Senator, Curschmann, and Maixner, pointed out the occurrence of severe gastric and intestinal hemorrhages in splenomegalia. Osler[6] calls his paper "Splenic Anemia," and emphasizes the fact that in these cases there was no cirrhosis of the liver. In perusing the histories, however, we often find that the liver is enlarged and projects several fingers' width beyond the free border of the ribs. The blood shows moderate diminution of the erythrocytes, absolute diminution of hemoglobin, and frequently leukopenia. Osler's cases resemble clinically those of Maixner and Aldor to such a degree that they will have to be placed under the same category.

Preble[7] about the same time describes four cases of hemorrhage from the stomach and bowels in cirrhosis of the liver, and tabulates fifty-six other cases. In 80 per cent. of these cases esophageal varices were found. In his own four cases splenic tumor, cirrhosis of the liver, and ascites were present. The cirrhosis of the liver may also take the form of the hypertrophic variety.

After having given some of the principal publications on Banti's disease and some of its varieties, I would like to relate a few of my own cases.

Not including the cases of pure splenomegalia (the splenic form of Hodgkin's disease) I saw in the last twelve years eighteen cases, which belong clinically to the category of Banti's disease. I have tabulated them and placed them in three groups:

1. Pure form: splenomegalia, anemia, cirrhosis of liver, ascites.

2. Hemorrhagic form, showing, in addition to the symptoms just enumerated, gastric and intestinal hemorrhages.

3. Splenomegalia, enlargement of the liver, anemia, sometimes associated with grave gastric symptoms.

TABLE OF CASES OF BANTI'S DISEASE TREATED BY EINHORN DURING 1894–1906

GROUP I.

No.	Name.	Age.	Date.	Principal Symptoms.	Course.
1	Carl B	15	1897	Marked enlargement of spleen and liver, anemia, ascites.	Death by exhaustion.
2	Abraham S.....	45	1900	Anemia, splenic tumor, ascites, dyspnea.	Fatal.
3	John P	50	1902	Enlargement of spleen and liver, ascites and anemia.	Fatal
4	Jos. S.....	38	1903	Anemia, enlargement of spleen and liver, little ascites, achylia.	Unknown
5	John H C.	32	1905	Very large spleen, large liver, anemia.	Unknown.
6	Andreas K	30	1905	Very severe anemia, enlargement of spleen and liver, ascites; pain in bones, marked anorexia.	Fatal.
7	Jul C J	43	1906	Very large splenic tumor; liver markedly enlarged, ascites, dyspnea, later icterus.	Unfavorable, still under treatment.

GROUP II.

8	Nicholas W	40	1896	Great enlargement of spleen and liver, profuse gastric hemorrhages, recurring thrice in four months.	Fatal.
9	Caroline A.....	52	1906	Splenic tumor, liver considerably enlarged, severe anemia, frequent profuse intestinal hemorrhages, ascites.	Fatal.
10	Arthur, J M...	48	1905	Large splenic tumor, large indurated liver; gastric hemorrhages, ascites.	Fatal.

GROUP III.

11	William R.....	58	1894	Large liver, slightly enlarged spleen, anemia, hyperchlorhydria.	Cured.
12	Anton T. ..	33	1898	Liver and spleen enlarged, attacks of chills and fever without icterus.	Was improved for three years, then fatal.
13	Louis M. D.....	42	1903	Spleen and liver enlarged, severe anemia.	Cured.
14	Michael M. L .	48	1904	Spleen and liver enlarged, anemia and slight leucocytosis, dilatation of stomach with beginning pyloric stenosis.ischochymia, hyperchlorhydria.	Much improved.
15	Beni. L.....	34	1905	Spleen and liver enlarged, anemia	Unknown.
16	August F.....	32	1905	Liver and spleen enlarged, ascites, anemia, hyperchlorhydria.	Improved.
17	Elmer E.....	49	1902 and 1906	Liver and spleen are enlarged and hard, partially lobulated; ascites, dyspnea.	Improved 10 years.
18	Peter H K ...	50	1906	Liver and spleen enlarged, anorexia, occasionally vomiting.	Cured.

In most of my cases the liver was considerably enlarged and usually much firmer than normal; changes in the contour of the liver in the shape of round nodules were twice found. Regarding the ascites of the first group my opinion coincides with that of Banti, in so far as the ascites shows absolutely no tendency to absorption, and that it will return quickly when artificially removed. The hemorrhagic form is especially important, as it is often mistaken for ulcer of the stomach.

I would like here to sketch Case M. M., forty-eight years old, a politician, has always lived well, occasionally drank too much, when with friends, although not a habitul drinker; was attacked in October, 1905, while in the best of health by severe hemorrhage from the stomach. The amount of blood vomited was supposed to have been at least a quart, and an undetermined quantity was lost in the bowel. A week later he felt so well that, contrary to the advice of his physician, he attended a banquet with his friends. He ate everything, but drank very moderately. When he came home, toward midnight, he again vomited more than a quart of blood and became unconscious. The next day the hemorrhage returned.

I first saw the patient two days after the last hemorrhage. On examination a large splenic tumor was found; the liver was much enlarged and firm; a considerable amount of ascites was also present. The patient was then somewhat comatose. Three days later he died after another hemorrhage.

Another case, also belonging to the hemorrhagic variety, is the following one:

Mrs. Q., about fifty-two years old, has been suffering for about six months with diarrhea and repeated intestinal hemorrhages. She lost in weight and became visibly weaker. When I saw the patient I found the following conditions: A pale, well-nourished woman; chest organs normal; abdomen distended; splenic tumor of large size, reaching to a finger's width below the navel, with a smooth surface, and of firm consistency. The liver is considerably enlarged, projecting three to four fingers' width beyond the free margin of the ribs. Ascites can easily be detected; abdomen not sensitive to pressure; rectum and vagina show normal conditions; urine is highly concentrated and contains neither albumin nor sugar. The blood shows severe oligocythemia, also oligochromhemia, but no leucocytosis. The patient died a few days later from another profuse intestinal hemorrhage. An autopsy was not performed, but the case seems clinically to belong to this group; for in carcinoma of the intestines we meet with the enlargement of the liver, but not with the tumor of the spleen of such size.

The third group is especially noteworthy, because a cure may be effected. In this class of cases the enlargement of the liver exceeds that of the spleen, and frequently severe dyspeptic symptoms are found.

It will not be out of place to sketch a few of these cases a little more minutely.

Case I.—May, 1896. William A. R., fifty-eight years old, has never drank much and has never had any venereal disease or malaria. About a year ago the patient began to complain of lack of appetite, frequent eructations, constipation, and at times a feeling of oppression in the chest. The patient lost a little in weight and became much weaker. Soon dyspnea developed, particularly when walking, and occasionally also after dinner even without any exertion. Physical examination showed: Liver much enlarged and somewhat hard; contour regular; reaches down to the umbilicus. Spleen can also be palpated at least a hand's width below the left costal margin. It feels rather hard and has a smooth surface. The stomach contents show a high degree of hyperacidity; otherwise nothing abnormal. In the blood slight anemia without leucocytosis or plasmodia was found. The urine was free from albumin and sugar. Patient was treated with alkalies without, however, feeling much better. The condition remained about the same for nearly a year, except that the weakness increased. In May, 1897, the patient was compelled to remain abed, suffering from rise in temperature toward evening. He received 0.5 gm. of quinine twice daily, with 0.2 gm. of methylen blue once daily. Later he was treated with iodide of soda and iron. His condition improved slowly, and in November, 1897, patient could be considered cured. The enlargement of the liver and spleen had disappeared, and the strength of the patient had returned. Patient has been enjoying uninterrupted health ever since and is still alive.

Case II.—October 21, 1903. Louis M. D., forty-two years old, had always been well until about ten months ago, when he began to suffer from digestive disturbances. The appetite disappeared, and right after dinner usually a feeling of fullness developed. Severe pain was absent, vomiting occurred only rarely, whereas a marked degree of constipation was present. Patient lost steadily in weight, about forty pounds in all, and became exceedingly weak. He has never been drinking to excess and never had syphilis. On examination the liver is found to be considerably enlarged. The dullness commenced at about the fifth rib and reached to the umbilicus. The organ feels harder than normal and has a few superficial irregularities. Spleen also is much enlarged and projects about three fingers' widths beyond the costal margin. Its surface is smooth and its consistency harder than normal. The mucous membranes look pale and anemic. The stomach is not dilated and its contents show the presence of free HCl. in nearly normal quantity. The thoracic organs as well as the urine are normal. The diagnosis of hypertrophic cirrhosis of the liver is made. The patient received iodide of sodium and iron, was put upon a liberal diet, and his bowels were regulated. He improved from day to day, became stronger, and gained in weight. At the end of November, 1903, the boundary of the liver was found to be nearly normal; the spleen also was considerably smaller; it could only be palpated on very deep inspiration. He had gained forty-five pounds, and remained perfectly well.

Case III.—December 15, 1903. H. N. B., thirty-eight years old, was suffering for the last three years from frequent pains in the stomach, occurring usually from one to two hours after meals. These were relieved by the taking of food. Since the beginning of 1903 patient complained of fullness after meals and increasing weakness and lost forty pounds in weight. He has never been a heavy drinker, nor has he had syphilis or malaria. Patient is of a somewhat brown but not icteric complexion and looks emaciated and anemic. Examination reveals a marked enlargement of the liver. The dullness commences a finger's width below the right mammilla and reaches down to the navel. The liver is easily palpated, being somewhat harder than normal, but has a perfectly smooth surface. The spleen is only slightly enlarged; the dullness goes to a finger's breadth above the margin of the ribs. In the thorax there is nothing abnormal. Urine is free from sugar or albumin and contains no bile pigment. The blood shows a diminution of the erythrocytes without any marked leucocytosis. The stomach contents revealed marked hyperchlorhydria without any signs of ischochymia. The patient is given alkalies and iodide of sodium with iron. He is also liberally fed. Under this treatment the condition of the patient improved markedly, and two or three months later he was perfectly well. Spleen and liver are apparently perfectly normal, and there is complete euphoria. Two and a half years later I again saw patient. He told me that during that time he had remained perfectly well and had gained fifty pounds.

Case IV.—June, 1904. Michael L., forty-eight

years old, has been suffering for ten years from severe pains in the stomach, accompanied by frequent vomiting. Food seems to have alleviated the pain. For the last three years he has been using the stomach pump and frequently washes out his stomach in order to ease the pain. In spite of good care and apparently rational treatment, the patient kept losing flesh (twenty pounds) during the last year and became so weak that he had to spend the greater part of his time abed. Fever had evidently not been present, but intense paroxysms of pain in the upper abdominal region occurred, so that injections of morphine were required in order to afford relief. At present he is complaining of pains over the entire abdomen, of pyrosis, constipation, and great weakness. Status presens; thoracic organs are normal. Inspection of the abdomen reveals a protuberance of the upper part, especially toward the right, also peristaltic waves, running from left to right, occupying the region of the left side of the abdomen from the costal margin to the pubis. Clapotage is easily produced in this region. On palpation enlargement of liver and spleen is found. The first organ reaches to a finger's width above the navel, has a rather smooth surface, and feels harder than normal. The hepatic dullness begins a finger's width below the mammilla. The spleen can be felt as a smooth, oval tumor ten centimeters below the free edge of the ribs. It feels rather hard. The stomach is now emptied with the stomach tube and thoroughly irrigated. The contents show food remnants from the previous day, and also a high acidity (100), much HCl, and very many microorganisms (especially yeast cells). The diagnosis was made of a combination of Banti's disease with benign ischochymia caused by a beginning pyloric stenosis. Patient was then treated according to the usual methods for his stomach affection, and he improved from day to day. In September all signs of ischochymia and dilatation of the stomach had disappeared and hyperchlorhydria alone remained. He had also gained in weight in the meantime. The condition of the liver and spleen was the same. He was, therefore, advised to have his epigastrium treated two to three times weekly with *x*-rays. In January, 1905, the spleen could still be palpated, but it did not project beyond the free margin of the ribs. The liver had also become smaller, projecting two fingers below the ribs. He was given iron and atoxyl. I saw him for the last time in January, 1906. He attended to his business in 1905 and enjoyed good health. Since June, 1904, when I first saw him, he had gained fifty pounds and was free from subjective complaints.

In closely scrutinizing the cases of Group III, just sketched, the following may be said: We have to deal here with an affection in which the liver is considerably enlarged (often twice the normal size). Its surface is usually smooth, but not always. It sometimes has slight irregularities. Its consistency is usually somewhat harder than normal. The spleen is also enlarged; it does not, however, reach the size of that in Groups I and II. Severe stomach affections are frequently found (R, B, L) and seem to influence the course of the disease. A perfect cure frequently results.

It is difficult to classify these cases in any clinically well-defined group. We have to deal here with a hypertrophic process of the liver, which will also become normal under favorable conditions. The whole picture seems to resemble hypertrophic cirrhosis of the liver, if not identical with it. Fatty liver could hardly cause similar symptoms, especially the increase of consistency, which is usually not found in this affection. As we have to deal here besides with an enlargement of the spleen and anemia, I have placed these cases at present under the category of cirrhosis of the liver and splenomebalia, or Banti's disease.

Regarding treatment we must consider with which group and stage of the disease we have to deal. In Group I and II during the preascitic stage extirpation of the spleen might be considered, as first recommended by Banti. If operation is not decided upon, then *x*-ray treatment would be desirable. I have had good results with this treatment in one case of Banti's disease (Michael L.) and in two cases of pseudoleukemia splenica. The splenic tumor was reduced in these cases to such a degree that it could be felt only with difficulty underneath the ribs. This treatment was accompanied by improvement of the other symptoms.

Gastric hemorrhages will have to be treated according to the accepted rules; we may be slightly bolder in giving food in these cases.

In the ascitic stage of the first two groups the prospects of improvement are very bad. The fluid quickly reaccumulates after puncture, and thus the patients gradually approach their death.

It is altogether different in Group III. As mentioned above, we often meet with cures, not only in the beginning of the disease, but also when the symptoms have advanced.

It is essential to combat the stomach symptoms and to put the patient on a strengthening diet. I have also used sodium iodide in conjunction with iron, and sometimes arsenic, and usually obtained good results.

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A BRIEF RESUME OF THE WORLD'S RECENT CANCER RESEARCH.*

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PROBABLY no disease has received more scientific investigation within recent years than cancer. Thousands of individual observers and a number of special commissions, both in Europe and America, have been devoting their entire time to the solution of some of the complicated problems concerning

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cancer. The work has largely been one of negation. Certain general facts relative to the occurrence of cancer have come to be accepted by investigators both in Europe and America. Some of the theories concerning the etiology of cancer have been practically disproved, while others are still under consideration, the final verdict being *sub judice*. Many of the agents which seemingly gave promise of great usefulness have been proven inefficient, while others have been more nearly restricted to their legitimate field, which, in most cases, is a very limited one.

In a study of the recent literature concerning the various phases of this interesting subject one is fairly overwhelmed by the mass of material, statistical and otherwise. It would be impossible in a paper of this scope to do more than epitomize this world-wide research.

Occurrence.—Cancer occurs with the same essential characteristics throughout the vertebrate creation. It is found in all domestic animals, in wild animals, and even in fish, and in its development accommodates itself to the life-span of the individual animal. It occurs in animals with increasing frequency as age advances, whether the duration of life be long or short. In man malignant new growths are found in considerable numbers after 45 to 50 years; in the horse, dog, and cat after 9 years; in the trout after from 5 to 7 years; and in the mouse after 2 years. The maximum incidence, whether in man or animals, coincides with the decline of reproductive activity, and yet castration seems to have no influence in the time of occurrence of the disease. The fact that both carcinoma and sarcoma are found throughout the vertebrate creation, increasing in the same manner as life advances, suggests their similarity.

Cancer is comparatively rare in hot countries, especially in those whose inhabitants subsist largely on vegetable diet. With certain exceptions it seems to be prevalent where animal diet is mostly consumed. In this connection it may be stated with reference to the influence of diet on the development of cancer that there is a variety of conflicting testimony. From those who believe it traceable to the uric-acid diathesis, advocating a vegetable diet as a preventive, to Senn, who finds that the Eskimos, living on an almost exclusive raw meat diet, are absolutely immune from tumors of all kinds, there is a variety of opinions. In Borneo cancer is apparently unknown; in certain parts of China, Burmah, and India it is very rare, in Persia it is seldom seen, and in Africa it is much less common than in many parts of Europe. In Germany it is less frequent than in England or Sweden.

Black races are remarkably immune from cancer, yellow races are more prone to it, while the white races are the most liable.

It occurs when the tissues are undergoing retrograde metamorphosis, hence it is largely a disease of senility. Both carcinoma and sarcoma occur with increasing frequency as age advances.

It seems to be the consensus of opinion, among both European and American investigators, that cancer is undoubtedly on the increase, a fact not entirely accounted for by the present better diagnostic methods and the more accurate keeping of records. In the United States cancer is distinctly on the increase, census reports showing that from 1850 to 1890 the mortality from cancer increased from 9 to 33.5 to every 100,000 population. In England and Wales returns from the Registrar-General show the following annual ratio of deaths from cancer to each million of persons: In 1864, 385; in 1895, 755, and in 1900, 828. In France the mortality from cancer and other tumors has risen from an average of 840 per million (urban population only), 1887 and 1890, to 1,050 per million in 1898. In Germany, Switzerland, Austria, Norway, Sweden, Holland, Denmark, and various other European states, cancer has been shown to be increasing. In Ceylon it has increased markedly in the last decade.

The principal increase in cancer involves the alimentary tract. In 1900 there were 9,000 deaths from cancer of the stomach in the United States. According to Dowd, cancer of the stomach, as compared to other regions, comprises 31 per cent., and according to Mayo 30 per cent. of all cancers involve the stomach.

Certain observers are giving particular attention to the geographical distribution of cancer. They have found that in certain areas, notably in England and the United States, cancer is so prevalent, and the mortality rate so high, that such districts have come to be known popularly as "cancer belts." As a rule such areas are low-lying, damp, and generally watered by streams which periodically overflow their banks. High-lying, dry districts are relatively, though not entirely, immune. Lyon reports a cancer district in the towns of Plainfield and Edmeston, New York, comprising an area of 2.5 by 1.5 miles of rough, hilly farm country. An interesting illustration of a "cancer district" in a hilly, rough, well drained section is given by Lyon in the Monthly Bulletin of the New York State Board of Health. This area comprises seventy-five square miles in Brookfield township, Madison County, New York. Of the several villages in the township Brookfield furnishes the highest death-rate from cancer. Its population in 1900 was 485. Careful investigation among the inhabitants and the local physici ns revealed 84 deaths from cancer in the fifteen years from 1886 to 1900. Of the "cancer houses" in the village nine had a history of two or more cases.

Women are attacked by cancer much earlier and more frequently than men, and the disease develops in persons of either sex at an earlier age than formerly.

Etiology.—Various opinions exist concerning the causation of cancer, yet nothing definite has been established regarding the *essential* cause. The Harvard Commission discredits the parasitic theory, while the report of the Imperial Cancer Research Fund destroys all known theories of the origin of cancer, formulating, however, no new theory. Considerable work has been done at the Gratwick Pathological Laboratory by Gaylord and others which has attracted more or less attention from both the medical and the public press, but so far nothing of practical value has been established. It has been shown that mice can be infected by cancer from like species, cancer developing in a certain proportion of cases. On the other hand, some of the mice have seemed to spontaneously recover, at least for the time being. Much of the recent experimental work points to the *cell* as the essential element in the development of cancer, some investigators holding that external agencies probably play little or no part in determining the incidence of the disease.

Bashford, of the Imperial Cancer Research Fund, says, "Our observations on animals show that malignant growths are always local in origin, and of themselves produce no evident constitutional disturbance whatever. These facts are in full accord with accumulated experience in man." The systemic conditions which result from cancer are due to the breaking down of the tissues and the formation of toxins, which ultimately gives the characteristic cachexia.

In addition to race, climate, topography, age, and sex, mentioned heretofore, the following factors seem to be more or less involved as predisposing causes of cancer:

Heredity.—According to von Bergmann, heredity plays a relatively unimportant part, though there is no doubt that certain families are predisposed to cancer. Others, after careful study, state that heredity is of no importance in the development of cancer. Mr. Roger Williams, after a careful analysis of the family histories of more than 700 cases of benign and malignant tumors, concludes that a history of heredity indicates little more than a predisposition. Mr. Butlin believes heredity influences cancer, but finds, from the cases examined, that there were scarcely any cases in which the history of cancer was divided between the families of both sides.

Cicatrices.—Scar tissue, when subjected to continuous irritation or marked injury, is, in many cases, prone to undergo a malignant change. This is found to be true in the female breast, where the glandular tissue has been largely supplanted by connective tissue of suppurative mastitis; also in the cervix uteri, where scar tissue results from cervical tears. Craig failed upon investigation to find a single case of carcinoma occurring in a successfully repaired cervix, except where trauma had subsequently occurred, and A. Lapthorn Smith says that uterine cancer has almost disappeared from his clinic and from the practice of his friends for the simple reason that women are not allowed to go round with a cervix full of scar tissue.

Benign epithelial growths.—Warts, moles, and other growths on the surface of the body when undergoing irritation not uncommonly break down and take on malignant characteristics. Very little irritation is sometimes necessary to transform a papilloma into a beginning epithelioma.

Chronic inflammatory conditions, by lowering the vitality of the tissues involved, render such areas more liable to malignant change.

Traumatism.—According to von Bergmann, a single contusion of the breast may be the predisposing cause in the development of cancer, especially when the trauma occurs at a time when the woman is liable to carcinoma. The influence of trauma is emphasized especially in the cases of neoplasms that develop in regions having no special predisposition to the formation of tumors.

Zeigler found that of 170 cancers of the breast there was a history of trauma in 37 cases, or 22 per cent. Snow found a history of trauma in 11.5 per cent. of 9,600 cases of carcinoma of the breast. As in cases of maternal impressions, these and similar statistics are likely to be misleading. In the case of a child which is "marked" a direct leading question will almost invariably call forth statements concerning some supposedly causative occurrence; so, in cancer, if it is suggested to the patient the history of injury may be easily obtained. We must carefully weigh all phases of the case in a purely judicial manner when tracing the causal factors. Law suits involving traumatism as the cause of cancer are becoming more and more frequent, and it is of the utmost importance that we keep concise and clear histories in such cases, not being influenced entirely by the patient's estimate of the matter. An injury may result in the development of cancer, but as a rule it produces evident changes in the area affected at the time of the receipt of the traumatism and some evidence of these changes remains until the appearance of the cancer. In this connection I quote the testimony of the late Dr. George R. Fowler in the case of Martin *versus* the Brooklyn Heights Railroad Company, May, 1905: "My conclusion from my personal experience, and that is supported by the experience of and writings and teachings of the best men in the profession, is that traumatism does not bear the relation to the production of cancer of the breast that it was formerly supposed to."

A careful study of statistics, according to Williams, disproves the opinion that traumata are efficient causes of cancer. This, in the judgment of the writer, is a field for further careful study.

Senn believes that all tumors originate from an original matrix of embryonic cells of congenital or post-natal origin, and that in the absence of such an essential histological basis no exciting cause or combination of exciting causes will result in the production of cancer.

Chronic Irritation.—It is undoubtedly true that repeated or chronic irritation, as from the edge of a corset pressing upon the breast, or the irritation of eye-glasses over the nose, many times causes malignant disease.

Malnutrition.—It is generally conceded that lowered vitality, other things being equal, seems conducive to the development of cancer. Mental depression also plays some part, according to some investigators, being particularly noticeable as a causative factor in women.

Treatment.—In the matter of treatment recent investigations have been largely a work of elimination. The field of usefulness of the various non-operative methods has been markedly narrowed, there being practically nothing left but operative procedure, except for a limited number of primary and secondary growths which may be cured by other means.

The field of the *x*-ray in the treatment of cancer, so popular a short time ago, has gradually narrowed during the last year. The consensus of opinion now is that it has absolutely no curative value in deep-seated cancer. It *may* cure localized superficial cancer, and again it has produced it, and may hasten metastasis. Its field in the treatment of malignant growths would seem to be in superficial secondary recurrences, where it has undoubtedly been of great service in many instances; also in lessening suffering in some inoperable cases.

Serum treatment has been fraught with disappointments. Doyen's serum has proved to be absolutely of no real value in the treatment of malignant disease. The Committee of the French Academy of Medicine, specially appointed to investigate this serum, reports that in not a single case treated with it was there any evidence of cure or even of amelioration. This report is confirmed by a special committee sent from London to Paris to make a careful study of this method of treatment. This would seem to put an end to the claims for Doyen's serum.

Radium is frequently referred to in the literature, but in the hands of the Committee of the French Academy of Medicine it has fared little better than Doyen's serum. Abbe is the only prominent reviewer of the subject of cancer who appears to think well of it. Schücking reports some favorable results with radium, confessing, however, that radium rays cannot yet be said to possess a curative action in so-called inoperable cases of cancer.

Adrenalin in large doses, according to the report of the Imperial Cancer Research Fund, by setting up inflammatory reaction in the supporting structure of the tumor, causing bleeding into the tumor, may carry off enough of the necrotic material and cancer

cells to produce a retrograde change in the tumor and an apparent cure. Radium is said to act in the same manner.

Coley's method of injecting the mixed toxins of the bacillus of erysipelas and the bacillus prodigiosus seems, from a careful search of the literature, to have been practically abandoned except by Coley himself. In some rare forms of sarcoma it is reported by a number of observers to have caused retrograde changes, but no law of control has been established. In a recent article Coley again urges the claims of his fluid as a remedial agent and reports some remarkable cases.

Oöphorectomy has caused the retrogression and disappearance of a number of mammary tumors, always, however, ultimately followed by death from the disease.

Caustics and pastes may cure some cases of superficial growths, but with pain and with longer time, as a rule, than is necessary with the operative treatment.

Surgical treatment has, largely by process of elimination, been established on a firmer basis than ever before. It is the sheet-anchor in our work to-day, and, as a rule, the only bridge across which safety lies. This may be epitomized under the following heads:

(1) Removal of inflammatory conditions, cicatrices and benign tumors before they have undergone any malignancy, thus paradoxically curing the cancer before it exists.

(2) Removal of cancer when present, with a margin of healthy tissue, and the extirpation of lymphatic vessels and lymphatic nodes in close relation to the disease.

(3) Free exicision, even running risks, if necessary, in order to accomplish complete eradication of the disease.

(4) In so-called "inoperable" cases, where the disease cannot be entirely eradicated, removal of as much as possible, shutting off the blood supply to that which cannot be removed, so that the growth may be slower, is certainly a rational procedure. In inoperable cases of cancer of the uterus good results have been reported from Chrobak's clinic by cauterizing with fuming nitric acid or with Paquelin cautery, after removal with a sharp spoon of as much as possible of the diseased tissue.

(5) In those cases which are truly inoperable, where the entire cancer cannot be removed, or even a portion of it, in many cases great comfort may be afforded by cutting nerves and relieving secondary conditions which cause so much suffering.

14 Gramercy Park

HABITUAL CONSTIPATION, VIEWED FROM THE STANDPOINT OF MODERN EVOLUTION OF DIETETICS, IS A PHYSIOLOGICAL PHENOMENON.*

By C. D. SPIVAK, M.D.

DENVER, COL.

The conception of regular and irregular movements of the bowels is vague and indefinite as far as the physician is concerned. A movement of the bowels once a week, or even at longer intervals, has been called regular by many of our patients, and one or two movements daily are often designated as constipation, if these movements leave the patient in an unsatisfied and ever-longing state of mind. We have no clinical methods by means of which the physician could make a diagnosis of constipation, and every intestine, therefore, is a law unto itself. The physician, when assuming the responsibility of treating a case of constipation, is guided by the statement of his patient; he accepts the definition of the word as applied by the sufferer to his particular case. Indeed, the physician has no choice in the matter and must accept the statement of the patient; there is not another disease in the whole range of medicine where malingering could be practised with as little danger of detection. One who practises rational medicine will endeavor to find out the etiological factors which may give rise to this condition, and, if found, treat the constipation by removing the cause. If, however, after a thorough examination of the patient, no pathological condition is found which would justify the existence of constipation as a symptom, we simply prefix the term "constipation" by the word "habitual," and thereby raise it to the dignity of a disease *sui generis*. Having cleared our conscience from the responsibility of looking for a cause, we start out with our energetic treatment. We change the mixed diet to one containing a large percentage of residue of indigestible substances; we increase the quantity and frequency of meals; we use ether spray over the abdomen; we stretch the sphincter, we insufflate, inflate, dilate, and plug the rectum; in short, we exercise our ingenuity to irritate the bowel, dietetically, thermically, mechanically, electrically, etc., so as to increase its peristaltic movements, and induce premature delivery of the fecal matter. Here, too, we encounter another difficulty. Since the number of evacuations within any given time does not constitute a criterion of normal or abnormal, the question which each physician has to solve is, How often must the bowels move to justify the statement that the patient is cured? All physicians endeavor to secure one movement every day, and anything less than that is not considered a successful cure. Why should one movement a day be considered normal? Why not two movements in one day, or one movement in two days? By what are we to be guided? As in the case of diagnosis, the physician must be guided by the patient; so it is with the treatment. The physician is at the mercy of the patient. He it is who is to decide when he is cured or not; and upon his word depends the success or failure of the treatment. Is it not possible that the many failures to cure constipation which every physician has to his discredit, are due to the fact that these patients would do well with a movement of the bowels once in two or three days?

Eminent clinicians and investigators like Leichtenstern, Ewald, Dunin, Meinert, Glenard, and others have each brought forward an ingenious theory as to the causation of habitual constipation, all of which remain mere conjectures. Nothnagel makes the broad statement that habitual constipation is "a primary and independent form of disease, and must be considered as such." But this problem will not be solved until we have learned more about feces. It is a sign of the times that within the last two years have appeared two editions of Schmidt's and Strassburger's work on feces and more than a dozen theses and monographs on the subject.

At a recent meeting of the Naturforscher Gesellschaft Ad. Schmidt declared that all the theories as to the causation of constipation hitherto proposed are untenable, and that the only rational explanation of this obscure condition is to be found in the theory of intensive utilization (*intensive ausnutzung*) by the bowel of the nutritive ingredients contained in

*Read at the ninth annual meeting of the American Gastroenterological Association, held at Boston, June 4 and 5, 1906

the food, which explains the small quantity and dry quality of the fecal matter found in the majority of cases of true habitual constipation.

Now, the question arises, is intensive utilization a pathological or physiological phenomenon? For some time I have been conducting a series of observations on patients suffering from habitual constipation, with a view of ascertaining the quantity of food ingested and the corresponding quantity of fecal matter expelled.

The factors that enter into these studies are so many and varied that it will require many more observations to be recorded and a very careful sifting of the facts and figures, before they can be tabulated and made available. The greatest difficulty which one meets from the outset is the absence of a standard as to either quantity or quality of fecal matter in the healthy individual, so that there is nothing to compare with or be guided by. Then, each ingredient of food produces a certain quantity and quality of fecal matter. This is an important study which has been attempted only lately by Lynch, and which will yield valuable results in the future. Lastly, each healthy man possesses a certain capacity for the amount of food ingested and absorbed, as well as for fecal matter produced, the relation between the two not being a constant number. Many persons eat large meals and produce scant movements of the bowels, and vice versa.

The observation on the rectopath is made more difficult because he or she whose mind and soul dwell in the nether regions does not "take much stock" in the scientific side of the question, and therefore, with the exception of a few intelligent persons, does not permit one to observe the course of constipation under normal conditions. They insist on immediate change of diet, the use of laxatives, enemas, all of which create an abnormally abnormal condition.

But, notwithstanding the fact that I am not ready to present a finished report of my labors, I have already gathered enough data to form in my mind a composite picture of the sufferers from habitual constipation and to assert that in patients thus afflicted, especially males who work hard, enjoy a good appetite, sleep well, and who keep up their bodily weight, the constipation is due to physiological causes, *i.e.* the food they ingest is thoroughly utilized, little residue is left, and it is natural for such patients to have a movement of the bowels at intervals of two, three, or more days. Such a condition cannot be regarded as pathological. To prescribe drugs, a laxative diet, or the various other irritants means eventually to induce a catarrhal condition of the bowels.

The question naturally arises, if the small quantity of fecal matter and the long intervals between the movements is a physiological condition, it should not give rise to any inconvenience or discomfort and we would not expect such a normal man to seek the services of a physician.

I will explain this by a hypothetical case: A man who is accustomed to have a movement of the bowels, say once a day immediately after breakfast, is called away immediately after breakfast, or must go without breakfast. What happens? The nervous mechanism of the intestine was wound up by the clock-work habit for twenty-four hours. Something interfered. The bowel is irritable for an hour or longer, the man feel uncomfortable, and gradually the irritation subsides, and the discomfort it occasions disappears. If the subject does not pay any attention to it—if he does not consider himself in duty bound to have a movement of the bowel once a day and every day of his life, he will go to sleep and wait for the next morning until after breakfast, when a regular movement, probably larger in quantity will be the result. If, however, instead of letting nature take care of itself, the man will come home in the evening and begin to make efforts and strain to have a bowel movement, or will take a laxative, insert a suppository, etc., he will at once create an abnormal condition. If he induces artificially a movement of the bowels, say late at night, he will in all probability miss his regular movement the following morning, notwithstanding the extra straining he may do. Again he may induce a movement in the evening and thus start up constipation. In this case the little discomfort which the patient experienced at the beginning and which every healthy body is and should be able to throw off without leaving any trace behind, has started on its way a case of habitual constipation; the patient interpreted the temporary discomfort he experienced as the outset of a grave malady, "constipation," to ward against which he immediately instituted energetic prophylactic measures.

This goes to illustrate that we can cultivate two kinds of habits, and especially in relation to movements of the bowels. One habit is that the bowels should move at regular intervals, and the other is the habit of breaking that habit whenever necessary. As Sir James Paget (Studies of Old Case Books) said: "These half involuntary organs (rectum and bladder) are good servants but very bad masters; the more they are indulged the more peremptory they become; . . . they should be educated to subserviency; . . . any one with a resolute will may easily teach them."

This sort of constipation is simply due to a loss of faith in one's self and in the elasticity and pliancy in the functions of the body, to a fear that a slight disturbance from the usual habits may lead to profound pathological changes. It is a fear of constipation—a phobia.

There are others who think they suffer from constipation simply because they have made up their minds that they will not be cured unless they have one movement daily.

Humanity is undergoing profound changes in regard to dietetics. We may consider the last century as a transition period. At no time in the past have the civilized nations consumed so much meat, eggs, milk, and especially sugar as during the last century, and the use of the latter article is growing from year to year. The number of predigested, prepared, dextrinized foods is increasing daily. The high efficiency of the dental art and the greater stress laid upon the proper mastication of food all these factors produce certain changes in the human organism, which manifest themselves by a reduced quantity of the fecal matter and less frequent need for emptying the bowels.

From the above consideration, I wish to make the following deductions:

Habitual constipation in a good many cases is due to a mistaken diagnosis. The patient makes the diagnosis himself based upon his sensation only. Once the diagnosis of constipation is made, and then corroborated by the physician, the diagnosis becomes an etiological factor.

The tendency of civilized life in general and of modern dietetics in particular is toward the production of lesser quantities of fecal matter and less frequent intervals of evacuation.

There is no doubt that the habit of regularity is beneficent, but no matter what one's philosophy is regarding free will, it is right that men should resolve that they will not allow every unusual sensation to become a source of morbid concentration.

The treatment of habitual constipation should be directed more toward rectifying the errors of the mind than those of the body; the fear engendered in the patient of an impending calamity should be allayed by impressing upon him the simple, physiological truth that certain foods are better absorbed than others, that it is not imperative for the preservation of good health to have a movement of the bowels daily, nor is the small quantity indicative of disease.

ACROPARESTHESIA: A STUDY OF TWO HUNDRED CASES.

By W. W. LESEM, M.A., M.D.,

NEW YORK.

Acroparesthesia may be defined as an affection of the peripheral nerves characterized by burning, pricking, pins-and-needles, numb, crawling, itching, or breaking sensations distributed usually over the extremities involving not infrequently, however, the head, the face, the chest, the back, or the abdomen, rarely the viscera. Among 200 cases seen at the clinic during the past seven years, 189 or 94½ per cent., occurred in women. Acroparesthesia is a disease of adult life, the majority of the cases occurring between the ages of thirty and forty. Of our series of cases, less than 16 per cent. developed before thirty, while in only two instances had the affection appeared before twenty; in 12 per cent. the patients developed the disease after fifty. Heredity does not seem to play an important etiological rôle, although frequently the disease has occurred in more than one member of the same family. The preponderance of Jewish patients in the dispensary renders it impossible to determine whether, as in diabetes, the Hebrew race is particularly prone to this affection or not.

Syphilis, rheumatism, the excessive use of alcohol, tea, or coffee, do not appear to act as important etiological factors in producing the disease. In nearly 20 per cent. of the cases occurring in women the disease was associated with puerperal, menstrual, or climateric disorders; the condition of these patients under appropriate local treatment was rapidly ameliorated.

Acroparesthesia is an affection formerly thought to be dependent largely upon constant exposure of the patient's hands to water. Inasmuch as practically none of our patients has been engaged to any great extent in washing, we may readily dismiss this erroneous idea from our consideration, even though the condition of some of our patients apparently was aggravated by exposure to damp weather. Acroporesthesia has been practically disregarded in neurological literature save by a few investigators, among whom are Bernhard, Dana, and Collins. Inasmuch as over 200 cases have occurred at Dr. Collins' Neurological Clinic at the Post-Graduate Hospital during the past five or six years, in other words, inasmuch as nearly 3 per cent. of all our patients under observation have manifested this disease, a more careful consideration of the etiology of this affection may not be inappropriate.

In 33 per cent. of our cases a history of obstinate constipation of long duration was obtained, while of the remaining 67 per cent., 20 per cent. complained of chronic dyspepsia. In 53 per cent., therefore, we have found some chronic disturbance of the gastrointestinal tract. Examination of the urine of forty patients suffering from this disease elicited the fact that in about 50 per cent. of the urines examined a positive reaction for indican was obtained. Finally, it has been Dr. Cox's and my own experience that the vast majority of all the patients suffering from acroparesthesia have been grossly obese and of sallow complexion, as if suffering from some autointoxication. Faulty metabolism, faulty elimination, and autointoxication, therefore, may be considered as the most important exciting causes of acroparesthesia.

There is, however, another important disorder at the basis of this disease, viz., disturbances of the circulatory system. Vasomotor paresis, arteriosclerosis, or excessive alkalinity of the blood was present in more than 33 per cent. of all our cases. These disorders were manifested symptomatically by hot and cold flashes, profuse perspiration, and coldness of the extremities. In cases of arteriosclerosis seen at Dr. Collins' clinic in many instances acroparesthesia was the only symptom for which the patient presented himself for treatment. Examination of the blood of a series of twenty patients suffering from acroparesthesia elicited a range of alkalinity of from 1.8 to 2.6 per cent., the average being 2.4 per cent. In the hemalkalinometer test 2 per cent. is considered normal.

From the above we see that circulatory and gastrointestinal disturbances appear to account for the vast majority of our cases; menstrual and puerperal disorders occurred in 12 per cent., while occupations such as tailoring and constant immersion of the hands in water occurred as an etiological factor in 1 per cent. In 9 per cent. of all the cases no ascertainable cause could be elicited.

The symptoms vary with the intensity of the disease. Some patients complain merely of transient pins-and-needles sensations in the fingers, the hands, the arms, the toes, the feet, or the legs, or in all of these. In others the disease is characterized by burning and pricking sensations in the extremities and in the back. In 33 per cent. of all cases tingling and numbness predominated. In 8 per cent. the chest was the seat of the disease, while in 4 per cent. the affection manifested itself primarily in the head or the face, involving later the extremities and the trunk. These last-named cases are usually the most aggravated. In the more severe forms of acroparesthesia the pain is so intense as to render the patient's life miserable; sleep is impossible, walking painful, and the use of the hands attended with excruciating agony. By far the most severe form is the visceral type. Here the disease manifests itself with dull cramping pains over the precordium, the stomach, or the intestines, involving later the extremities and the trunk. In the severer types of acroparesthesia hot and cold flashes, dull or boring frontal headache, choking sensations, nausea, gaseous eructations, palpitation of the heart, coldness of the extremities, and mental depression frequently manifest themselves.

In the mild forms of acroparesthesia no physical signs are present. In the more severe forms we meet with areas of tenderness over the vertebral borders of the scapulæ, tenderness beneath the clavicles and over the superficial nerves of the extremities. The deep nerves are not involved. Diminution of the tactile sense of the hands, of the fingers, and of the feet is of frequent occurrence. In but few instances is there any noticeable tremor present. When the head or the face is involved, the tenderness of these parts usually is most exquisite. Only in the severer types are the deep reflexes exaggerated.

Vasomotor paresis accompanies the majority of all well-developed cases. The blood-pressure as determined by the Riva-Rocci apparatus is not increased save in those cases which have arteriosclе-

rosis as their etiological basis. Seven per cent. of all cases seen presented a more or less marked degree of anemia.

The disease runs either a short course or becomes chronic and progressively worse. The types most amenable to treatment are those dependent upon puerperal and climacteric disorders, and upon auto-intoxication. The majority of cases seen by us have lasted for many years, beginning with mild pins-and-needles and pricking sensations, gradually increasing in severity and rendering the life of the patient miserable. Not infrequently neuralgia and multiple neuritis develop in the severer forms. The routine treatment of acroparesthesia in the clinic consists in the administration of 10-grain doses of calomel every fifth night, followed by a purge in the morning, or the daily use of cascara as a substitute. Three times a week the patient receives an application of the static spray. The medication in vogue consists of the so-called black mixture:

℞. Sodi. brom..... ℥ss.
Pepsin ..... gr. xv.
Carb. ligni..... ℥iss.
Olei menthæ viridis..... gr. iii
Glycerin ..... ℥iii
Aquæ .....ad. ℥ii
Sig. Teaspoonful three times a day.

In but few instances has this method of procedure either ameliorated the suffering or shortened the duration of the disease. By far the most satisfactory results have been obtained by the use of increasing doses of strychnine combined with 15-grain doses of sodium bromide three times a day.

Case I.—Mild type of acroparesthesia. J. W., woman, married, aged 40. Family history negative. Personal history throws no light upon her present ailment. She has had no children or miscarriages. She says she was always well until a few months ago, when she experienced peculiar sensations in the arms and the legs. At times these sensations were pricking in character, at times needle-like. She has never suffered from headache, palpitation of the heart, or gaseous eructations. Since the onset of her present trouble she has never suffered any severe or acute pain. Her menopause occurred one year ago. This is a case of acroparesthesia with the menopause as an etiological basis.

Case II.—Mild type. D. R., woman, single, aged 20, cigarette maker. Family history negative. Patient was always well until four years ago, when she experienced needle-like sensations in both legs; these pains did not extend beyond the knees. She does not suffer from headache, palpitation, pain in the back or in the arms. Menstruation regular. Sleeps well. No pulse fullness. There is increased tenderness over the peripheral nerves of the legs. Otherwise the physical examination is negative. Examination of the urine showed a decided reaction for indican. This patient has been for two years under observation and has grown progressively worse.

Case III.—L. I., woman, married, aged 36. The patient says she has always had more or less abdominal paresthesia, accompanied by cramps in the stomach. At the present time she comes complaining of pulling, drawing pain in the right arm and the foot. This pain is frequently burning in character, at times crawling in nature, and when crawling is most severe. The pain is more or less constant. The arms and hands are also involved. At times these pains shift from one part of the body to another and then the pain is less intense, but whenever it becomes localized it is most excruciating. Frequently she experiences sticking and burning sensations in the fingers. On examination there is marked tenderness over the vertebral borders of the scapulæ; some tenderness beneath the clavicles, and some slight tenderness over the nerve trunks of the legs. Examination of the urine showed it to contain indican.

Case IV.—J. R., woman, married, aged 36. Patient was always well until one month ago, when the present trouble began. She has had six children; no miscarriages. For the past month she has had drawing pains in the chest, the legs, and the arms. She also suffers from severe headaches radiating to the top of the head which, together with the sensations previously enumerated, prevent her from sleeping.

Case V.—H. B., woman, married, aged 54. She had rheumatism 12 and 4 years ago. Three years ago she experienced pins-and-needles sensations involving the top of head, the shoulders, the arms, the back, and the legs. The pains were most severe in the feet, the back of the legs, and the hands and fingers. Usually the pains begin in the afternoon, reaching the height of their intensity at night, and disappear in the morning. The condition is aggravated by damp weather. Owing to the intensity of her suffering she is unable to sleep at night. Bowels regular. Appetite poor. Urine contains indican.

Case VI.—H. A., single, woman, aged 34. Two years ago the patient experienced itching, crawling, pricking, and tingling sensations in different parts of her body. These gradually became worse, and during the past year general symptoms manifested themselves, viz., intense excitement with quick, shallow breathing, tense muscles, aching of every nerve when engaged in conversation or writing. Her nerves appear to quiver and the diaphragm feels like a tense drum. She has crying spells and slight attacks of temper which she is unable to control or check. Flushings of the face and roaring or ringing in the ears are frequently present. Her hands and feet are cold and clammy. At times she experiences a general tired-out feeling, her will-power and ambition alone enabling her to pursue her work. At times she experiences blurring of the visual fields and great difficulty in concentrating her mind for any length of time upon any one subject. She has palpitation of the heart, especially at night, and poor circulation characterized by coldness of the extremities and chills. Frequently in the morning the patient experiences a heavy, dragging feeling about the heart, accompanied by a sensation of pressure. During her menstrual period she likewise experiences sharp pains over the heart. The gastric symptoms are acidity, gaseous eructations, bloating, gnawing sensations over the epigastrium, and loss of appetite.

290 West One Hundred and Thirty-Seventh Street

REPORT OF TWO CASES OF VARICOSE VEINS SUCCESSFULLY TREATED WITH THE X-RAY.

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Though I have had free access to the books, pamphlets, and card index of the Army Medical Museum, my own rather extensive library, and other sources, I have been unable to find any reference to the treatment of varicose veins by means of the Röntgen rays, and, so far as I am aware, the use of this therapeutical measure for the relief of the trouble is entirely unique. I was induced to take up the treatment by noticing the un-

*Read before the Medical Society of the District of Columbia, June 6, 1906

expected results in a case of eczema and varicose ulcer on the leg, and from reading a number of cases of "*Wine Mark*" that had been successfully treated by irradiation.

The results I have obtained have been most successful, and therefore I consider them well worth reporting.

Case I.—Mrs. E., forty-five years of age, eczema of both legs, complicated with varicose veins and an ulceration the size of a silver dollar on the right leg. After several months' treatment with local applications, bandages, etc., the eczema was cured; the ulcer, treated by application of pure carbolic acid and iodoform dressing, was reduced about one half in size, but even after weeks of the most vigorous treatment of the ulcer, it could not be further healed over or contracted. I began treatment with the *x*-ray March 30, 1906; medium tube; distance, eight inches; time, five minutes; every other day till April 12 (six irradiations), when the patient complained of a severe burning sensation. There was much inflammation of the skin extending over the whole surface of the leg, and the ulcer was angry looking. I stopped the applications for four days, when, the inflammation subsiding, I again applied the rays. The next day the part was found still more inflamed, and crusted over; but during the course of the following five days without *x*-ray treatment the dermatitis gradually subsided, and had entirely disappeared by the end of the week. The excessive desquamation of the skin had then disappeared and the ulcer had ceased to discharge, looking glazed and healthy and reduced to the size of a ten-cent piece. During all this time, much to my surprise, the varicose veins were growing smaller and smaller, till on May 20 they had entirely disappeared. The ulcer was completely healed over and covered with smooth, scar tissue, and there was no sign of the eczema. I neglected to say the bunch of knotted veins, to which I have referred, was situated just below and partially around the ulcer, and there were a few small enlarged veins elsewhere scattered over the surface of the leg.

Case II.—Mr. R., fifty years of age, referred to me by Dr. Lloyd Magruder, treated and relieved of a severe papular eczema of the arms and legs. On the calf of the right leg was a large accumulation of varicose veins, about the size of half an orange, two or three inches in diameter, extending an inch or so above the surface. I began the treatment with the *x*-ray on March 31, 1906, with a medium tube, one inch spark; distance twelve inches; time, ten minutes; irradiation continued twice a week till May 7 (ten applications), when the tumor was noticed to be considerably reduced in size. Since the above date the treatment has been carried out every other day, very gradually reducing the time and distanec of the tube. At this date, June 4, the same tube being used, distance five inches, time of exposure fifteen minutes, though there has been only a slight reaction of the tissues, the mass of knotted veins—in fact the whole tumor—is reduced fully one half in size, and even the bluish discoloration of the cuticle is fading away. This result is particularly remarkable from the fact that it was obtained without producing any great reaction of the tissues. Theoretically considered, this would seem to be impossible, yet we here appear to have a practical demonstration, however we may explain it.

I am sorry not to be able to present the two cases to the society, but Mr. R. declares he will be glad to bear me out in regard to the truth of the statements as above reported. It would seem difficult, if not impossible, to explain such results of treatment by means of the Röntgen rays, yet it is no more so than our attempts to demonstrate the favorable results obtained in treating certain diseases by the administration of drugs.

The day of epiricisin in the use of this remedy has passed, and, as Dr. Pusey has said, "it's use is much less empirical than the use of quinine, mercury, and arsenic. The first case reported, in which there was such a severe reaction of the tissues, might be explained on the same theory as the explanation given for the favorable results obtained in cases of nævus vascularis reported by different writers, particularly in the case of Dr. Jutassy, in which there was a 'wine mark' extending over half the face and the mucous membrane of the mouth and nose. In this case, after setting up violent reaction, when the epidermis was renewed, it was of normal color, and eighteen months afterwards there had been no relapse." The author attributes this result "to the action on the blood-vessels, which were successively contracted, inflamed, and obliterated."

It would seem to be more difficult to explain the favorable results obtained in the second case—that of Mr. R.—for, as I have said, there was only a slight dermatitis produced. There is no question but that the rays cause contraction and atrophy of the tissue, that congestion is diminished, and that tissues of low vitality easily break down; the contraction of the muscular coats of the vessels causes a diminished blood supply, and, according to Snow, "the vibratory influence of the rays restores tone to the muscular coats of the arterioles, and at the same time induces a more active local metabolism." The favorable results obtained in such cases might also be partially explained by the fact that the ray has some inherent property of its own, that is peculiar to itself, independent of either light or electricity, on the hypothesis that all normal tissue has its ultimate particles, its corpuscles or electrons in proper relationship to each other, and that any change in this arrangement will bring about abnormality, or, in other words, a pathological state, and that the rays have the power of restoring these particles to their normal condition and relationship to each other. This explanation may at first seem far fetched, but as we become more familiar with the theories that have been advanced from time to time, to explain the ultimate division of all matter, we cease to wonder at any new hypothesis that may be suggested. When we consider the behavior and the relationship of the corpuscles or ions to each other, particles too minute to measure, yet so numerous that hundreds of thousands of them are contained in a mere atom, traveling at the rate of a million miles a minute, our only wonder is that the severe shocks, trials, and tribulations, to which these cells are subjected, should only cause disease, we marvel why the frail body itself is not soon completely disintegrated.

Postoperative Retention of Urine is treated as follows by Anspach: If retention of urine is present after operation, catheterization of [illegible] is performed and the catheter inserted into the distended bladder, and as soon as the urine begins to flow the catheter [illegible] c.c. of a 25 per cent solution of boroglyceride is injected into the bladder. The catheter is then withdrawn. Urine is usually voided [illegible] after the procedure, and in very many cases no further difficulty is experienced.—*University of Pennsylvania Medical Bulletin.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE MORTALITY OF GALL-BLADDER OPERATIONS.

IT is often remarked that statistics are unreliable and can be employed to prove either side of a contention, and yet it may also be said that the interest in statistical studies is quite general, and particularly if they are compiled by some well-known man, they cannot fail to excite interest. We venture to say that a review, for example, of fifteen hundred operations on the gall-bladder and bile passages, done by two men within a limited period of years, will meet with the compliment of extensive quotation. In the space of fifteen years, the brothers Mayo (*Annals of Surgery*, August, 1906) have themselves performed the number of operations referred to, and as the work has been done under nearly identical conditions, their results must necessarily be of value in certain directions.

Mortality, permanence of cure, and disability arising from the operation itself are the three most important considerations in the surgical treatment of any disease, and the Mayos' investigations have been conducted with the view of elucidating the truth in regard to these essentials. The operative mortality, to begin with, was 4.43 per cent., including deaths from all causes. Cholecystostomies numbered 845, with a mortality of 2.13 per cent., and the writers consider that from the standpoint of mortality, this is the safest operation for the average case. The objection that gallstones may reform in the gall-bladder does not seem to worry these operators very much, as they claim to have seen this occur only once in their series of fifteen hundred cases. Contrary to the opinion held by some, the Mayos do not think it wise to remove a functionating gall-bladder unless there is a direct indication present. If a cholangitis exists, the gall-bladder affords a ready means of drainage, especially in common-duct cases, for these often require a secondary operation. When there is future contraction and obstruction of the common duct, the organ also constitutes a safe guide to the deeper structures. The permanent results were almost uniformly good after this operation and the disability brief.

Among the 319 cholecystectomies the mortality was 3.13 per cent. Although this operation has an increasing field, its greater risk constitutes, according to the writers, a valid excuse for not using it to replace cholecystostomy. When the gall-bladder is easy of access and the disease is confined to this organ, cholecystectomy may be regarded as the operation of preference, even when the simpler operation would have answered the purpose; but when the patient is obese and the organ adherent, the operation at once becomes more dangerous and difficult. The cure in these cases is, of course, absolute when the disease has been confined to the gall-bladder and the operative disability was slight.

Common-duct cases, numbering 207, were accompanied by the highest mortality, as might be expected, the death rate varying, depending on the type of the disease, from 2 to 34 per cent. An interesting complication in connection with this class of operation is involvement of the pancreas, and in eighty-six out of the total number of the cases, this organ was involved to an appreciable extent, but the writers believe that unless the inflammation is obstructive, it has no decided influence on the prognosis of the individual case. In summing up the causes of the sixty-six deaths, it will be found that 15 per cent. were accidental and could not be prevented. The largest number were due to cessation of liver function, usually the result of infection, and next came exhaustion due to chronic cholemia.

The lesson to be drawn from these statistics is that which has also been found to be true in other conditions. The great mortality which attended the early operation for appendicitis could not be ascribed to the operation, but rather to the fact that it was not carried out until the disease had gone beyond the appendix. Mayo rightly concludes that in gall-stone disease we must operate early, before the process extends beyond the gall-bladder, when the mortality is considerably less than 2 per cent., even with the deaths from accidental causes included. When the stone has passed into the common duct, the disease is no longer localized, but there is the added danger of hepatic infection and cholemia, and the possibility of malignant disease.

BERIBERI OR ALCOHOLIC NEURITIS?

THE considerable number of cases of beriberi which have been reported since our advent in the Far East has furnished a source of anxiety to the medical authorities of both the army and the navy; for it has been found that Americans are apparently not immune to a disease which at first was believed to attack only the native population, and numerous instances are recorded in which officers and enlisted men stationed in our Eastern possessions have become the victims of this malady. The disease is essentially a neuritis, and as it varies greatly in its individual features and is therefore by no means a uniform complaint, the exact diagnosis is apparently surrounded with some difficulties. It has become an unfortunate habit with the laity, and to some extent among medical men, to include within the designation of some new or "popular" disease, many cases which on closer scrutiny fail to meet the necessary specifications. One is impressed with this fact upon reading an article by J. S. Taylor in a recent number of the *Journal of the Association of Military Surgeons* (June, 1906), in which the writer claims as the result of an experience gained by several years' residence in Eastern countries, where beriberi is endemic, that many instances of nerve affection attributed to this disease are cases of multiple neu-

ritis due to a variety of other causes, among which alcohol is probably the most frequent.

The germ of beriberi, if there be one, has no doubt been assumed to be the etiological factor in many cases of neuritis occurring in persons residing in those countries where the disease prevails. The mistake may have been an honest one, for the symptoms are often identical, but in other cases convenience has probably dictated the diagnosis, particularly in individuals in whom another cause would be more unpleasant and less heroic. The fact should be borne in mind that beriberi is apparently absolutely dependent upon hygienic conditions and is favored by unsanitary surroundings. Alcoholic neuritis, on the other hand, is entirely independent of these factors. Taylor's experience has shown, moreover, that in the army the majority of the so-called cases of beriberi were among the officers, who made no pretense to total abstinence, and those of the enlisted men who were affected were invariably hard drinkers. Cold, exposure, and exhausting conditions may bring on a neuritis, and not every case wrongly called beriberi is necessarily alcoholic, but these are instances of neuritis pure and simple and dependent only remotely on the local conditions or on climate in the sense that true beriberi is. Officers who acquired what in the writer's opinion was alcoholic neuritis, belonged to all grades and performed the most varied duties under the most dissimilar circumstances, the only constant feature in every instance being that the victim indulged in alcohol in some measure; and this indulgence was probably in excess of the narrow limits of safety which are demanded by the tropical climate, for the baleful influence of the latter in lowering the tone and vigor of the system, while perhaps calling for the stimulus of a moderate amount of alcohol, no doubt increases the harm of consuming alcoholic beverages to excess.

As the writer truly states, there is a glamour of romance thrown about an individual who has been compelled to reside in the tropics and thus become the victim of what may in charity be called an attack of beriberi. Less sympathy would, no doubt, be extended if it were known and admitted that the true cause of the disturbance was the cup that cheers, and the recovered subject of an attack would not point with pride to the horrors which he had gone through in the path of duty. It has long been maintained that the abuse of alcohol in the tropics constitutes a peculiar menace to the health of those who may be compelled to reside there, and here we have apparently another bit of confirmatory evidence in support of this contention. It is to be hoped that Dr. Taylor's suggestions will prompt a closer investigation of these cases which are conveniently labeled by a name which fails to account for their true origin, even if the truth has a less agreeable aspect.

TUBERCULOSIS.

In the Section on State Medicine of the British Medical Association, at the meeting just held in Toronto, a long and more or less interesting discussion was held on Tuberculosis. Medical men from all parts of the world expressed their views on various phases of the malady, and among those men were many from this country.

The paper of Dr. George Homan of St. Louis was particularly suggestive. The paper was on the influence of domestic methods and household dust on tuberculosis. The point was emphasized that hotels, clubs, and offices are a source of danger to the community in that their internal arrangements frequently render them to a great extent fertile breeding grounds of tuberculosis. The ornamental and luxurious fittings and the heavy carpets and hangings which are generally features of such establishments are convenient harbors for dust, and the so-called cleaning which takes place daily as a rule simply stirs up the dust and does not get rid of it. The author of the paper gave some examples which had come under his immediate notice of the careless manner in which clubs are managed. The lavish expenditure of money in making clubs, hotels, and offices appear luxurious is more than money wasted; it is money put to a bad purpose. Many private houses are in the same category, but reforms in this respect should be initiated in those establishments to which the public has ready access and which certainly should not be the ones to sacrifice health to outward show. All such establishments should be subject to sanitary inspection.

Dr. Probst, Secretary of the Ohio State Board of Health, read a paper entitled "Some Doubtful Phases of the Tuberculosis Question." The whole trend of the paper was interrogative. It was asked if cattle are known to be tuberculous whether these should be slaughtered on a wholesale scale; whether persons suffering from pulmonary tuberculosis should be isolated; how sweat-shops should be effectively dealt with; to what degree the use of alcohol predisposes individuals to the contraction of consumption; should preventive measures be in the direction of destroying the seeds of the disease, or should they attempt so to build up the system by good food and by effective sanitary measures as to render the afflicted person able to withstand the attacks of the malady? Of course we should all like to know the true answers to these very pertinent questions, but it is idle to hope for universal agreement, perhaps, upon any one of these points. The majority of physicians, however, are of one mind in regard to the broad principles concerning pulmonary tuberculosis. It is now a matter of common knowledge that environment plays the most important rôle in originating and in spreading the disease. Heredity may induce a susceptibility in the individual to the malady and may provide a suitable breeding place for its germs; such predisposition is latent and becomes a factor in the production of the disease only when other conditions are favorable. The person born of tuberculous parents who lives a healthy, rational life stands a better chance, on the whole, of reaching a green old age than does he whose parents and ancestors had no tuberculous taint, but who has lived in a way calculated seriously to injure his health. The latter has, by lowering his vital powers, laid himself open to the attacks of the disease. As a means of prevention as well as of cure, the writer urged that every one, whether tuberculous or not, should whenever possible sleep out of doors.

As to the part played by milk and alcohol in the production of pulmonary tuberculosis, opinions at the meeting differed widely. While some held that both milk and alcohol were potent factors in disseminating the tubercle germs among the human race and in preparing the soil for their reception, others were of the opinion that these substances might almost be termed negligible quantities so far as the production of pulmonary tuberculosis was concerned. One speaker stated as his opinion that milk and alcohol were only in a small degree responsible, but took the view that indolent breathing as a cause of consumption was universally overlooked. All present were unanimous in the belief that educating the public was one of the best means of successfully solving the tuberculosis problem. This is undoubtedly true; indeed, it is actually too obvious to need emphasis.

A New Use for Babinski's Reflex.

The peculiar reflex phenomenon to which Babinski's name has been attached has often been noted in organic nervous diseases, especially when the pyramidal tracts are involved. The symptom has been described as a slow extension of the great toe when the sole of the foot is irritated, without any previous plantar flexion such as we find in the normal individual. Although it seems to be invariably present in children, it can only rarely be elicited in normal adult individuals. The reflex has been quite generally accepted as a diagnostic feature in lesions of the pyramidal tracts, and it has also been found in epilepsy, meningitis, and various comatose states, and, strangely enough, also after scopolamine injections, whether these were employed for their general sedative or their anesthetic effect. Although noted, there has apparently been no effort made to account for this phenomenon, and a recent contribution on this subject by Link (*Zeitschrift für klinische Medizin*, Vol. 59, Nos. 2, 3, and 4) should therefore prove of interest. This observer found the Babinski reflex present in 37 out of 43 patients to whom scopolamine had been administered, even when a dose as small as 0.0004 had been injected. Link believes that the phenomenon in question is due in these cases to a functional shutting out, as it were, of certain portions of the cerebral cortex. The appearance of the reflex is, therefore, a sign that the scopolamine has become effective, but it should not be regarded as an evidence that the narcosis thus induced is sufficiently deep to take away entirely the sense of pain. It seems, therefore, that although the practical application of Link's observations is limited, it may be of some value within certain bounds.

The Etiology of Paroxysmal Tachycardia.

Although this condition has long been recognized as a clinical entity, we are still very uncertain as to its etiology, and many speculative theories have been advanced to account for the phenomenon. When a lesion of the heart exists, it is but natural to assume that the latter is the cause of the symptom, but in many instances no deviation from the normal can be detected in this organ, either during life or at the time of the autopsy. A connection between this form of cardiac palpitation and some disturbance of the nervous system has been claimed to exist by a number of writers, and this view seems confirmed by the report of two cases by Reinhold (*Zeitschrift für klinische Medizin*, Vol. 59, Nos. 2, 3, and 4), in which it was possible to trace the relation of the tachycardia to a lesion of the central nervous system which involved the cardiac centers. In the one case the autopsy revealed the presence of a syphilitic basilar meningitis, with a localized arteritis of the vertebral and basilar arteries, which undoubtedly brought about circulatory disturbances in the medulla oblongata. In the other case there was present a tumor in the left cerebral hemisphere which probably served as a source of reflex irritation and affected the cardiac inhibitory centers in the bulbus. This report is of considerable interest, as it affords an apparent confirmation of a theory which has been expressed by a number of writers in the recent literature of the subject.

Sunday Risks.

We wonder if the officials whose duty it is to look after such things are aware of the criminal overcrowding every Sunday of the boats carrying pleasure seekers in the waters of New York. If they are not, it is because they are neglectful of their duty; if they are, they are even more culpable in not putting a stop to the abuse. On a recent Sunday evening, for example, one of the boats returning from down the bay was so packed with men, women, and babies on each of its three decks that it was absolutely impossible to move about, and where one was placed there he had to remain until the boat reached its pier. Had anything occurred to start a panic, nothing could have prevented a frightful loss of life, and had a fire started or a collision occurred, the *Slocum* disaster would have been as nothing in comparison. And this condition was doubtless the same in nearly every boat going to and from the beaches. Sunday is the day of fatalities—twelve young men and one child were drowned in New York on a recent Sunday, and seven more were killed by automobiles, bicycles, and runaway horses—but some day the twenty deaths will be multiplied by one hundred if the overcrowding of boats continues to be permitted. How to accommodate the hundreds of thousands of seekers after fresh air every pleasant Sunday is doubtless a problem, but if all cannot be transported without the fearful risks to which they are now exposed, some must be forced to stay at home or turn in other directions.

News of the Week.

Butchers and Bakers in Prussia.—The "jungle" has been found in England, France, Japan, and indeed all countries where a search has been made for it, and America, so far from being the worst or only sinner against packing-house hygiene, is now shown merely to have been the first to expose and correct the evil. One of the latest to investigate home conditions and to find them bad is Prussia. A dispatch from Berlin says that the Government Medical Department has issued a report on the sanitary condition of the Prussian bakeries and slaughter houses in which it is set forth that many of the butchering establishments were found to be in a very unclean condition. Some of them were situated in dark cellars, where cleanliness was impossible, and others had no facilities for the employees to wash themselves. The Government Inspectors found the conditions in the bakeries to be particularly objectionable. In one town boys kneaded the dough with their feet, and one bakery was found to be occupied by cats and hens. In another town a baker's oven served *ad in-*

terim as a goose pen. One baker admitted that his floor and vats were scrubbed only once a year.

Sanitation of Restaurants.—The Commissioner of Health of Chicago, Dr. Charles J. Whalen, in the weekly bulletin of the Health Department for August 18, says: "Of not less importance than rigid inspection at the slaughter house and in the market is the sanitation of the restaurant and the limitation of cold storage. There are no doubt many clean restaurant kitchens, but there are also a great many which have no suggestion of cleanliness or sanitation, and this is especially true in a large city like Chicago. With a view of bettering the sanitary conditions and protecting the people from consuming unwholesome food, the municipal authorities ought to license all places where food is cooked and consumed, and such an ordinance should be vigorously enforced by parties under whose jurisdiction it is placed. There is a wide field for improvement in Chicago along the lines herein suggested; yet this improvement ought to be easy; for when it becomes known that certain restaurants are worthy of public patronage because of their sanitary conditions, they will be likely to get the patronage, to the disadvantage of those which are not under such conditions."

Trachoma in Immigrants. — Four immigration inspectors sailed last week to determine the cause for the great increase of late in the number of cases of trachoma among immigrants. For sixty days prior to August 4 the Department of Commerce and Labor had assessed in fines on steamship companies $8,100 for bringing into this country diseased aliens, most of them suffering from trachoma. For every case proved against the steamship companies a fine of $100 is collected, and the companies are compelled to return the diseased immigrants to the port of embarkation. It is believed that the fault lies with the system of health inspection at the ports of departure.

The Microbe of Whooping Cough.—The correspondent of *The Sun* in Antwerp says that Dr. Gengou of the Belgian Royal Medical College reports the discovery of the whooping cough microbe. It is said to resemble Pfeiffer's influenza bacillus.

The Proposed Pollution of New York Harbor.—On Friday of last week a special meeting of the Board of Aldermen of Paterson was held to receive the report on the sewage disposal question. Mayor Johnson was authorized to appoint a committee of forty-eight to confer with a committee from Newark. It is reported that Paterson is now inclined to favor the trunk sewer, provided there is no legal obstacle to the discharge of the sewage into New York Bay. It is to be hoped that such legal obstacle may be found and found speedily.

Dr. Maximilian Herzog has been appointed pathologist to the Michael Reese Hospital, Chicago. Dr. Herzog was for several years stationed in the Philippines.

Missouri State Sanatorium. — The cornerstone of the Missouri State Sanatorium for the treatment of tuberculosis was laid by Governor Folk at Mount Vernon on August 15.

A Sanatorium for Stoughton. — An association has been formed at Stoughton, Mass., for the purchase of land and erection thereon of a sanatorium for the treatment of tuberculosis. A site has already been purchased on high ground, the highest between Narragansett Bay and Boston, and it is purposed to build on it a model institution, to cost $100,000.

Unable to Provide a Prison with a Tuberculosis Hospital. — The Attorney-General of Tennessee has given an opinion that the proposed erection by the Prison Commissioners of a tuberculosis hospital at the main State's prison would be illegal under the terms of the present prison act. The Governor will recommend in his message to the next Legislature that the necessary authority be given. There are now about twenty-five consumptives in the prison, and hardly ever a less number. Often such convicts are pardoned mainly because they are a menace to other prisoners.

Rapid School Inspection.—In accordance with a law passed by the Massachusetts Legislature, all the school children in the State will be regularly examined by physicians appointed by the local Health Boards. In Fall River, with a school population of 21,000, twelve inspectors have been appointed, and they will be required, it is stated, to complete the preliminary inspection of the public and parochial schools during the three school days of the first week of the fall term.

A Victim of Christian Science.—Five fanatics were censured in a verdict rendered by a Rochester coroner last week on the death of a young woman from meningitis. This girl was ill eleven weeks and was attended only by so-called Christian Science "healers," their treatment consisting of prayer and endeavoring to impress upon the mind of the girl that she was not ill, and if she but realized she was "the ideal child of God" her illness would be overcome and she would be well. The coroner recommends that the Health Bureau proceed against these "healers" under a city ordinance for neglecting to report an infectious disease.

Ticks and Spotted Fever.—Dr. King of the U. S. Public Health and Marine Hospital Service, who has been in Montana studying the manner of infection of spotted fever, states that he has confirmed the theory of the agency of ticks in transmitting the disease, having succeeded in inoculating animals in this way.

The Piscataquis County (Me.) Medical Association held its annual meeting at Dover on August 16. The following officers were elected for the ensuing year: *President,* Dr. C. C. Hall of Dover; *Secretary,* Dr. C. W. Ray of Sangerville; *Treasurer,* Dr. E. A. Thompson of Dover; *Executive Committee,* Drs. R. H. Marsh of Guilford, Hiram Hunt of Greenville, and Daniel Hayes of Henderson.

Cumberland Valley Medical Association—The fourth annual meeting of this association will be held at Chambersburg, Pa., on September 4, 1906, under the presidency of Dr. James Evelyn Pilcher of Carlisle, Pa. The secretary is Dr. John J. Coffman of Scotland, Pa.

American Roentgen Ray Society.—The seventh annual meeting of this society was held this week at Niagara Falls, under the presidency of Dr. Henry Hulst of Grand Rapids, Mich.

American Electro-Therapeutic Association. — The sixteenth annual meeting of the American Electro-Therapeutic Association will be held at the College of Physicians, Philadelphia, September 18, 19, and 20, 1906, under the presidency of Dr. William Benham Snow. Fellows and others intending to be present are requested to secure certificate of the railroad agent at the point of departure in order that the cost of transportation may be at the rate of a fare and a third. The headquarters of the association will be at the Hotel Flanders, Fifteenth and Walnut streets.

Tri-State (Alabama, Georgia, Tennessee) Medical Society.— The eighteenth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held at Chattanooga, October 2 to 4, 1906. Reduced rates have been obtained

from all points in Alabama, Georgia, Tennessee, Mississippi, Louisiana, and Florida, and an unusually large attendance is looked for. It is hoped that this society will form the nucleus of a branch of the American Medical Association, to be called the Association of the Southeastern States, and recommendations to that effect will be made at this meeting. Physicians desiring to read papers should send their titles at once to the secretary, Dr. Raymond Wallace, Chattanooga, Tenn.

Obituary Notes.—Dr. Joseph W. V. R. Plummer of Key West died August 9, after an illness of several weeks. He was born in Baltimore, March 17, 1842, and was graduated from the Southern Medical College, Atlanta, in the class of 1884. He served a term as Mayor of Key West and at the time of his death was city health officer.

Dr. James Brown Coombs of Washington, Iowa, died August 13, at the age of eighty-one years. He began the practice of medicine in 1851 and retired in 1891.

Dr. D. L. Delk of Oakdale, Tenn., died August 11. He was a graduate of the Chattanooga Medical College in the class of 1897.

Dr. William A. Bliss of Brooklyn died August 19. He was born at Sandlake, N. Y., in 1841, and was graduated from the Albany Medical College in 1866. He then moved to Brooklyn and took up the practice of his profession. In 1893 he moved to Fishkill, but again returned to Brooklyn in 1899.

Dr. John Gregg of Clarksburg, W. Va., died August 19, at St. Mary's Hospital in that city. He was born in Preston County, W. Va., May 27, 1838.

Dr. George D. Hamilton of Jackson, Tenn., died at St. Joseph's Hospital, Memphis, on August 16, aged thirty-five years. He was a graduate of the Medical Department of the University of Nashville in 1899.

Dr. Alvah B. Dearborn of Somerville, Mass., died August 19, at the age of sixty-four years. He was born in Topsham, Me., and was graduated from the Bowdoin Medical School in the class of 1870. He practised for a time in Newburyport before going to Somerville.

Dr. J. A. Slaughter of Kentuck, Va., died, after a long illness, on August 16, at the age of seventy years. He was born in Campbell County and had been in active practice for nearly fifty years.

Dr. C. B. Raines of Americus, Ga., died August 16. He was born in Fairfield County, S. C., and was graduated from the Louisville Medical College in 1871.

Dr. J. W. Breedlove of Fort Smith, Ark., died August 16, at the age of eighty years. He was born in Virginia in 1827 and was graduated from the Medical Department of Tulane University in 1849. He served throughout the Civil War in the medical corps of the Confederate Army. He was a resident of Fort Smith for forty-five years.

Dr. Charles Macmanus of Matamoras, Mexico, died August 14, at the age of eighty-six years. He was born in Ireland, but came to this country soon after graduating in medicine. He was surgeon in the U. S. Army during the Mexican War, and soon after peace was declared established his home in Matamoras.

Dr. Reginald J. Fitzgerald died August 19, at his home in Minneapolis, aged forty-six years. He was born in Nicaragua and was graduated from the Albany Medical College in 1882. He began practice that same year in Minneapolis. He was surgeon-major in the Thirteenth regiment of the Minnesota National Guard.

Dr. John A. Rice of Merton, Wis., died on August 19, at the age of seventy-five years. He was born in Essex County, N. Y., and was graduated from the Medical Department of the Western Reserve University, Cleveland, 1851.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITAL SUNDAY FUND—SCIENCE ASSOCIATION—NOMENCLATURE OF DISEASES—AMALGAMATION OF SOCIETIES—SCHOLARSHIP FOR STUDYING RHEUMATOID ARTHRITIS—TWO EXTRAORDINARY FATALITIES—OBITUARY.

London, August 10, 1906.

At a meeting of the Hospital Sunday Fund the report of the Distribution Committee was adopted and thanks accorded to all who had assisted. The collections amounted to £56,303, to which a legacy of £3,000 is to be added. The Cancer Hospital did not receive an award, as it is not in great want of funds, but the committee stated they fully realized the excellent work carried on in it. The award to Charing Cross Hospital is not to be paid until the effect of the special appeal is seen. Dr. Glover called attention to the enormous out-patient attendance at the London Hospital, suggesting that some limit should be placed upon it. The Hon. Sydney Holland replied that the reason the patients were so numerous was that it was the only hospital in the East End. He assured the meeting that all the cases were inquired into and that there was no abuse of the hospital by out-patients. That is Mr. Holland's opinion, which differs *in toto* from that of the profession, who regard Mr. Holland as to blame for the pauperization caused by those doings.

The Congress of Scientists at York has excited, I think, less interest than usual among the public, though some of the subjects might have been expected to give rise to animated discussions.

Professor Francis Gotch, in the Physiological Section, made a lively attack on the neovitalists, who, he declared, were prepared to state that certain physiological phenomena were, from a physical and chemical point of view, inexplicable and must forever remain so. Neovitalism, like its parent, vitalism, was fostered by the imperfect and prejudiced view of man as to his own existence. Unwilling to think his material part only differed in complexity from that of the nonliving world, he fabricated out of his own conceit a special realm. In 1898 Professor Japp, in the Chemical Section, made the sweeping statement that "no fortuitous concourse of atoms, even with all eternity to clash and combine, could compass this feat of the formation of the first optically active organic compound." Professor Gotch condemned as "unscientific" the notion that any physiological phenomenon was caused by vital force or was an argument for "vitalism." Such views only prejudiced scientific study. But neovitalism had, he said, "lost its corrosive character of late; its obstructive viscosity was continually yielding to the accumulating mass of more precise knowledge which it endeavored to obscure." I commend to you this sentence of the professor's denunciation, which went on to talk of those who are the "prey of verbal mystifications."

In the Physical Science Section Mr. Ladenburg reported that he had detected a new gas by allowing liquid ozone to vaporize into a vacuum tube: it seemed to be a modification of oxygen and had a higher molecular weight than ozone. Sir W. Ramsay and W. Spencer described chemical and electrical changes caused by ultraviolet light which point to the conclusion that elements and compounds when illuminated discharge corpuscles.

There were other subjects deserving of reports, did space permit. Of course, radium came in for much attention in various directions. The facts restated and the speculations about it, I understand, attracted both the public and the scientists. The latter, after their calculations about the cooling of the earth and the sun and the hypothesis that *if*—a rather strong *if*—so much radium were present, all suppositions as to the loss of heat would be upset, had a fresh surprise sprung upon them when Sir W. Crookes announced that he had made an experiment which proved that ice melted no faster near radium than near indifferent matter.

At the Royal College of Physicians on the 26th ult. the chairman of the Classification Committee, Dr. Pye-Smith, reported that the fourth edition of the "Nomenclature of Diseases" was completed, and spoke of the great assistance of various gentlemen, especially of the secretary of the committee, Dr. Ormerod, and of Mr. Shattock, who had prepared the Latin translations. A vote of thanks was accorded to Dr. Pye-Smith, and Dr. Ormerod was asked to

accept an honorarium of 200 guineas. Outside assistance has been given by the president and fellows of the College of Surgeons and also by the sister colleges in Scotland and Ireland. It will thus be seen that the "Nomenclature" is an authoritative work and the college, by revision, is keeping it abreast with the advance in medical science and practice. It is gratifying that as little deviation as possible, as at first intended, from the terms employed in the Register-General's office, is a point still kept in view.

In this revision the Section of General Diseases has been divided into (1) infective diseases, (2) intoxications, (3) general diseases not included in the foregoing, (4) morbid conditions in various parts. Pneumonia now takes its place in the first, epidemic diarrhea becomes "infective enteritis," membranous croup and membranous laryngitis are no longer to be applied to diphtheria, a decision which reminds one of a rather obstinate discussion as to these terms. "Pyrexia of uncertain origin" displaces fibricula and simple continued fever. Puerperal fever is dismissed, and pyemia, septicemia, or septic intoxication qualified by the adjective puerperal is to be used. In smallpox cases the presence or absence of vaccination marks should be noted, and when present their number, size, and character. Further information of a trustworthy nature should be added as to whether the patient was vaccinated or not, if so when, and further if revaccinated. The terms strumous and scrofulous are discarded. Intoxications include cocainism, ergotism, metallic poisoning, and tobacco poisoning. In the third group are anemia, cretinism, diabetes mellitus, exophthalmic goiter, gout, myxedema, purpura, rickets, scurvy, etc. In group 4 are malformations, the effects of certain parasites and poisons, new growths. The committee discourages names indicating merely symptoms, as convulsions, apoplexy, etc., whenever it is possible to state the cause. Such cases should be registered under the head of the primary disease, the secondary affection being added.

The movement for amalgamating the various medical societies is progressing, slowly but steadily. The organizing committee appointed a year ago recommends that eighteen societies should become the sections of the new union, with the hope that two others will be formed at an early date. All male members of societies joining in the union on its formation are to be admitted without election: female members of a society taking part in the amalgamation to become members of that section. Each section will be, as far as possible, self-governing and be represented on the council and the editorial committee. The finance committee of the general council is to control the expenditures of the sections. The general council of the union is proposed to consist of the president, the presidents of sections, two treasurers, two librarians, two secretaries, and eight other fellows.

A scholarship of £150 for two years for the investigation of rheumatoid arthritis has been placed at the disposal of the Cambridge University's Committee on Special Diseases. Dr. R. C. Brown of the Preston and Lancashire Infirmary is the donor, and the scholarship will be named after him.

Two remarkable fatalities occurred this week. As a Leicester family was picknicking at a neighboring village one of the children dropped an empty ginger beer bottle, which fell on a full one and caused it to explode. A piece of the glass struck his little brother's neck and penetrated the jugular.

The other extraordinary accident is reported this morning. While a gentleman of 57 was putting sticks to chrysanthemum plants in his garden one of the sticks broke off short in his hand and he fell forward onto another stick, which pierced his right eye and penetrated the brain.

Deputy Surgeon-General H. F. Smith died on Sunday, aged 82. He took his M.R.C.S. in 1846 and M.D., Aberdeen, in 1850. He served through the Eastern campaign, 1854-5, being attached to headquarters, and was not absent from duty one day in that period. He had medical charge of the staff, was present at Alma, Balaclava, Inkerman, and throughout the siege of Sebastopol; received the medal, four clasps, the Turkish medal, and the Medjedie. He retired in 1875.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

PAROXYSMAL ASTASIA—CONGENITAL ELEPHANTIASIS OF THE PREPUCE—NERVOUS STRICTURE OF THE CARDIA—IDIOPATHIC RENAL HEMORRHAGE.

VIENNA, July 31, 1906.

In the clinic for nervous diseases at the University, Erben has under observation a patient suffering from a peculiar form of astasia following an injury. Ordinarily the patient is able to stand alone and walks with a firm step, but when he becomes excited he begins to tremble and standing is interrupted by dancing steps (clonus), and in from a quarter to half a minute he is no longer able to stand, but must run forward with tripping steps and stiff legs in order not to fall. There are no automatic movements of balancing, but merely a tripping in the direction in which the patient feels that he is about to fall. Here then is a morbid picture composed of two factors, of the clonic spasms coming on in the form of attacks and of the impossibility of regaining in the usual way the equilibrium thereby upset. These two symptoms form the complex astasia described twenty years ago by Blocq.

Heinrich Lehndorff has reported an interesting case of congenital elephantiasis of the prepuce. The child, now sixteen months old, was found, after a normal pregnancy on the mother's part and easy delivery, to be suffering from an extensive non-painful edema of the external genitals and neighboring parts. The penis was the length and thickness of a finger and bent upwards, and the prepuce was greatly lengthened and thickened, of a doughy consistency, the skin being unchanged. The inguinal glands were not enlarged. The urine of both child and mother was free from albumin. The swelling of the scrotum and lower part of the abdomen gradually subsided in the course of six weeks or so, but the thickening of the prepuce persisted. This is now 2 cm. in length, markedly thickened, but there is no new growth palpable, and there is no vascular dilatation. The case was diagnosed as one of congenital elephantiasis of the prepuce.

Emil Schwartz reports a case of purely nervous closure of the cardia resulting in a marked fusiform dilatation of the esophagus. The beginning of the affliction dated back thirty years, during all of which time there had been dysphagia with vomiting of most of the food taken, resulting in extreme inanition. The psychic element was most marked. The patient could eat absolutely nothing in company without immediate regurgitation, and it was only in the solitude of her own apartment that she could, with great difficulty and in pain, swallow enough to support life. The patient was finally sent to the seashore for a change of air and scene, and from the very first day of her arrival was able to eat a dinner of several courses, even in the public dining room, and since that time, with a few periods of relapse of short duration, the cure has persisted, and the patient has gained notably in weight.

Illyor recently operated in a case of essential hemorrhage from the kidney. The patient, a man 44 years old, had some two years ago passed bloody urine for ten or twelve days. In July of this year, after a period of severe labor, the urine again became bloody, and the bleeding persisted Cystoscopic examination showed the origin of the hemorrhage to be from the left ureter. Examination, both chemical and microscopical, of the urine collected by ureteral catheterization, showed that the urine from both kidneys was absolutely normal. Although the examination was negative, as the bleeding continued, the left kidney was exposed. Its surface was smooth and it was of normal consistency. It was laid open from one pole to the other, the incision extending into the pelvis, but no pathological changes were found; neither was anything abnormal found in a thin section secured for microscopical examination. The incision was closed with four button sutures and the organ was replaced. The blood disappeared from the urine in three days and has not since appeared. The patient has gained in weight, has no cough and no elevation of temperature, and seems and declares himself to be perfectly well

AN ENGLISHMAN'S IMPRESSIONS OF THE TORONTO MEETING.

(From an Occasional Correspondent.)

TORONTO, August 21, 1906.

Toronto is assuredly one of the most beautiful cities of the world. Its position is almost unrivaled, and man has not, as in the case of Quebec, done his worst in regard to buildings. But in the matter of clean streets Toronto weighed in the balance would be found wanting. This fact is fully recognized by its lay press, one of its leading daily papers of August 21 containing an editorial headed "Our Disgraceful Streets." With this one drawback, Toronto has charmed all its medical visitors. And what a crowd of English-speaking doctors are here gathered together! From almost every part of the vast British Empire they have come. There are representatives from New Zealand, from Australia, from Africa, from the West Indies, and from India and the far Eastern possessions. A feature of the meeting which forcibly strikes the Britisher is the large number of physicians from the States who have put in an appearance. The *Daily Journal* of August 22, issued by the British Medical Association, publishes a list of more than 400 Americans from across the line who are here, while there are undoubtedly many who have yet to register. Canadian

and British medical men at present number considerably over 1,000 and include many of the leading lights of the British medical profession. It is needless to dwell upon the fact that such a commingling can be productive of nothing but good, whether regarded from the standpoint of medical science or from the political point of view. Americans can learn much, as regards medical science, from the steady, reliable, conservative Britisher, who always looks before he leaps, and the Briton can learn much from the more impetuous and perhaps more brilliant American.

A better situation than the magnificent medical buildings of Toronto University could hardly be imagined. The buildings themselves, ample, airy, and well ventilated, are splendidly adapted to the purpose. The main building, a picturesque structure, is devoted to the offices and to the official work of the association, and to writing rooms, resting rooms, and the many conveniences required by a meeting of the size of the present one. The whole *mise en scène* is in a high degree an attractive one, and appeals to an Englishman by reason of its freshness. It is unlike anything to be seen in Great Britain.

The opening ceremony in Convocation Hall on August 21 was eminently distinctive. A quarter of an hour before the ceremonies inside the building commenced all the delegates and the distinguished visitors, arrayed in cap and gown, assembled in the University Quadrangle and, under the leadership of the retiring president, Dr. Franklin of Leicester, marched to the Convocation Hall. The delegates were a mass of color, some of them indeed gorgeous, and included in their number were two Indian medical men, one of whom, from Bombay, was clad in native Parsee costume. A large assemblage had gathered in the hall, among the number being many ladies and many of the prominent personages of Canada. Sir James Grant of Ottawa, for many years physician to Governor-Generals of Canada, was present. Among notable British medical men upon the platform were Sir Thomas Barlow, Sir Victor Horsley Sir James Barr, Dr. Donald V. MacAlister, Dr. Clifford Allbutt, and Dr. Rose Bradford.

The proceedings were opened by Dr. Franklin, the retiring president, who delivered a valedictory address. It was very similar to the usual run of such addresses and was given in a hearty and genial manner. The speaker referred to the good work done during the past year by the medico-political and ethical committees, and he gave unstinted praise to Toronto itself and to the hospitality of its inhabitants. The president-elect, Dr. Reeve, Dean of the Medical Faculty of Toronto University, was then introduced to the delegates and invested with the gold badge of his office. Indeed, the usual routine of such meetings was decorously and properly gone through with, the only incident of especial note which occurred being the manifestations of the popularity of Sir Victor Horsley, attested by the acclamation when he was made a vice-president for life of the association. Sir Victor, who is a pleasing and distinctive speaker, and who looks the strong personality that he is, made an effective speech in returning thanks for the honor done him. The president-elect made a lengthy speech, much of which was taken up in panegyrics of medical men, alive and dead, of many countries.

On the evening of the 21st Dr. W. S. A. Griffith delivered an address in Obstetrics in the Convocation Hall. The address covered a large field and was characterized by sound common sense. On the afternoon of August 22, in the Convocation Hall of Toronto University, Sir James Barr of Liverpool delivered the address on Medicine. The subject was a very technical one, but enlivened at intervals with humorous and witty remarks. There was a good audience, including many ladies and some children, but as the address was in many parts incomprehensible to several of the medical men present, it is difficult to understand what pleasure it could have given to the first named. Sir James Barr indulged in some sharp epigrams; for instance, he said no amateur should be trusted with the repair of the circulation, yet thousands of American and British men and women poured yearly into their stomachs tons of baneful drugs, simply upon the advice of perfectly ignorant people. Again he remarked that a life of idleness and luxury is more deleterious to the arteries than is the work of a navvy. The happy mean is the object at which to aim. Sir James, who is the typical Scotchman, with a remarkably strong Scotch accent, possesses a pawky humor and must have made the many Americans present wonder whether they had not misjudged the Scotchman so far as the possession of this gift is concerned. A vote of thanks to Sir James Barr was moved by Dr. Donald MacAlister of Cambridge University, who again must have confounded the Americans, for his speech fairly bristled with witty and good things. The vote of thanks was seconded by Sir William Broadbent, who took occasion in a good-humored way to criticise some of Sir James Barr's conclusions. They hold somewhat opposite views in regard to the circulation.

So far as the meeting has gone it has been a great and unqualified success. There are present both quantity and quality, and the hospitality of the inhabitants of Toronto is profuse.

Progress of Medical Science.

New York Medical Journal, August 18, 1906.

The Present Status of the Treatment of Appendicitis; the Family Physician's Responsibility.—R. C. Coffey's paper on this subject is largely statistical, and he indulges in some theoretical speculation for the purpose of approximating the prevalence of appendicitis and the relative results of medical and surgical treatment. There seems to be no reason why cases diagnosed and referred to a competent surgeon within the first twenty-four or forty-eight hours should not present a mortality almost as small or at most less than two per cent. Almost all the deaths in the hands of well trained abdominal surgeons are the result of: 1. The family physician failing to recognize the disease early. 2. The family physician temporizing with medication or the Ochsner treatment. 3. The inability of the family physician to procure a competent surgeon early. 4. The opposition of the members of the family to surgical treatment. The duty of the physician, therefore, is first to acquire a realization of the fact that appendicitis is the most frequent of all the serious abdominal lesions; that many more cases of the dyspepsias, cramps, and acute peritonitis cases than have been formerly suspected are appendicitis. He advises the course proclaimed by Kelley: "The first indication in appendicitis is to call in a surgeon." The surgeon should determine the necessity for an operation.

Value of the Bier Treatment.—Edward Adams believes that the rubber bandage has, in a great many instances, superseded the knife in the treatment of various acute and chronic conditions. This method of Bier is of great assistance if properly used, and dealing especially with acute surgical affections of the soft parts.

Journal of the American Medical Association, August 25, 1906.

The Treatment of Emaciation.—L. Breisacher finds that leanness may be due to various causes. It is sometimes apparently hereditary, but may arise as a primary or secondary condition. The one great cause, excluding certain emaciating chronic diseases, is insufficient amount of food which may be due to loss of appetite from physical or mental causes, or the result of faulty dietetic habits which are sometimes handed down in families from generation to generation. Frequently, it results from an ignorance of the nutritive significance of particular foods or is the effect of eating but one or two meals a day in persons not fitted for such a régime. It may be due to poverty or nervousness, sexual neurasthenia or hysteria. These latter predominated, together with digestive abnormalities in the majority of his cases, and he has also observed attendant arteriosclerosis and insomnia, which are given by Cabot as causes, in a number of his cases. To a second group of causes belong the gastrointestinal disorders, mechanical or secretory, which he observed in nearly all his patients. He thinks that there is no doubt that the foundation of these disorders is often laid in the artificial feeding of infants. He also mentions the improper metabolism of food and increased oxygenation in the blood which cannot be precisely defined. In the treatment, therefore, it is advisable to make thorough examinations for all possible conditions, and to ascertain to what degree the stomach and bowels will bear forced feeding and what food will be best taken, digested and absorbed. With these points determined, he maps out a diet list containing from 2,200 to 2,500 calories, and gradually increases this to from 3,800 to 4,500 calories. This extreme diet is divided by him into 250 grains of fat, 150 of albumin and 400 of carbohydrates, amounting altogether to 4,580 calories. He also gives tonics and pushes them to the physiological limits if necessary. In nervous individuals he uses nerve sedatives, but never narcotics. From time to time he notices the excretory activity of the kidneys and compares it with the water intake, which should be from 2,000 to 3,000 c.c. Exercise is lessened or increased according to the demands of the case, and Breisacher also uses tepid baths, cold rubs, massage and electricity. Under this treatment patients often gain very rapidly

in weight, calling sometimes for reduction in diet. The chronic underfed usually require from two to six months' careful treatment of this kind.

The Fetich of Disinfection.—The value of modern disinfection methods, as applied after cases of contagious disease, is questioned by C. V. Chapin, who, while not denying the possibility, thinks that cases of transference of disease by infected articles and dwellings are very rarely well authenticated. In his experience of twenty-two years as health officer he has seen very few of them, and has become convinced of their comparative unimportance. We are apt, he thinks, to overestimate the vitality of germs outside of the body and to underestimate the importance of mild, unrecognized cases of infectious diseases as factors in its spread. Healthy individuals are also carriers of disease germs, and as such are more numerous than the mild unrecognized cases of the disease itself. A good deal of disinfection, moreover, does not disinfect, and the futility of disinfecting houses and things when we are not sure that the persons inhabiting them or using them are themselves noninfectious is obvious. A practical test of the nonutility of disinfection has been made in Providence. During the past year the warning card has been removed without disinfection in 258 cases of diphtheria, and there has been a recurrence in the family within two months in four cases, or 1.55 per cent. In eighty-seven cases in which disinfection was practised during the same period, or a few months preceding, there was a recurrence in 2.3 per cent. of the cases. The overestimation of the value of disinfection is, he thinks, the greatest hindrance to the development of better methods of handling disease and guarding against infection.

Studies on Phagocytosis.—D. H. Bergey relates briefly some experiments made to ascertain whether the opsonic power of blood serum was efficacious against certain classes of microorganisms, and also to determine whether or not the macrophages of Metchnikoff participated in the phagocytosis. His experiments were carried out with the peritoneal exudates of guinea-pigs following aleuronat injections. The exudate was mixed with equal quantities of 0.85 per cent. sodium chloride and then added to the various bacterial suspensions in equal proportions in capillary tubes. These tubes were incubated at from 34 to 36 C. for thirty minutes, when smears were prepared which contained as nearly as possible equal numbers of bacteria, but no attempt was made to have an equal number of bacteria for the several tests, so that the different exudates did not contain equal numbers of bacteria. A series of ten experiments was carried on with the exudate obtained from ten different animals by employing the following cultures: *Bacterium pseudodiphtheriticum;* two cultures of *Streptococcus pyogenes*, one from urine and from the throat in a case of scarlet fever; *Micrococcus catarrhalis; Micrococcus pyogenes albus* and *Micrococcus aureus.* The results are shown in tables. A series of five experiments was undertaken with the view of ascertaining the range of bacteria susceptible to phagocytosis under similar conditions. For these observations, the following organisms were used: *Micrococcus aureus, Microspira schuylkillensis,* and *Bacillus dysenteriæ* Shiga. The results obtained in this series of observations are also shown in tables. These results are too few in number and too erratic, Bergey states, to warrant the formulation of any definate deductions. In several instances no phagocytic action could be demonstrated, and doubt existed usually as to whether the spirilla and dysentery bacilli were really within the phagocytes or were merely lying on them, or adherent to their exterior. The results indicate that the opsonic power of the blood serum is much more pronounced for those bacteria which induce septicemia than for those in which a more distinct bactericidal immunity is induced.

The Lancet, August 11, 1906.

Amblyopia in Young Children Consequent Upon Inherited Syphilis.—Sydney Stephenson called attention to a condition which obviously represents a secondary manifestation of congenital syphilis, and which corresponds with the retinitis, choroiditis, or retinochoroiditis sometimes observed in the acquired form. In both the congenital and acquired forms it is unusual for one eye to be alone affected. He makes the point about infantile amblyopia that in babies "hyalitis" forms the leading ophthalmoscopic feature, while the underlying choroiditic or retinitic lesions may be relatively insignificant or altogether hidden by the cloudy vitreous humor. In his opinion, in babies, a cloudy vitreous humor means the existence of congenital syphilis. He reports six cases, in four of which the hazy vitreous cleared up under the influence of mercury. In none of his cases of infantile amblyopia were there any evidences of iritis.

A Successful Case of Splenectomy for Rupture of the Spleen.—Graham S. Simpson reports the case of a man, 27 years old, who fell a distance of twenty feet. Four hours afterwards he complained of severe pain in the abdomen, was pale and looked anxious, with breathing jerky and thoracic, pulse 140, temperature 100° F., and respirations 50. The abdomen was rigid and did not move with respiration. Liver dullness was present and there was some dullness in the epigastrium. At operation a large transverse tear, starting from the hilum and nearly separating the lower third of the organ was found. A long pair of artery forceps applied to the pedicle stopped the hemorrhage, making the rest of the operation a simple one. The spleen was brought round, in front of the stomach, the pedicle was transfixed and ligatured, the spleen was excised and the wound sewn up in layers. A slow recovery followed.

British Medical Journal, August 11, 1906.

The Microscopic Changes in the Nervous System in a Case of Chronic Dourine.—F. W. Mott says that dourine, or "mal de coit," is due to a specific form of trypanosome which has the power of penetrating the mucous membrane, affects equines, and is transmitted by coitus, of special interest since the demonstration of the *Spirochæta pallida* of syphilis. A comparative examination of the nervous tissue of this disease with those of animals infected with *Trypanosoma gambiense,* and with the tissues of human beings dying of sleeping sickness appears to show that chronic trypanosome infection causes a chronic lymphadenitis, followed later by an interstitial inflammation of the connective tissue structures of the nervous system.

Antistreptococcus Serum in Empyema.—John Wm. Ingles reports the case of a boy, 11 years old, suffering from an acute pleurisy with effusion on the left side. He was strumous. Eight days after he first saw the child, pus was found and operation refused. Antistreptococcus serum, in 10 c.c. doses, was administered which was followed by an adventitious rash and aching throughout the body, which soon disappeared. Two weeks after the first administration of the serum the child was out of bed and the cough had entirely disappeared. A rapid return to health followed.

Berliner klinische Wochenschrift, August 6, 1906.

Myeloid Degeneration.—Hirschfeld submits some further studies on myeloid metaplasia, as an addition to his earlier observations. In three cases of lymphatic leukemia he was able to demonstrate myeloid degeneration in the spleen as well as in the lymphatic glands. This shows that there is no sharp line of distinction between lymphocytes and granulocytes as hitherto assumed, and that likewise there is no difference in reality between lymphatic and myelogenous leukemia. Although these diseases may be separated from the standpoint of etiology and histology, the cases reported by the writer show that there are transition stages between the two.

Head's Zones in Diseases of the Digestive Organs.—Kast, in an extended discussion of this subject, claims that the phenomenon in question cannot be explained by the mere extension of a pathological process in the internal organs secondarily involving the cutaneous nerves. It is well known that the various parts of the digestive tract are practically insensitive to the ordinary stimuli. Such a condition would really be superfluous, as these viscera do not under normal circumstances, receive stimuli of this character. The stomach, intestines, ureter, heart, etc., all receive their stimulus from within, and it is from this direction that the cause of any aberration of function must be sought. Kast finds that in certain diseases the zones are by no means constant; thus out of twelve cases of undoubted carcinoma of the stomach, the sign was only elicited in one, and in this instance the process had been transmitted from the esophagus. Then on the other hand the zones may be present with a great variety of conditions, such as gastritis, neuroses, achylia, or ulcer, so that no definite conclusions are possible as to the exact diagnosis of the complaint.

Münchener medicinische Wochenschrift, August 7, 1906.

Acute Dilatation of the Stomach.—Neck calls attention to the necessity of making an early diagnosis of this condition, which unless recognized in time may lead to very serious results. The four cases which he reports serve as a basis for a brief discussion of the

subject and its treatment. The symptoms are marked by the appearance of sudden and severe vomiting, accompanied by more or less pain in various parts of the distended abdomen. The pulse is small and rapid, but there is no rise of temperature. The absence of the latter is important, because by this sign the condition may be differentiated from a peritonitis. Another sign of value is the presence of evidences of a localized collection of fluid on the left side of the abdomen. Neck finds that among sixty reported cases, a correct diagnosis was made in only thirteen instances, and this usually by men who had previously treated the condition without having recognized the true state of affairs until an autopsy was made. Neck thinks that the diagnosis can best be confirmed by the introduction of the stomach tube. The prognosis, unless correct treatment is instituted at once, is bad. The mortality in the sixty-four cases which have been published, is 47. The first point in treatment is to favor the evacuation of the stomach, which is best accomplished by placing the patient in an elevated pelvic position. During the first few days, gastric lavage should be regularly done, and no food is to be given by mouth until the stomach has recovered its tone. The necessary fluids may be provided by the administration of normal salt solution subcutaneously or by rectum. Nutrient enemata are also indicated and the heart must be properly stimulated. This form of gastric dilatation is also apt to be complicated by disturbances in the duodenum marked by distention of this organ brought about by the tension on the mesentery. This may also involve other portions of the gut, and will be relieved by the treatment directed towards the gastric condition. If this is ineffective, then a laparotomy is indicated.

Behavior of the Typhoid Bacilli in the Blood.—Lemierre discusses this phenomenon in relation to the bactericidal action of the blood. He made a series of experiments in order to determine how long the defibrinated blood of typhoid patients could be kept in the undiluted form without the contained typhoid bacilli being killed off. It seems that there is a period during which the growth of the bacilli is inhibited, but after this the resistance is overcome and the bacilli proliferate very quickly. The practical use to be made of this observation is that blood from typhoid patients may be kept for several days in the defibrinated state, before it is diluted with the nutrient medium.

A Simple Apparatus for the Bier Treatment.—Muck describes a substitute for the rubber suction bulb which he has used with good results in treating tubercular otitis media and other conditions. The rubber bulb in this contrivance is replaced by a glass ball in which the vacuum is produced by the aid of an ordinary suction syringe. The neck of the glass bulb is connected with a rubber tube, which is provided with a clamp, and after the air is exhausted, this is attached to the cup. On releasing the clamp the air from the latter finds its way into the glass bulb. The entire apparatus may be readily sterilized, and can be constructed very cheaply.

Deutsche medizinische Wochenschrift, August 9, 1906.

Unusual Complications of Typhoid Fever.—Pfister thinks that the irregular course of this disease and its attendant complications are due most likely to some inherent differences in the bacilli themselves, although thus far we have been unable to distinguish them by any known laboratory methods. In one of the cases reported there developed during the second week of an unusually mild attack of typhoid fever, a pneumonic process in the left lung. Although the typhoid subsided, the pulmonary process persisted unchanged, with continued irregular temperature. On the forty-third day of the disease, the patient suddenly coughed up about a pint of pure pus, and then the pulmonary signs and the temperature subsided for a time, only to be renewed until another collection of pus was coughed up. Then the patient made an uninterrupted recovery. In the second case a membranous enteritis appeared during the period of convalescence. The writer thinks that the typhoid process served in this instance to bring on the secondary enteritis, due to the irritation of the diarrheal discharges combined with a specific toxic action. In the third case a rapidly increasing coma appeared on the seventh day of the disease. The patient died in this state and a meningeal involvement was suspected. The autopsy showed extensive meningeal hemorrhages, which, together with the bleeding into a number of other organs, seemed sufficient to account for the profound anemia observed during the last few days of life. Such hemorrhages during the course of typhoid fever are quite rare and there is nothing certain in regard to their etiology. Probably they are analogous to the hemorrhages observed during the course of a severe sepsis.

Is Appendicitis More Frequent in Men or in Women?—Karrenstein has collected the figures from some of the larger German institutions, from which it appears that the sexes are about equally affected. During one year, however, there was a marked preponderance of cases among women. In looking up the statistics of acute intestinal catarrhs, influenza, and tonsillar inflammations, conditions which are believed to have an important bearing on the etiology of appendicitis, it was found that with the exception of the year noted, the female sex was less frequently afflicted than the male. These figures refer to institutions in Berlin, but in those of Hamburg, which were similarly studied, it was found that women were more often the subject of appendicitis than men. But here likewise it was found that the other disturbances just referred to were also more prevalent in the female sex. These figures seem to show that the male sex cannot claim a monopoly in this disease.

The Use of Alkalized Buttermilk as Infant Food.—Moll in a previous article announced the result of his experiments with this preparation, which can, it seems, be given with advantage either alone or as an addition to breast feeding, particularly in chronic gastrointestinal complaints. Among the objections urged against the method was the fact that this preparation could not be given for any great length of time without producing further disturbances. Moll now advises that the milk be given at first in more dilute form so that the infant will become more gradually accustomed to the new diet. He has used it in a large number of cases and the milk may be readily prepared at home by the addition of the prescribed alkaline powder to ordinary buttermilk. This powder consists of milk sugar and cane sugar, each 20 grams, rice flour, 9 grams, and dry sodium carbonate, 3 grams; this quantity is sufficient for one liter of milk.

The American Journal of the Medical Sciences, July, 1906.

Further Observations on the Anatomy of the Duodenum.—A. J. Ochsner some time ago directed attention to an anatomical condition of the duodenum, consisting in a marked thickening of the circular muscle fibers at a point below the entrance of the common duct. He proved this by a large number of dissections. The position of these muscle fibers varied. In some cases they formed a narrow circular band; in other cases the thickening was diffused; in still a few more there were two different bands. There was a difference in the location of this duodenal sphincter, though as a rule it was situated from three to ten c.c. below the point of entrance of the common duct. The writer believes that these conditions explain a number of physiological facts: the fact that vomiting when the stomach is comparatively empty always expels a certain amount of bile; and the fact that in many cases, in which there is a dilatation of the stomach without constriction of the pylorus, with an ulcer in the pyloric end, the ulcer often extends into the duodenum. It may explain some of the gastric symptoms observed in gallstone disease. It also explains the presence of a greatly distended duodenum with a completely contracted first part of the jejunum often noted in operations for the relief of gallstones and ulcer of the stomach. Further it explains the presence of the bile-staining of the duodenum above the comman duct in the cadaver. The writer also suggests that this arrangement of circular muscle fibers may serve the purpose of a sphincter to facilitate the process of mixing the bile and the pancreatic juice in the duodenum.

The Sufficiency of Simple Intercostal Incision in Acute Empyema, with a Report of Five Cases.—James Farquharson Leys believes that simple intercostal incision is the best treatment for acute empyema. The operation is performed through an intercostal space. Resection of a rib is not only quite unnecessary, but practically undesirable in all cases of acute empyema. The writer reports the history of five cases, describing the operation as follows: Local anesthesia is produced by a lump of ice dipped in coarse salt and held against the chest, or with a spray of ether from a hand atomizer, or with a spray of ethyl chloride. The patient is propped into a sitting posture. The implements used are a scalpel, a pair of blunt straight scissors, two pairs of hemostatic forceps, about twelve inches of three-eighths inch rubber drainage tubing, fenestrated on alternate sides at intervals of an inch, and four large safety pins at least two inches long. All of these articles as well as the dressings and the patient's skin are carefully sterilized before the operation.

The Advisability of Eliminating the Terms Ménière's Disease and Ménière's Symptoms from Otological Nomenclature.—Emil Amberg, after discussing this subject, concludes that the triad—hardness of hearing, vertigo, and tinnitus, is given as constituting the functional disturbance observed in the so-called Ménière's disease. These symptoms occur also in numerous affections, which are not based on the pathological finding as described by Ménière in his historical case. The observation that not always a typical picture is present, has led to the introduction of other terms, such as "Ménière's symptoms," etc., which have proved to be confusing. Even affections of the middle ear, of the outer ear, or of other parts of the body can cause the symptoms described by Ménière. These latter causes can be diagnosed in many instances, and prove the existence of a great group of affections characterized by functional disturbances of the inner ear. By abandoning the terms "Ménière's disease" and "Ménière's symptoms" a more definite nomenclature can be introduced. This is important, not only from a physiological and pathological, but also from a clinical standpoint. By using, for instance, the terms "otitis interna syphilitica," or "leukemica," or "angioneurotica," or "gastrica," a clearer conception of some affections would ensue. The various terms should be agreed upon. The many international medical meetings give ample opportunity for such an agreement.

Alcoholic Multiple Neuritis.—Charles W. Burr declares that multiple neuritis is as a rule easily diagnosed. It is never difficult to differentiate it from cerebral palsy, but it is sometimes almost impossible to determine whether or not there is also disease of the spinal cord. In children the question may arise whether acute anterior poliomyelitis or neuritis is present. In the former there is never muscle pain, nerve tenderness, nor areas of skin anesthesia. The determination of the cause of the disease is far more difficult than the recognition of its seat. There are two distinct types of this affection, the one chronic, the other distinctly acute. Many of the acute cases are engrafted upon the chronic disease. More laboring men suffer than any other class. The prognosis in multiple neuritis without serious mental symptoms is good, as a rule. In some cases recovery is complete. The writer cites the histories of a number of cases.

Experiments on the Great Omentum.—Leonard S. Dudgeon and Athole Ross state that it is an undoubted fact that the great omentum plays a very important part in the bacteriology of peritonitis, but of still greater importance is its relation to cellular pathology. Their experiments lead them to believe that the *Staphylococcus albus* is often present as a normal inhabitant of the omentum; and that when non-bacteriological substances are injected into the peritoneal cavity of animals the *Staphylococcus albus* can usually be recovered from the great omentum. By one of these investigators there has been cultivated the same white coccus from the omentum in many cases in which the peritoneum was opened, apart from peritonitis. In all these cases the pieces of omentum were dropped into culture tubes of broth, and the growth investigated in the usual way.

The Practical Significance of a Trace of Albumin in the Urine.—Joseph P. Tunis presents these conclusions: 1. From any point of view the term "physiological albuminuria" is almost universally regarded as misleading, unsatisfactory, and inadequate. 2. As long as albumin is a constituent of the urine the individual voiding it cannot be regarded as normal. 3. The mortality among such persons must necessarily be higher than among an equal number of individuals who do not show this phenomenon. 4. The actual mortality rate among this class can best be approximated by a comparison of the records of half a dozen of the largest life insurance companies (dealing with hundreds of thousands of cases) over a period of twenty years at the least. 5. The prompt means of discriminating between the transient forms of albuminuria and those of real clinical significance may be found in some such therapeutic test as that of calcium lactate, rather than by any further developments in the chemistry of the urine. 6. Experience proves that a faint trace of albumin in the urine of an individual past middle life is often of greater significance than a decided trace by unexpectedly directing attention to the finding of casts of pathological importance, which might otherwise have been easily overlooked. 7. For practical purposes the heat and nitric acid test for albumin is the best one, and the careful use of Roberts' solution the most satisfactory control test in doubtful cases. 8. For the proper diagnosis and prognosis too much stress cannot be laid on a thorough consideratin of the clinical conditions as a whole.

French and Italian Journals.

Primary Malignant Tumors of Bartholin's Gland.—In a recent thesis by G. Chaboux, the author reports, besides one personal case, eleven observations of this nature. The histological examinations of seven of these which have been collected from the literature are given. The writer, in collaboration with M. A. Gambou, has made a series of researches on the histological structure of the normal gland. They demonstrate that the vulvovaginal gland is not formed of glandular bodies disseminated throughout the tissues of the labia majora. Its structure is homogeneous, and it is surrounded by a connective tissue capsule. The gland is not striated with muscular fibers. There are only a few smooth fibers around the large ducts. Chaboux finally describes the different clinical forms of the malignant primary tumor. They are quite rare, and are often consecutive to bartholinitis. The progress as a rule is rapid. The recurrences in the inguinal ganglia are frequent. Early and extensive ablation is indicated as well as thorough curettage of the inguinal region.—*La Presse Médicale*, June 20, 1906.

Puerperal Anuria. Decapsulation of the Kidney. Death.—Henri Hartmann reports this case. The patient, a woman twenty-seven years old, gave birth to her first child at the age of twenty-one. Normal delivery at this time was followed by eclampsia and an albuminuria, which disappeared at the end of a few months. There was a premature birth three years later, and again in two years, a second delivery at term without incident. On March 6, 1905, the patient was normally delivered at term. Nothing of importance was noted. Diarrhea had been present during the eight days that had preceded the birth. Forty-eight hours later the temperature rose. During the entire day the patient could not void a drop of urine. The anuria persisted for the following days. It was accompanied by vomiting and by bilious glairy stools, which were slightly bloody. On March 18 the general condition was grave, and the patient was in a semi-comatose state. Examination of the abdomen and uterus showed nothing of interest. With the cathether twenty cubic centimeters of turbid urine, slightly colored by blood, were withdrawn. The specific gravity was 1.013; there were no casts, but leucocytes and red blood cells were present. On the next day decapsulation of the right kidney was performed. On March 21 the patient died. At operation the kidney was found to be turgid. This organ had been under great compression, and its condition indicated decapsulation, in spite of the failure of intervention.—*Annales de Gynécologie et d'Obstétrique*, June, 1906.

Coexistence of Two Cancers of Different Nature in the Same Individual.—Aynaud describes these growths. The patient was a man sixty years old. About four months before he came to the hospital he noticed a small nodule near the frenum of the tongue, a little to the left. It grew to the size of a nut; it was adherent and its surface was bosselated. The entire region was infiltrated. The patient had also suffered for three months with gastric pains, which were vague, and not clearly localized. For two months he had vomited daily, and his cachexia was very pronounced. At autopsy the two neoplasms were found to be independent of each other. The buccal growth proved to be a cancer of the lingual mucosa. The tumor was a typical epithelioma of the pavement cell variety. The pyloric tumor was of the cylindrical type.—*Bulletins et Mémoires de la Société Anatomique de Paris*, February, 1906.

Effect of Injections of Saline Solution and Distilled Water in Nephrectomized Animals.—A. Campani found that nephrectomized animals into whom was injected distilled water lived much longer than those untreated. Saline solution did not have this effect in prolonging life. After the use of saline solution the blood in the heart was liquid, while after distilled water it coagulated normally. It made no difference whether the injections were hypodermic or endovenous as to the effects obtained. The author cannot as yet give any reason for the beneficial effects of distilled water, but puts forward the hypothesis that the migrating of the motor among the tissues, so as to keep up a normal amount of blood concentration, retains many of the organic waste materials and prevents them from entering the blood and poisoning the system. Saline solution cannot be used in sufficient concentration to have this beneficial effects.—*La Riforma Medica*, June 16, 1906.

Book Reviews.

THE PHYSICAL EXAMINATION OF INFANTS AND YOUNG CHILDREN. By THERON WENDELL KILMER, M.D., Adjunct Attending Pediatrist to the Sydenham Hospital; Instructor in Pediatrics in the New York Polyclinic Medical School and Hospital, New York. Philadelphia: F. A. Davis Company, 1906.

THE author was led to write the present little volume by the "deplorable ignorance of most physicians as to the methods of examination of babies." Accordingly the book is a primer of the subject, written from the viewpoint of the teacher of a spelling class, and will be found useful by those who for the first time do clinical work among infants and children. In addition to the methods of general diagnosis, the book treats very briefly of the examination of the throat, nose, ears, eyes, blood, stomach contents, breast milk, and the collection of urine and sputum. The method of lumbar puncture is also outlined. The illustrations for the most part show what they are intended to show and the book will surely be found satisfactory by those who seek to know the rudiments of the examination of little children.

THE PRACTICAL MEDICINE SERIES. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume I: General Medicine. Edited by FRANK BILLINGS, M.S., M.D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. SALISBURY, A.M., M.D., Professor of Medicine, Chicago Clinical School. Volume II: General Surgery. Edited by JOHN B. MURPHY, A.M., M.D., LL.D., Professor of Surgery in Rush Medical College, Chicago: The Year Book Publishers, 1906.

THE year 1905 did not bring anything very startling in the field of general medicine. In all branches of this field however advances have been made, especially in diagnosis and treatment, and in the collection of data on etiology. As might be expected, tuberculosis led the way, with typhoid fever, rheumatism, cerebrospinal meningitis, etc., following closely. To the physician who has not the time or the inclination to read every important journal the present volume will offer an easy road to a sufficiently detailed comprehension of all the progress that has been made in our knowledge of the principal internal diseases. In the second volume we have in the space of 583 duodecimo pages the record of the year's progress in surgery from anesthesia to *x*-rays. Of course, not every topic has been considered with equal fullness, but a praiseworthy attempt has been made to treat most exhaustively those subjects which appeal to the practical man. As may be expected in a book edited by Murphy, the chapter on intestinal surgery is most complete, and reads with sustained interest.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures, and Especially Prepared Original Articles. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. KELLY, A.M., M.D., Philadelphia, U. S. A. Volume I, Sixteenth Series, 1906. Philadelphia and London: J. B. Lippincott Company, 1906.

THE present volume does not differ essentially from those of the preceding series. Twenty-one original articles are included in its contents. Of these eight come from Philadelphia, New York is represented by two, Chicago by three, Boston by two, and Baltimore by two, while one comes from California. Foreign countries are represented by two articles from Paris, one from London, and one from Berlin. The character of these contributions is excellent. In the reviewer's opinion it is a mistake to combine the potpourri of medical progress with the "International Clinics." The latter could well afford to stand alone, while the review of medical advances demands separate and far more complete treatment to be of any real value.

DIE BASEDOW'SCHE KRANKHEIT. Von Dr. P. J. MÖBIUS in Leipzig. Second Revised Edition. Vienna: Alfred Hölder, 1906.

MÖBIUS has for ten years past contributed the reviews on the subject of Exophthalmic goitre to Schmidt's Jahrbücher. To anyone who is familiar with this venerable retrospect of medicine this at once conveys the thought that the author must have read and reviewed every article of importance on the subject. There were over 400 such articles published in the last ten years, and the present volume is a systematic account of Basedow's disease in the light of this literary material. Beginning with a brief historical note, the etiology, as we know it, of the disease is considered; the various symptoms are then described in turn, the complications, the clinical forms, the diagnosis and prognosis each receive their quota of attention, while the chapter on treatment completes the book. Very few German medical authors can be named who can surpass Möbius in lucidity of style, in unity and balance of exposition, and in the living interest of their pages.

GEISTESKRANKHEIT UND NATURWISSENSCHAFT; Geisteskrankheit und Sitte; Geisteskrankheit und Genialität, Geisteskrankheit und Schicksal. Von Dr. Med. HEINRICH STADELMANN, Nervenarzt in Dresden. Munich: Otto Gmelin, 1905.

IN these four little essays, which are mere outline sketches, the author attempts to present the relation of insanity to natural science, to custom, to genius, and to fate. Rather a large undertaking, but he pleads his cause well in the limited space he occupies.

THE COMBINED TREATMENT IN DISEASES OF THE EYE. By G. HERBERT BURNHAM, M.D.Tor.,F.R.C.S.Edin., M.R.C.S. Eng., Professor of Ophthalmology and Otology at the University of Toronto; Original Member of the Ophthalmological Society of the United Kingdom; Oculist and Aurist to the Mercer Eye and Ear Infirmary, and General Hospital, Toronto, Canada. London: H. K. Lewis, 1906.

THE work is a monograph of 92 pages devoted to a consideration of the value of mercury and the iodide of potassium in combination with pilocarpine in the treatment of certain diseases of the eye. The method of the use of these drugs as advocated by the writer is minutely described. He terms this form of treatment "The Combined Treatment." Chapter I contains the theory of the action of the remedies, the manner in which they should be given, and general remarks. Chapters II to VIII, inclusive, are devoted to the reports of cases. Chapter IX is a general summing up of the whole subject. The subject as put forth by the writer is worthy of consideration by ophthalmologists, as it discloses a careful study of the effect of the remedies in many obstinate diseases of the eye.

ENIGMAS OF PSYCHICAL RESEARCH. By JAMES H. HYSLOP, Ph.D., LL.D., formerly Professor of Ethics and Logic in Columbia University. Author of "Science and a Future Life," etc. Boston: Herbert B. Turner & Co., 1906.

THIS volume is intended as a supplement to the author's previous book on "Science and a Future Life." The eleven chapters of which the work consists are supposed to cover the whole field of the supernormal, and deal with the residues of science, the ancient oracles, crystal vision, crystal gazing, telepathy, dreams, apparitions, clairvoyance, premonitions, mediumistic phenomena, retrospect, and vaticination. Most of the selected illustrations are old and are said to have received the *imprimatur* of the Society for Psychical Research. What the exact value of this may be, we do not presume to say; but it is very certain that in most cases we have only the *ipse dixit* of the dreamer or crystal gazer. The author says that "the passionate interest of men is turning either to science or to illusion and folly for guidance." We have no hesitation in recommending science as by far the better of these alternatives; but while the present volume is interesting in a way, what science there may be in it is so deeply buried that we have failed to find it.

TRANSACTIONS OF THE NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY AND THE CARE AND TREATMENT OF EPILEPTICS; Volumes II and III: 1902 to 1905, inclusive. Edited by WILLIAM P. SPRATLING, M.D.

THIS works contains the transactions of the annual meetings of the foregoing Association from 1902 to 1905 inclusive and appears in two volumes, II and III; volume I having been published in 1901. Volume II contains the Presidential Address of Dr. Frederick Peterson in 1902 and that of Dr. Wharton Sinkler in 1903. It also contains 21 scientific papers that bring concisely under review all phases of epilepsy, including its etiology, diagnosis, pathology; clinical manifestations, and treatment; as well as reports on the public care of epileptics. Volume III contains the Presidential Address by Dr. William N. Bullard, for 1904, and that of Dr. William P. Spratling, for 1905. In the main this volume is given over to scientific papers on epilepsy; though it has a section made up of reports from many foreign countries and from all of the States in this country in which public provision for epileptics has been made. On the whole the facts presented in these transactions are peculiarly valuable and comprehensive and probably cannot be duplicated or exceeded by any other collection of papers of like purport on this extraordinary disease.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Seventy-ninth Annual Meeting, Held at Bristol, August 21, 22, 23, 24, and 25, 1900.

Special Report to the Medical Press.

(Continued from page 310.)

GENERAL SESSIONS.

Second Day—Wednesday, August 22.

Address in Medicine.—Sir James Barr of Liverpool, who delivered the address in the afternoon session, chose as his subject, "The Circulation Viewed from the Periphery." He said that diseases of the heart most frequently arose from causes acting on the periphery, and the man who studied the circulation with the stethoscope was a positive danger to society. The capillaries constituted a vast filter bed for conveying nutritive material and oxygen to the tissues, and for removing waste products therefrom. Velocity and pressure were studied; they might be said to stand, within certain limits, in an inverse ratio to one another, the more rapid the flow the less the lateral pressure, and vice versa. The lateral pressure depended on the statical condition of the blood, and just in proportion as one introduced movement one converted the force of pressure into that of velocity. He had recorded capillary pressures varying from 50 to 2,000 mm. of water, and velocity records have ranged from about 0.5 mm. to over 25 mm. per second. The viscosity of the blood varied greatly and was no doubt the great cause of resistance in the capillaries. Normally it was about five times that of distilled water. In many diseases it was nine or ten times that. Viscosity was an important element in the resistance; it was increased by CO_2 and diminished by heat; it was also increased by salts of calcium, magnesium, and strontium, and diminished by decalcifying agents. He then considered the interchange of material through the capillary walls. The so-called digestion leucocytosis was no evidence of increase of white cells in the circulating blood, but merely that lympth had been passed out from the vessels, and in this lympth there was a considerable number of lymphocytes, probably obtained from the tissues rather than from the capillaries. There was no doubt a digestion leucocytosis, but it was not what had been described. The arterioles and capillaries of the splanchnic area were well supplied with vasomotor nerves, which were the chief regulators of the arterial blood pressure. The resistance to the outflow was very slight, except in cases of portal obstruction; hence the velocity was usually great and the lateral pressure slight. The velocity in the capillaries of the liver was often so slow that the liver was of a dull purple color and the pressure was relatively but not absolutely high. The liver acted as a reservoir for the right side of the heart. The vasomotor nerves supplying the arterioles and capillaries of the kidneys protected the capillaries of the glomeruli from any excessive pressure; thus high arterial pressure increased the velocity in the glomeruli, but not necessarily the lateral pressure. The glomeruli were further protected by Bowman's capsule, and again from any backward venous pressure by a second set of capillaries into which the efferent vessels divided. With lessened velocity and lowered pressure the concentration of the filtrate was increased. In granular kidneys the glomeruli were further protected by an increased thickness of Bowman's capsule; the velocity was much increased and the pressure only relatively so; the filtrate was bulky, but not concentrated. There was nocturnal diuresis because of the horizontal posture. The spleen appeared to have the power of contracting and regulating its own blood supply, and adrenalin had a powerful effect in producing contraction. The cerebral vessels were not very contractile, and took no part in regulating the general arterial pressure. Owing to the stress and strain to which they were frequently subjected they were liable to atheromatous and calcareous degenerations of the internal coat, and thickening of the external coat; there were also frequently seen small miliary aneurysms. The velocity was enormously increased at times, but not the lateral pressure. The arterioles which supplied the heart resembled the cerebral vessels in being thin-walled and having very few vasomotor nerves, if any. When the coronary artery was blocked the heart might be supplied with blood from the venous side. The pressure in the pulmonary artery was not more than one-third, and the velocity of the blood about three-fourths of those respective conditions in the aorta; but the pressure in the pulmonary veins was always positive, so that the blood always entered the left side of the heart under pressure, while it was usually sucked into the right side. There was a gradual fall of the pressure-gradient from the right ventricle to the left auricle. The lungs formed a blood reservoir for the left side of the heart. The pressure in the capillaries was usually higher than that in the veins because their sectional area was greater and there was greater friction, but if the arterioles were much contracted, a tenth or even a twentieth of the capillaries might not be filled with blood, and the sectional area might fall even below that of the vessels collecting the blood. The veins and arteries then received his attention. The former have very flaccid walls and readily adjusted their cubic space to the amount of blood in transit. The lateral pressure in the systemic veins depended on the obstruction to the inflow to the chest, the hydrostatic effect of the column of blood, and the potential energy transmitted through the capillaries. In the portal vein the pressure was always positive, and in this respect it resembled an artery. Certain observations showed how kinetic and potential energy in every part of the circulation was constantly varying. The blood in the veins was one of the very few things which ran more quickly up the hill than it did down it. After describing the constitution of the arteries he said they were well supplied with nutritive vessels and richly endowed with vasomotor nerves. As the blood left the heart it was largely kinetic. The velocity of the blood in the aorta and pulmonary artery varied, and was directly as the cardiac energy and inversely as the resistance to the outflow and the sectional area. The velocity in the pulmonary artery was nearly equal that of the aorta. A clear comprehension of velocity and pressure in the aorta he believed of great importance in explaining the cause of death in people after the age of 50 years from arteriosclerosis. The most perfect circulation was one with a small difference between the systolic and the diastolic pressure; this difference could be looked upon as that part of the energy which was not stored up in the walls of the arteries and which was engaged in producing velocity. When this difference exceeded 40 mm. of mercury there was something wrong with the elasticity of the aorta and the damage should be repaired. With a continuous lateral pressure of 200 mm. of mercury or more there was no period of repose for the vessels, but merely periods of greater or less distention; there was interference with the circulation in the nutritive vessels, and one got irritative and proliferative changes in the subendothelial layer of the intima if atheromatous and perhaps calcareous degeneration followed, and the elasticity of the aorta became impaired. In proportion to the loss of elasticity the energy of the heart was not stored up, and with the loss in the conservation of energy the heart had

more work to do, and a great disparity arose between the systolic and diastolic pressures. The immediate resistance to the outflow from the heart was not increased, but the total work was greater, the diastolic pressure in the heart arose, and the ventricle dilated and hypertrophied. The output was increased, the velocity was increased, and longitudinal straining occurred. One might now get a difference between the diastolic and systolic pressures of 120 to 130 mm. or more of mercury, then there would be a marked recoil of the heart at the end of the systole, and negative and positive waves in the circulation would obstruct one another. Here storage was defective and the velocity more or less intermittent, and there was an enormous waste of energy. The question of storage formed an important element in prognosis and for this reason aortic regurgitation occurring early in life from a rheumatic lesion was, *cæteris paribus*, very much less serious than a similar lesion arising secondary to degeneration of the aorta. If there was any elasticity left in the aorta and principal branches, there was an advantage in aortic regurgitation in maintaining a relatively high diastolic pressure and well regulated doses of digitalis and squill often did an enormous amount of good. While they increased the peripheral resistance they lessened the size of the ventricle, increased the length and completeness of contractions, diminished the residual blood, and thus lowered diastolic pressure in the ventricles. A brief consideration of arterial blood pressure and the heart concluded the address.

Address in Surgery.—Sir Victor Horsley of London, delivered this address at the evening session, taking as his title "The Technique of Operations on the Central Nervous System." In reviewing the technique and procedure of encephalic operations he considered the essential steps of such operations *seriatim*. The general preparation of the patient was the same as in all operations, and in some instances he found calcium chloride of probable service in cases where oozing of blood from bone or superficial tissues was to be expected. The head and cavities in relation to it should be thoroughly disinfected for two or more days, and the patient placed on the table in such a way that, while the head was elevated to diminish pressure in the venous sinuses, the shoulders were also slightly elevated, so that glottic respiration should not be interfered with. His own experience was confined to general anesthesia. Ether he regarded as inadmissible as an anesthetic in operations on the central nervous system. Chloroform was used and its dose regulated. To maintain the physiological energy of the central nervous system and prevent shock it was necessary to prevent cooling by radiation from the brain exposed in the wound; the wound, therefore, should be constantly irrigated. This tended to arrest capillary and arterial hemorrhage, as well. To control hemorrhage the tying of the carotid should be avoided. He advocated tying all the arteries around the lesion before extirpating it. It was remarkably easy to control capillary oozing and arterial oozing from the brain by the simple means of hot irrigation. The bleeding from the veins and sinuses in bone could be certainly arrested by plugging with wax if the periosteum round the hole was completely removed. Venous bleeding commonly occurring in association with capillary oozing could be controlled by the inhalation of oxygen. One should discriminate between collapse and shock. The former was a temporary accident, in which the patient's nerve centers were capable of being revived by ordinary clinical means; shock was a post-operative condition, which deepened after the operation for a variable period, and which, if it terminated fatally, destroyed life, as a rule, within twenty-four hours. The majority of deaths occurred from a severe degree of shock that could be in part avoided by dividing the operation into two stages, the interval between them being about five days. The first stage consisted of the opening of the skull; the second of opening the dura mater and removal of the lesion. It was the opening of the skull which caused most general depression of nerve energy and most alteration in the circulation. He next considered the method of opening the skull and believed that the bone should be divided with as little vertically applied force as possible, and removed with the least possible pressure on the brain and dura beneath. In speaking of the influence of the region of the skull opened he gave the following: "Motor area," the proportional ratio was 1 death in 27 operations; parietal and post-parietal regions, 1 in 19; frontal region, 1 in 13; temporal region, 1 in 12; cerebellar region, 1 in 10. Therefore it was obvious that more shock resulted from operations below a line drawn from the frontal eminence to the occipital protuberance. The readiness with which the cerebrum and cerebellum became edematous was remarkable, and it was generally believed that this occurred whenever the skull was opened. Its occurrence was clearly associated with unrelieved pressure. Thus, of thirteen cases in which death occurred from shock after the second stage, in seven by reason of failure to diagnose topographically, the pressure was not relieved directly over the seat of the lesions; whereas, in six cases in which a tumor of the brain was diagnosed and correctly localized, but in which removal was not attempted, owing to the size of the growth and other reasons, no patient died. The risk of an operation for decompression was greater if the opening for the relief of pressure was not made directly over the lesion. The treatment of shock must be arranged according to the symptosm which threatened life, the respiratory, the circulatory, and the body temperature. The embarrassment of the respiratory center, with its shallowness of respiratory movement and the typical Cheyne-Stokes respiration, was best dealt with by inhalations of oxygen until the effect of nutrient enemata began to make itself felt, but it was above all in depression of the respiratory center that strychnine was of use in combating shock. The heart did not require accelerating, but, as a rule, feeding, and repeated enemata of beef-tea and pancreatized milk were of service. If time pressed, a small dose of atropine was useful. Alcohol was to be avoided. Strong coffee was good. In certain instances, notably in children, one of the shock effects of operation was the losing of heat control and the temperature, instead of falling, rose and might become dangerous; this should be controlled by cold sponging of the upper limbs. In considering sepsis, in summary, he said he felt inclined to reassert the view expressed in 1886 that the less drainage was employed the better, and consequently that every effort should be made to close the skin wound as early as possible. An analysis of the Queen Square cases brought out the fact that where the technique of intracranial operations failed most was in the treatment of malignant disease. An accompanying table of 55 tumors was of great interest. There were 19 cases of glioma and 4 of sarcoma, a total of 23 cases, with recurrence within two years in 20 cases. There were 8 cases of endothelioma; 1 recurred three years later, the patient dying of valvular heart disease; 7 were alive and well, the longest 5 years. There were 4 tuberculous cases; 2 patients died within 3 months of tuberculous meningitis; 2 are alive and well, the longest 7 years. There were 8 cases of gumma, 4 cases of fibroma, 5 cases of cysts with no recurrences. There were 3 cases of adenoma and adenosarcoma with 1 recurrence. Unfortunately a large number of cases of cerebral tumor were essentially malignant, and by reason of their diffusing through the nerve tissues it was

very difficult to produce a complete and radical cure. Sir Victor thought he was justified in making the following general deductions on the question of surgical treatment of malignant disease of the encephalon: (1) That operation should be resorted to as early as possible; (2) that the tumor should be, if possible, freely exposed and examined and extirpated with surrounding tissue; (3) that if it could not be removed without undue interference with important or essential structures, there remained some possibility of the tumor undergoing retrogression in a certain number of cases.

SECTION ON OBSTETRICS AND GYNECOLOGY

First Day—Tuesday, August 21.

PRESIDENT, DR. A. H. FREELAND BARBOUR, OF EDINBURGH, IN THE CHAIR.

President's Address.—Dr. A. H. FREELAND BARBOUR of Edinburgh said that gynecology held out one hand to the general practitioner and the other to the specialist, more generous perhaps to the general practitioner caring for the growing daughter of the family, but equally at home in the company of the great operators. He dilated upon the relationship of gynecology to the work of the general physician, and said that he feared the student started out with a wrong idea because of the title given to the subject, that of "diseases peculiar to women," instead of being taught to apply to the branch the entire general knowledge of medical pathology. There was no pathological difference between appendicitis and salpingitis; epithelioma of the cervix did not differ essentially from epithelioma of the lip. He thought there was no reason why gynecology should be regarded as a specialty any more than obstetrics. A woman rightly expected to be attended for her gynecological troubles by the same physician who attended her in confinement, and it was then for him to say when she should pass out of his hands into those of the specialist in gynecological work. A man who devoted special attention to any one organ might become recognized as an authority, and was properly to be called in when the general practitioner recognized that he had a case beyond his power of diagnosis or treatment. He had found Canada ahead of the mother country in the teaching of gynecology to the general student, and believed that was the line along which advancement in the work was to be made. He likened the specialty to a peak in a mountain range for which it was necessary to have a broad foundation.

Concealed Accidental Hemorrhage.—Dr. A. H. WRIGHT of Toronto read this paper, which referred particularly to the discussion that took place on the subject of hemorrhage at the meeting of the Association two years ago, and which discussion he advised the younger men to read once or twice a year. The writer dealt particularly with concealed accidental hemorrhage, and believed that many such cases were overlooked, and were much more common really than had been supposed. He believed a large number of the sudden deaths in pregnancy were due to this cause. The symptoms to be looked for were sudden, sharp, cutting pain in the upper uterine zone, followed by continual dull ache, with increasing prostration. With such symptoms, until the uterus was emptied, the patient was in great danger. The writer believed that these symptoms were due principally to shock only, and not to loss of blood. He cited two cases. One was that of a woman of thirty-three years, in her fourth confinement; labor pains commenced at midnight; there was very severe pain at eight o'clock in the morning following, and at nine the woman was in a serious condition of shock, and was delivered at once; death occurred shortly after. The second case was that of a woman of thirty-four years in her third pregnancy; when seven months advanced she was seized with sudden severe pain in the abdomen while out driving; the condition was relieved with morphine and stimulants; four days later labor occurred, and a small clot, such as might have been produced by a pint of blood, was found. In referring to treatment, the writer considered accouchement forcé a very dangerous procedure; that in a case like the second it would have caused death. Friction of the abdomen, electricity, amyl nitrite, dilators, and the vaginal plug he condemned, and thought they should never be employed. He advocated the expectant plan of treatment, treating each symptom as it arose. Not less than a half grain of morphine should be given at first, and not more than one grain in an hour. The patient's head should be lowered and the temperature maintained by artificial heat. High enemata of salt solution should be used and small doses of strychnine, never large doses, which he considered very dangerous.

Dr. A. H. FREELAND BARBOUR of Edinburgh thought the same results could be obtained in many different ways. In Dublin he said the practice was to plug the vagina; in Edinburgh to rupture the membranes.

Dr. J. A. TEMPLE of Toronto said that, aside from the treatment of shock, it was his practice to rupture the membranes and allow the escape of the fluid to enable the uterus to contract better. He would not advocate the delivery of the woman while suffering from shock, nor did he believe in the Dublin method of plugging the vagina.

Dr. W. S. A. GRIFFITH of London, Eng., thought the question suffered by being separated from that of placenta previa, from which it differed very little. He thought it a common condition to a slight degree in the earlier stages of pregnancy, but it was in the later stages that it was dangerous. The principal thing was to empty the uterus, not as quickly as possible, but as safely as possible. Cases of the Braxton-Hicks description were very uncommon, and personally he had never seen one. Dilatation could be done with the fingers, and version and delivery performed easily in most cases. Vaginal section he considered the best surgical procedure. He had never done a cesarean section for the relief of the condition.

Dr. MURDOCK CAMERON of Glasgow thought the cases very uncommon. Everything in treatment, he said, depended upon having skill at hand early, which often could not be had. He thought the proper treatment was to empty the uterus. Plugging the vagina and administering morphine he advocated as a means of dilating the uterus, having counter pressure with a firm bandage. He did not think a cesarean section indicated.

Metrorrhagia from Conditions of the Uterus, other than Neoplastic Formations.—Drs. WM. GARDNER and J. R. GOODALL of Montreal read this paper, dividing the cases into two groups, simple and complicated, and the simple cases into inflammatory and arteriosclerotic. By simple was meant the cases characterized by uncontrollable hemorrhage at the menopause, the uterus alone being involved; by complicated was meant those showing these characteristics, but with chronic disease of the appendages or other organs. The paper treated only of simple metritis, and nine cases were reported, six inflammatory and three arteriosclerotic. The characteristics of the inflammatory group were swollen cells, hyaline protoplasm, vacuolated areas and changes in the connective tissue, widespread swelling of the fibrillæ with just a nucleus here and there, with isolated areas of small, round cells. In the arteriosclerotic type the mucosa was healthy, but there was tremendous fibrosis. Original drawings were exhibited to show these pathological conditions. In six of the cases there was history of retroversion and infection. Subinvolution was an etiological factor in most of the cases. The essayists questioned the theory that all cases were due to infection, but believed that muscular insufficiency was a factor in all cases. Hysterectomy was advocated in all cases of the arteriosclerotic type. They considered the changes in the uterine wall in fibroma of the uterus and inflammatory metritis the same, and that the hemorrhage was due to the same cause.

Dr. A. H. Freeland Barbour of Edinburgh agreed with the authors that the cases of arteriosclerosis were only to be treated by hysterectomy. They showed themselves clinically by hemorrhage, resisting all other forms of treatment.

A Study of a Consecutive Series of 146 Cases of Ventrofixation of the Uterus.—Dr. A. E. Giles of London, Eng., read this paper, which was based upon a series of six tables: (1) Uncomplicated Retroversion, comprising 47 cases; (2) Retroversion with Fixation, comprising 26 cases; (3) Chronic Retroversion and Diseased Appendages, 21 cases; (4) Retroversion with Fibroids, 13 cases; (5) Prolapse of the Uterus, 19 cases; (6) Total Procidentia, 20 cases. Three main points were considered; first, indications for operation; second, technique; third, the after results. As to indications, in the majority of cases in the first group no operation was advisable, as it was a transient condition. In the congenital form pregnancy was the best treatment. Not more than 5 per cent. of this group required operation. The indication would be failure of pessary to produce satisfactory results. The symptoms were backache, leucorrhea, and frequent micturition. The indication in the second class was pain, and these cases were foredoomed to failure under treatment with pessary. Indications in the fourth group were more obvious, there being an indication apart from the displacement. Failures, he thought, were often due to insufficient treatment; curettage should be done at the time of operation; disease of the appendages should be remedied at the same time, as should also cysts of the ovaries, etc. As to the effect on subsequent pregnancies and labors, of 73 cases seen from six months to eight years after operation, 24 forty years of age or over, 49 between twenty-three and thirty-nine, within the child-bearing period, 12 became pregnant, 3 miscarried. Seven went to full term. In no case was there tendency to postpartum hemorrhage. He believed there was slightly increased tendency to miscarriage. In ten of the twelve seen after pregnancy the uterus remained fixed. Ninety-five per cent. of the patients remained well, so far as the position of the uterus was concerned. The general condition was improved in 90 per cent. of the cases.

Dr. Wm. G. Gardner of Montreal said that it was only with the uncomplicated cases that the pessary was of any use. Many operations had been proposed, but none of them, to his mind, was equal to that discussed by Dr. Giles. The ideal result was the establishment of a sort of third ligament from the uterus to the abdominal wall, admitting of a degree of mobility, and yet maintaining the uterus in anteversion. The results of the operation were, of course, variable, and the essayist was to be congratulated on his very excellent success. The great bugbear, he thought, was the sclerotic or cystic ovary, which must be dealt with at the time of fixation. The repair of ruptured cervix and all plastic work in the vagina should be done at the same time. He considered that the operation was not to be blamed for the abortions or miscarriages following, as it was an unhealthy uterus that was operated upon.

Dr. J. A. Temple of Toronto preferred ventral suspension as giving a more normal, mobile position of the uterus. He employed two sutures, as described by Dudley of Chicago, one on either side, forming two normal suspensory ligaments. He believed with Dr. Gardner that the abortions were due to pregnancy occurring too soon after operation, while the uterus was still in an abnormal condition.

Dr. E. C. Dudley of Chicago had performed the operation of uterine suspension over five hundred times, and it was satisfactory, so far as systemic effects were concerned. He thought much of the criticism against suspension, as performed by Dr. Howard A. Kelly, was due to the fixation operation, in which the mobility of the uterus was interfered with. He had come to look upon the suspension operation, however, as not being an anatomical operation, and had lately been doing the operation of Dr. Gillean, somewhat modified in detail, which had given him very satisfactory results.

Dr. D. Tod Gilliam of Columbus, Ohio, said that his operation of internal suspension by the round ligament was not dangerous, as had been claimed by some; in the several thousand cases he had collected nothing of the kind had occurred. He believed with Dr. Dudley that we should do that operation which was most anatomical. Many of the so-called suspension operations were not suspensions, the uterus remaining fixed and immobile, and these patients on coming to pregnancy suffered greatly. In his operation the uterus accommodated itself to the movements of the body, and the results were more satisfactory from beginning to end. During pregnancy the round ligament grew and enlarged with the growth of the uterus, so that there was no impediment whatever to parturition.

Dr. S. M. Hay of Toronto expressed surprise at the essayist not making some distinction between ventral fixation and ventral suspension, the former of which should be reserved for cases beyond the possibility of conception. He believed that, as a matter of routine, curettage should be done, as there was usually a chronic congestion in these cases. His experience had been with fifty cases; in three there had been subsequent displacement. He had opened the abdomen after this operation four times for other purposes, and in each case had found the conditions the same as at time of operation. He thought the uterus should be well anteverted and the suspension made from the posterior wall.

Dr. Bovée of Washington, D. C., had thought that, as to the cases in the first table, retroversions uncomplicated had no symptoms, and that when there were symptoms they were due to complications. As to the distinction between retroversion with fixation and chronic retroversion with diseased appendages, his conviction had been that these cases were due to diseased appendages, and that the diseased appendages were the cause of the fixation. He deprecated the operation of fixation in women past the menopause; he believed that then the uterus should be removed. He considered fixation the substitution of one anatomical deformity for another. Vaginal hysterectomy he believed less dangerous than a ventral fixation.

Dr. A. E. Giles of London, Eng., in closing the discussion, said that the operation performed in his cases was an intermediate operation between a fixation and a suspension The abdomen was opened, a suture passed through the fascia and peritoneum of one side, then through the uterus, and back through the peritoneum and fascia of the other side. Another stitch, and generally a third, was made in the same way, but there was no scarifying. There was fixation to the fascia and muscular layer, and for that reason it had not been called a suspension. He considered that the important point was that the fundus was left free, because it was that part which was most enlarged in pregnancy. Shortening of the uterosacral ligament was an operation which he believed should be done more frequently.

Second Day—Wednesday, August 22.

Changes in Uterine Fibroids after the Menopause, with Special Reference to Operation.—Dr. Chas. A. L. Reed of Cincinnati read this paper, referring particularly to the coexistence of cancer and fibroids; 80 per cent. of all cases, according to the essayist, developed malignancy after the menopause. The writer advocated operative procedures in practically all cases, as the operation for fibroids, he said, yielded a mortality of less than 5 per cent. In operations after cancer had developed there was a primary mortality of 20 per cent., and the ultimate mortality was probably 100 per cent. He thought the following conclusions justified: (1) The only safe place for a fibroid of the uterus is outside the patient's body; (2) the menopause is a poor surgeon; (3) certain cases should be operated upon without regard to the menopause, as tumors of rapid growth, or when, by pressure, they interfered with the circulation of blood or the secretion of urine, or became the site of suppuration or malignancy; (4) the only cases in which there should be hesitancy as to operation were those in which there was no pressure or hemorrhage or which had

ceased to grow; (5) patients who chose to adopt a waiting policy should be advised of the danger, and should be examined at frequent intervals.

Dr. J. F. Ross of Toronto was sorry to hear the writer of a textbook draw his conclusions so rigidly. He thought there were a great many of the younger operators who sacrificed the lives of women by operating for small fibroids. He did not think the uterus should be removed simply for fear that cancer might develop. In many cases in which cancer develops, he believed it would develop whether the fibroid were present or not. He desired to protest against the rigid conclusions of the essayist.

Dr. Byford of Chicago disagreed with the essayist, and thought that the changes after the menopause that produced trouble were few. Many women, he said, died with fibroids without their ever having been suspected. He did not advocate operating at the menopause unless the tumor was growing rapidly.

Dr. Reid of Glasgow had watched fibroids for thirty years, such as one would now wish to operate upon, and he believed that if at the menopause a woman had a fibroid which was not very large, and which did not give distinct evidence of change in the way of growth, it was wise to let it alone. If, however, it continued to grow, it was unwise to postpone operation.

Dr. Murdock Cameron of Glasgow had never seen tumors disappear after the menopause, and did not believe in such a thing. There were tumors that tended to disappear under dissolving treatment, but they were not fibroid. He considered the most important question was that of diagnosis, which was not an easy matter. He believed that when the diagnosis had been made, the fibroids should be removed, unless there was some contraindication, as it was impossible to know what degenerative changes might take place in such tumors.

Dr. Wm. Gardner of Montreal reported a case of a woman with large fibroids, who married and passed through three confinements without complication or difficulty.

Dr. Marcy of Boston agreed with every one of Dr. Reed's conclusions. The secondary changes that occurred in these tumors were a menace. He had recently operated upon a patient with fibroids who was seventy years of age, showing that even at this advanced age the operation was not exceptionally dangerous. The years in front of such a patient, he said, were wearisome and without pleasure, and he agreed with the essayist that operation should be done early, especially in view of the fact that the mortality was less than 4 per cent.

Dr. Evans of Montreal cited a case in which he knew the tumor had disappeared. The patient, a woman of thirty, with a large myoma, was examined at frequent intervals for several years, and the tumor gradually disappeared, and she had since been delivered three times.

Dr. W. S. A. Griffith of London, Eng., said that it had happened to him twice in the last year to have to remove fibroids from women over seventy-one, and both were calcified tumors. He believed that the disappearance of fibroids after the climacteric was as certain as anything in medicine, and he entirely disagreed with Prof. Cameron on this point. Of course, when the fibroids increased in size it was necessary to remove them; otherwise they should be let alone.

Dr. Joseph Price of Philadelphia considered that fibroids were pathological and retrograde from their very inception, and that the patients were never well mentally, to say nothing of their other troubles. It would be impossible, he said, to exaggerate the multiple changes that occur in association with fibroids. He believed that the modern late marriages favored the occurrence of these tumors. He believed that all fibroids should be removed, and that when removed early, and in a good subject, the mortality was about *nil*. He expressed disappointment that there was such a divergence of opinion on the subject.

Dr. A. H. Freeland Barbour of Edinburgh agreed with the last speaker, and thought that every case must be considered on its own merits.

Dr. Reed, in closing the discussion, said that he believed that he was absolutely justified in saying that good results were always to be accomplished by reasonably competent operators in the uncomplicated cases. That there were incompetent operators should not deter one. He thought that those who simply showed in their discussion a general dissent seemed to affirm that a fibroid was not a dangerous thing and should be left alone, and that the menopause was a good surgeon. He thought that they had not given as much thought to their dissent as he had to his conclusions.

Indications for Cesarean Section.—Dr. H. L. Reddy of Montreal read this paper, the aim of which was to bring out a discussion as to whether or not the operation was justified for conditions of eclampsia and placenta previa. He thought that the operation should not be looked upon as a forlorn hope, but as a comparatively easy operation. He had known it to be done in a backwoods village by a country doctor twice on the same subject. He had operated fourteen times with one fatality. He advocated its performance much more frequently than it was done at present, and believed it to be the operation of election in certain cases of eclampsia and placenta previa. He said that symphyseotomy should be mentioned only to be condemned, as the integrity of the pelvis should not be interfered with when one could not be certain of the results.

Dr. A. McDermid of Chicago had twice done the operation for pelvic deformity, and with gratifying results, in saving the life of both mother and child. It was by no means a difficult operation. Within the past few months he had read a paper before the Chicago Gynecological Society, advocating the operation in placenta previa. There was less hemorrhage, he said in a cesarean section than in an ordinary case of labor. He also agreed with the essayist that in eclampsia it would afford the patient a better chance. He desired to emphasize the essayist's views as to symphyseotomy.

Dr. P. E. Truesdale of Boston added his testimony in support of the essayist's position. In 1903 he had read a paper before the Boston Obstetrical Society, reporting a case of cesarean section for placenta previa, and had been much criticised at that time. In this case there had been very little hemorrhage; time was allowed for contraction to take place, and when the placenta was removed only about a half ounce of blood was lost. As to technique, he advised against placing a ligature around the cervix, as it tended to cause a paralysis of the nerve supply and produce subsequent hemorrhage. He believed that in primiparæ in all cases of central implantation, and in many cases of marginal implantation, there was greater safety in this operation than in delivery through the vaginal route.

Prof. Murdoch Cameron of Glasgow had performed one hundred cases of cesarean section in the last eighteen years. He desired to say, however, that he had never seen a death from placenta previa. It was his experience that the os relaxed very easily in these cases and that there was no trouble in delivering. Therefore, he would hesitate to perform a cesarean section for this condition. In eclampsia it was different, and he saw no objection to the operation in a bad case.

Dr. W. S. A. Griffith of London, Eng., had had thirty-six cases, and had done the operation once for placenta previa. He was inclined to think that the only justification for the operation in eclampsia would be in the interest of the child; he could not see that it would be in the interest of the mother. It might also be performed in cases of cancer that were too far developed for hysterectomy to do any good. In cases of heart disease he doubted if the operation offered any advantages, as death was about as liable to occur after delivery in these cases as before.

Dr. Wm. Gardner of Montreal referred to hyperemesis gravidarum, where it was necessary to empty the uterus, and advocated vaginal cesarean section in such cases.

Dr. Reddy, in closing the discussion, said that it was his experience that in nine cases out of ten the placenta was attached to the anterior segment of the uterus, and so the hemorrhage was easily controlled. He believed the operation preferable to the vaginal cesarean section because of the lack of asepsis in that operation, and he would hesitate to do a vaginal cesarean section for hyperemesis gravidarum.

The Value of Conservative Treatment of the Ovaries, with Special Reference to Operation.—Dr. Joseph Price of Philadelphia read this paper. He said that after a quarter of a century of experience in pelvic surgery he was not yet convinced that the so-called conservative surgery for tuboovarian disease had any value. One could not overestimate the postoperative mischief following the attempts to save a piece of the tube or ovary. It had become fashionable, however, to do this so-called conservative surgery, though many patients had lost their lives from the sequelæ of such attempts. As to the usefulness of such operations, he believed it impossible, in amputating a tube, to leave it patent and functionating. He said that the efforts to correct the sequelæ of conservative operations on the tubes and ovaries had shortened his life. Most operators, he said, admit that from 80 to 90 per cent. of the cases was due to gonorrhea; that if one could blot out gonorrhea one would blot out gynecology, unless the sequelæ of bad obstetrics might keep it alive for awhile. In these cases of salpingitis and ovarian degeneration, then, it was folly to preserve an eighth of an ovary with the idea of conserving the reproductive function. He had done it hundreds of times, and not a single conception had ever resulted. Very rarely had conception occurred after multiple punctures. He could not, in the light of these sequelæ, see that such resections were justifiable. Most of the cases wound up in rest cures and asylums. He believed that the best operators were no longer urging such procedures.

Dr. F. F. Lawrence of Columbus, Ohio, thought it was in the idea that conservative surgery was for conception that the danger lay, as extrauterine pregnancy followed readily any destruction of the lining of the tubes, and it frequently followed the attempts at so-called conservative surgery of the tubes and ovaries. If it did not conserve the patient's safety in the present and in the future, he could not see that it was conservative surgery at all. He doubted if there was ever extrauterine conception except when there had been bilateral infection, and he believed that both tubes should be removed.

Dr. W. P. Manton of Detroit had been doing conservative surgery for ten years, following Dudley's work, and in 100 cases of conservative surgery of the appendages, which he had been able to follow, there had been but three return for operation. In 64 cases, careful bimanual examination at different times failed to show any pathological condition, and of these 64, 14 per cent. subsequently conceived. He thought there were many cases where resections should be undertaken and where the results would be eminently satisfactory. He maintained that one gets no more adhesions or subsequent suffering with conservative operations than when total extirpation is performed.

Lantern Demonstration of Degeneration in Uterine Myomata.—Dr. Thos. S. Cullen of Baltimore, Md., gave this exhibition, which consisted of over a hundred slides, showing almost every phase of pathological degeneration of uterine myomata. At the close of the demonstration, Dr. Cullen also showed the abdominal contour of a patient from whom an 89-pound myoma had been recently removed, the patient herself weighing but 85 pounds. The woman made a good recovery.

"A Catheter should be kept tied to the handle of every pair of obstetric forceps." By this statement a well-known teacher of obstetrics intended to impress upon his hearers the necessity for emptying the bladder before the instrument was introduced into the vagina.

THE AMERICAN GASTROENTEROLOGICAL ASSOCIATION.

Ninth Annual Meeting, Held in Boston, Mass., June 4 and 5, 1906.

The President, Dr. H. W. Bettmann of Cincinnati, in the Chair.

The Mutual Obligations of the Surgeons and Internists in the Proper Development of Gastric Surgery.—In this, the President's Address, Dr. Bettmann said that all surgical operations must be based on three factors: 1. The prognosis under medical treatment; 2. The immediate result of the operation; 3. The ultimate result of the operation. The internist must decide the first, the surgeon the second, and both the third factor. To find the truth, the sincerest co-operation was necessary. After referring to the fact that the practice of gastroenterology had been revolutionized during the past thirty years, both as regarded accuracy of diagnosis and directness of therapy, Dr. Bettmann said that the general practitioner had not kept pace with these advances, and that, as a result, many patients went from bad treatment to surgery. The surgeon should ask the patient not how long he had been treated, but how well. In referring to the statistics of various operators for the relief of cancer of the stomach, the speaker said that surgical conclusions should not be plucked before they were ripe.

Remarks on Banti's Disease (Splenomegalia and Cirrhosis of the Liver).—Dr. Max Einhorn of New York read this paper (see page 329).

Dr. J. Kaufmann of New York City said he thought the symptom complex given by Banti was at best not a very well defined one, and we should be very careful about applying it to cases, even if they did show some of the symptoms or a combination of the symptoms named by him.

Dr. I. Adler of New York City said that before making the diagnosis of Banti's disease, the complete syndrome must be present. It should be remembered that in Banti's disease there was a primary enlargement of the spleen, besides a rather peculiar blood picture.

Dr. A. L. Benedict of Buffalo said the very fact that the so-called Banti's disease was so rare militated against its being a clinical entity, because, according to the laws of chance, any symptom complex that was a clinical entity and not a mere coincidence must occur fairly frequently.

Dr. J. C. Hemmeter of Baltimore said that the most extensive account of the Banti syndrome was by Osler, who had reported the largest number of cases. In referring to the primary splenomegaly, the speaker said that in two of Osler's cases removal of the spleen cured the patients.

Dr. Einhorn, in closing, said that the cases he had reported presented certain symptoms. Whether we called them Banti's disease, or something else, was immaterial. In Banti's own description he included only those cases in which there was a benign tumor of the spleen of enormous size, together with enlargement of the liver, anemia and ascites. The cases ended fatally, unless the spleen was extirpated in the primary stage.

The Reflexes Controlling the Peristaltic Movements of the Esophagus.—Dr. S. J. Meltzer of New York City read this paper, in which he reported a series of experiments bearing on this subject.

Achylia Gastrica, with Report of Cases.—Dr. Franklin W. White of Boston read this paper, in which he reported a series of cases of simple achylia gastrica, illustrating its not infrequent occurrence as an independent condition, apart from gastric cancer or chronic gastric catarrh. In 183 cases of disease of the stomach, there were forty-one cases with less than normal acidity, and in nine of these there was an absence of all elements of the gastric juice, a condition of achylia gastrica; seven were primary cases, and two were secondary to chronic gastric catarrh. These cases were important because of their relative frequency (nearly 5 per cent. of this group of cases) and because of

the resemblance of some of them to gastric cancer. It was important to recognize their frequency because of the modern tendency to advise exploratory laparotomy in all cases which resembled cancer. The symptoms were not characteristic. The diagnosis was made chiefly from the physical examination of the patient, the gastric contents, and the feces. The condition of achylia persisted during the whole period of observation, from one to two years, in all but one case. In this one a return to the normal gastric secretion occurred, and had persisted up to date. It was often difficult to distinguish simple achylia from the early stage of cancer, or from well-developed cancer without stasis. The character of the stomach contents, the absence of occult blood in the stools, the absence of cachexia, and the permanent gain in weight under treatment, were the most valuable points in diagnosis. The chief indications for treatment were to improve the patient's general condition by hygiene, rest and tonics, to compensate for the loss of gastric secretion, and to protect the motor functions of the stomach. In most cases, diet without drugs was sufficient.

Dr. JOHN A. LICHTY of Pittsburg said there was one point in regard to which he differed with Dr. White, namely, the ease of recognizing achylia gastrica. It was a comparatively simple matter to make the diagnosis of achylia, *i.e.* an absence of gastric juice, but the diagnosis of achylia gastrica was not made so readily. Some of these cases followed a very peculiar course. The absence of gastric juice would at times follow a nervous shock or intense grief. Based upon a gastric analysis, we would call such a case achylia gastrica, but if followed up it would be found that the loss of the gastric secretions was only temporary.

Dr. J. KAUFMANN said he could confirm the statement of Dr. White that achylia gastrica was not an infrequent condition. The speaker thought we could understand the condition better if we did not speak of achylia gastrica as a disease *per se*, but merely as a symptom. It was a functional disturbance, which might be associated with many different conditions of the stomach.

Dr. WHITE, in closing, said that while in the majority of cases of achylia gastrica the diagnosis was comparatively easy, there was a minority in which it was very difficult indeed.

Hypersecretion, Associated with Cirrhosis of the Liver.—Dr. HENRY F. HEWES of Boston read this paper. He stated that the occurrence of disturbance of the stomach among the clinical manifestations of diseases of the liver and its appendages was a well-recognized phenomenon. In connection with this subject he reported three cases of gastrosuccorrhea or hypersecretion of the stomach occurring in association with disease of the liver, two in association with atrophic cirrhosis, and one in association with gallstones. The cases were of special interest in connection with the study of disturbances of the stomach, owing to the fact that in all the hypersecretion was the prominent feature at the time the cases first came under observation; in fact, in two of the cases it was so exclusive a feature that they would both have been considered as cases of hypersecretion of the stomach, pure and simple, of unknown cause, had not findings made at a later date revealed the presence of liver disease.

The Relation of the Kidneys to Gastroenterology.—Dr. A. L. BENEDICT of Buffalo, N. Y., in this paper discussed at length various renal conditions, and their apparent relation to alimentary disturbances. He stated that while almost any disease of any part of the body might occasionally produce or be accompanied by some definite disturbance of digestion, or call for special attention to diet and metabolism, the following partial classification of renal conditions was suggested as pertinent: 1. Mechanical influences, such as movable kidney, calculus disease, and urinary obstruction. 2. Chemic and allied influences, including acute and chronic nephritis, renal paresis and paralysis, polyuria, and urinary abnormalities secondary to digestive and metabolic disturbances without strict renal disease. The speaker referred to the significance of the relatively large number of cases of movable kidney he had encountered in digestive practice, and in the statistics he had collected he had considered as movable kidney only those cases in which the organ showed an unmistakable, palpable change of position, beyond anything that could be ascribed to elasticity of the abdominal wall. In his cases, no significant association with any particular digestive disease had been demonstrated, certainly not with inflammation of the appendix, nor with genuine gastroptosis. Among many hundred cases he had met with only two cases of hepatoptosis, and he had not been convinced of a typical general splanchnoptosis. He had found very few cases of movable kidney in a series of two or three hundred children, ranging in age from early infancy to puberty. In the correction of movable kidney, nephropexy often failed signally, and there was, perhaps, danger in cutting, even with needle wounds, excretory tubules. In many cases, the gastric symptoms associated with movable kidney seemed purely reflex, the physical and chemical examination of the stomach resulting negatively.

Dr. JOHN A. LICHTY said that since 1878 he had examined 4,778 cases. Among this number he had included a number of children, as well as other patients who were not suffering from gastrointestinal disturbances, and among the entire number he had found 809 cases of movable kidney. The speaker said he agreed with Dr. Benedict that splanchnoptosis was not a very frequent condition, even in association with prolapse of the kidney. The latter condition was far more frequently met with in the female than in the male, and seemed to be limited to the neurotic type of women, who were always below the normal standard of health. He had in mind one family where the condition existed in the mother and two or three of the daughters.

Dr. MAX EINHORN said he thought the recognition of the various ptoses of the viscera depended largely on what the individual regarded as a ptosis, and how the examination was made.

Dr. BENEDICT, in closing, said he thought the subject of the causation of movable kidney was a very complicated one, and he was convinced that the usual causes to which it had been assigned, such as tight lacing, etc., had very little to do with it. He looked upon it as a developmental defect. In several of his cases, the patients were born prematurely, although it was very difficult to gather statistics along that line.

Professor Fisher's Method of Estimating the Percentage of Proteids, Fats, and Carbohydrates in the Food.—Dr. A. L. BENEDICT gave a demonstration of this method.

The Gastrointestinal Disturbance Associated with Migraine.—Dr. JOHN A. LICHTY of Pittsburgh, Pa., said that in a paper read before this association in 1903, he reported 73 cases of migraine studied with reference to the associated digestive disturbances. Since then he had been able to add 108 to his list. Of the 181 cases, 155 were females; 26 males. One hundred and sixteen gave a distinct hereditary history. Ninety had a prolapse of one or more of the abdominal organs, most frequently of the right kidney. One hundred and thirty-seven gave a definite history of digestive disturbances between the attacks. The symptoms were definite, such as heaviness after eating, pyrosis, fermentation and gas, constipation or diarrhea. In 101 of the cases, in which gastric analyses were made, 25 had a normal secretion of gastric juice, 32 had an excessive secretion (hyperacid), and 44 had deficient secretion (hypoacid). Many showed the evidences of chronic gastritis and enteritis. A few gave the history and had the clinical evidences of chronic ulceration of the stomach. In correcting these abnormalities, very satisfactory results were often experienced. Dr. Lichty said he had for some years abandoned all the so-called specific treatment of migraine. There were two remedies, however, which he used

almost as a matter of routine when the removal of the reflex and exciting causes was impossible, or did not accomplish the desired results. They were the bromides and the various preparations of cannabis indica.

Influence of Rest, Exercise, and Sleep on Gastric Digestion.—Dr. Julius Friedenwald of Baltimore, in this paper, gave a brief review of the literature on the subject, which indicated that the results obtained by various observers were so conflicting that the question required further investigation. For that reason, certain individuals, two with normal digestive powers and eight suffering with various gastric disorders, were the subjects of this investigation. The individuals were examined after resting, after moderate exercise, excessive exercise, and after sleeping. From these observations, the following conclusions were reached: (1) In persons with normal digestive powers it made but very little difference whether the individuals rested, exercised, or slept after meals. (2) In patients suffering with superacidity and subacidity, it was best to rest after meals. (3) In patients suffering with motor disturbances of the stomach, it was best to prescribe moderate exercise after meals.

Appendicitis Larvata.—Dr. Alfred D. Kohn of Chicago, Ill., read a paper on this subject. He stated that Ewald, in a paper presented before the Congress of German Surgeons, in 1899, was the first to throw light upon this subject. He reported a number of cases which he termed, collectively, "appendicitis larvata," or masked appendicitis. None of the patients gave a history of appendicitis, yet a careful physical examination made it possible to diagnose chronic, subjectively unnoticed appendicitis, careful palpation disclosing a thickened, swollen mass in the region of the cecum. Dr. Kohn said that while no claim could be made that appendicitis larvata was a disease for itself, and with the full knowledge that it was merely a name for unrecognized chronic appendicitis, yet it was necessary to know that there were many atypical forms of appendicitis, the failure to recognize which was often responsible for the death of a patient who might otherwise have been saved by a correct diagnosis and operation. We were all too prone to call diseases we could not understand "nervous" diseases, for want of a better term. Appendicitis larvata and cholelithiasis accounted for many so-called nervous dyspepsias, and perhaps, as our knowledge broadened, we might account for the rest. The symptoms of appendicitis larvata were manifold, varying from attacks of simple indigestion to severe attacks of diarrhea. The stomach symptoms were especially prominent in the young. Attacks of belching or pain at irregular intervals after eating, alternating with freedom from gastric distress of any kind, in spite of the most liberal diet. Diarrhea was also a very common symptom, especially in the morning, with freedom from the same during the rest of the day.

Dr. Benedict said that personally he believed there was such a thing as typhlitis. The fact should always be borne in mind that the appendix was really an unexpanded portion of the cecum, and there were many cases of chronic inflammation of the bowel in which the appendix was taken out and the symptoms still persisted. If we had to deal with a typhlitis, we would not cure the condition by removal of the appendix.

Dr. S. J. Meltzer of New York City, while admitting that there were cases of so-called masked appendicitis which might be termed appendicitis larvata, said the fact should not be lost sight of, however, that if an abdominal pain disappeared after an appendectomy, it should not be taken for granted that an appendicitis had existed. There were certain conditions, such as tuberculous peritonitis, in which an exploratory operation was apparently beneficial, but we were still ignorant of the true significance of an exposure of the intraabdominal organs. The profound effects of such a procedure were well shown in the experimental work on rabbits, which was now being carried on. In the class of cases reported by Dr. Kohn, it was possible that not the appendix alone was responsible for all the reflex symptoms, but rather that it was only one link in a long chain. The speaker also again called attention to a method which he had found of great assistance in palpating the lower abdominal organs, namely, contraction of the psoas muscles. In some cases of appendicitis and sigmoiditis, another helpful sign was the referred pains, which, as a rule, were confined to the side where the lesion was located.

Dr. John A. Lichty said it was often difficult to decide whether to advise operative interference in cases of right-sided abdominal pain where the lesion was of a doubtful character.

Gastric Ulcer in Childhood.—Dr. Harry Adler of Baltimore, Md., reported a case of gastric ulcer in a girl of eight years, and referred to the comparative rarity of this condition in childhood, according to post-mortem statistics. In 390 autopsies at the Baby's Hospital in New York, Martha Wollenstein found five cases of gastric ulcer. Holt reported three cases accompanying follicular gastritis, and five accompanying general tuberculosis. As to its occurrence clinically, Booker, Rotch, Griffith, Louis Starr, and Koplik had never seen a case that they recognized. Koplik reported one case seen at autopsy, accompanying empyema. Jacobi stated that it was not uncommon in children from seven to thirteen years. Fenwick recognized five varieties of gastric ulcer: Hemorrhagic erosions, follicular ulceration, tuberculous, malignant and simple ulcers; the last might be either acute or chronic. As regarded the symptoms, hematemesis was the most prominent, and was noted in 40 per cent. of the cases in which histories were obtained. The blood was bright red, and varied from a few streaks in the vomited material to considerable amounts. In four acute cases it was the immediate cause of death. The diagnosis depended largely on the presence of blood in the vomit or stool, but care must be taken to eliminate the many other causes of hematemesis and melena. In infants, the blood might arise from the gums, nose, throat or lungs, and be swallowed, followed by vomiting. Blood might be sucked from the breasts of the mother, or, in neonats, had been swallowed during parturition. True hematemesis might arise from a number of causes other than ulcer. It had been observed in purpura, hemophilia, scurvy, and similar diseases in which there was a tendency to bleeding from any of the tracts. Cirrhosis of the liver, a not very common condition in children, might give rise to it. In malignant forms of the exanthemata, notably measles and variola, it was likely to occur. The speaker said he had seen it in a case of influenza. Other causes were corrosive poisoning, severe retching (as might occur in pertussis), and traumatism due to swallowing of foreign bodies.

Dr. Max Einhorn of New York mentioned a case of gastric ulcer in a girl of twelve years, who made a good recovery under the rest treatment.

Recent Studies in the Diagnosis of Gastric Ulcer.—Dr. J. C. Hemmeter of Baltimore, in this paper, referred to points of differentiation between gastric ulcer and carcinoma, gastralgia nervosa and cholelithiasis, and spoke of the similarity of the objective and subjective signs and symptoms in some of these conditions. As an aid to diagnosis, he mentioned the value of the detection of occult hemorrhages by examination for blood in the feces. He also detailed a number of experiments on animals demonstrating the feasibility of producing lesions of the gastric mucosa, which could be made visible to the *x*-ray by first feeding the animal with a suspension of bismuth subnitrate. He also referred to Dr. Murdoch's method of administering orthoform as a valuable aid in differentiating between the pain due to gastric ulcer and that originating from gall stones. The drug would usually have a prompt effect in relieving the pain in the first condition, but was of no avail in cholelithiasis. In reply to the question of whether gallstones were visible by the *x*-ray, Dr. Hemmeter said they had given the method a trial, not only in subjects who had

gallstones, as shown by operation, but also with gallstones outside the body, and the results were entirely negative.

The Subsequent History of Thirty-two Cases of Chronic Gastric Ulcer Previously Reported.—By Dr. F. H. MURDOCH of Pittsburg. Of these patients, two had since died, one from aneurism of the aorta, another from hemorrhage from a recurrence of the ulcer. Of the remaining thirty cases, twenty were permanently cured, four were much improved, three were not improved, and three had not been heard from.

Dr. G. W. MCCASKEY of Fort Wayne, Ind., said that in a paper which he had recently read on this subject he made the assertion that in about 80 per cent. of all cases of gastric ulcer, surgical treatment was not called for from any point of view. In the remaining 20 per cent. there was a certain proportion in which surgical intervention should be advised. The speaker said he did not believe—contrary to what appeared to be the prevailing opinion among surgeons to-day—that a gastric ulcer was any more completely or permanently cured by gastroenterostomy than by medical treatment. That point remained to be proven by the surgeons.

Dr. MURDOCH, in closing, said that in the treatment of gastric ulcer by surgical methods, it was entirely useless to do a gastroenterostomy unless a stenosis of the pylorus existed. The experiments of Dr. Cannon had shown that, notwithstanding the presence of the artificial opening, the food would still continue to pass through the pylorus.

Demonstration of Gastric and Intestinal Movements.—By Dr. WALTER B. CANNON of Boston. For the purposes of this demonstration, which was given in the Physiological Laboratory of the Harvard Medical School, a cat had been anesthetized, and after the destruction of its spinal cord up to the neighborhood of the phrenic nuclei, the animal was immersed in warm physiological saline solution, and the abdomen opened. Gastric peristalsis, segmenting movements in the small intestine, and antiperistalsis of the proximal part of the large intestine, could thus be directly observed and studied. The method of demonstration was that of Bayliss and Starling. Dr. Cannon said the antiperistaltic movements continued so long as there was food entering the colon. They passed over the colon whenever a new mass of food entered the large from the small intestine.

Spontaneous Rupture of the Colon from Violent Peristalsis, with Report of a Fatal Case.—Dr. G. W. MCCASKEY of Fort Wayne, Ind., related the case of a woman, 42 years old, who gave a history of chronic constipation and headaches, associated with disturbances of the digestive tract. Her symptoms, which were of long duration, gradually increased in severity. At times, the peristaltic waves could be distinctly seen through the abdominal wall. A laparotomy was done, which revealed nothing abnormal in the abdominal cavity. In the pelvis, a diseased ovary and tube were found and removed. Several months later, during which period the patient had been fairly comfortable, she partook of an unusually full meal one evening, which was followed by indigestion. On the following morning, while she was not undergoing any exertion, she was suddenly seized with a violent pain, and rapidly went into collapse and died. Her death proved to be due to a rupture of the splenic flexure of the colon, through which the intestinal contents had escaped. There was some narrowing of the colon, but no evidences of a neoplasm.

Dr. A. L. BENEDICT referred to a rather unusual cause of rupture of the gut that had come under his observation. In certain foundries where radiators were manufactured, air blasts at high pressure were employed, and he recently saw an autopsy performed on a man who had been subjected to this high pressure through his clothing. The air-blast had entered the rectum and produced a rupture of the bowel at the lower part of the splenic flexure, with fatal results. Two similar cases had been reported in the lay press, one from Chicago, the other from a small town in New York. In all three instances the lesion was fatal, and in all the air was turned against the anus as a practical joke, without criminal intent.

Dr. S. J. MELTZER said that cases of the type reported by Dr. McCaskey had been described in literature, and in seeking an explanation for them it was not necessary to invoke the aid of an organic lesion. A small section of the gut into which a certain amount of air or fecal matter was compressed by two opposing forces, must rupture if the pressure was not relieved, and that could occur without the presence of an anatomical lesion.

Dr. MCCASKEY, in closing, said he could not speak positively regarding the narrowing of the gut in the case he had reported. Possibly, it was a congenital condition. The only thing that could not be excluded was a degenerative process of some sort; to discover that it would have required a histological examination, which was not permitted.

Habitual Constipation Viewed from the Standpoint of Modern Evolution of Dietetics is a Physiological Phenomenon.—Dr. C. D. SPIVAK of Denver read this paper

(See page 335.)

Dr. MAX EINHORN said that Dr. Spivak had referred to good teeth, slow eating, etc., as causes of constipation. Personally, he did not think they could be regarded as real etiological factors, because it was no doubt originally intended that the human being should have good teeth. The reason why so many people had to depend on false teeth was that they were brought up on a faulty diet, and did not make enough use of their natural teeth.

Dr. S. J. MELTZER mentioned the case of a man whose bowels sometimes moved only about once every four weeks; this had continued for years, and he had apparently suffered no ill effects therefrom.

Dr. G. W. MCCASKEY said he could not quite follow Dr. Spivak to his ultimate conclusions. He thought there was a good physiological reason for expecting an emptying of the bowels once a day, although he did not wish to imply that a failure to do this would be followed by serious consequences. We might meet with remarkable instances of constipation, like the one mentioned by Dr. Meltzer, where the failure to empty the bowels was apparently not followed by any untoward symptoms, but the average individual took his food three times a day, and under strictly physiological conditions that food would serve its purpose, and its indigestible residue would be ready for expulsion in about twenty-four hours. The too long transit of the food through the intestines gave more opportunity for the production of toxins, which were undoubtedly the cause of many of the chronic ailments to which the human race was subject. The diet of our day was undoubtedly conducive to constipation.

Dr. JOHN A. LICHTY referred to the interesting experiments of Pawlow on the glands and ferments of the digestive tract, which strikingly showed the delicate arrangement of the glands, especially in the first portion of the bowel. The speaker thought it would be a good idea if Pawlow's deductions were printed and pasted on every pill box and package that came from the manufacturing chemist. It would at least impress upon the physician the enormity of his offense when he disturbed the delicate mechanism of that region by the indiscriminate use of purgatives, etc.

To Prevent Germs in the deeper layers of the patient's skin from contaminating operation wounds Herff recommends the following procedure: The skin is anointed with a 1 per cent. iodine ointment in vaselin to which enough potassium iodide has been added to make the iodine soluble in water. Wherever fluids penetrate the film of vaselin they come in contact with the iodine, the antiseptic properties of which are well known. The protection may be made still greater by preliminary painting of the skin with 10 per cent. solution of iodine in alcohol.

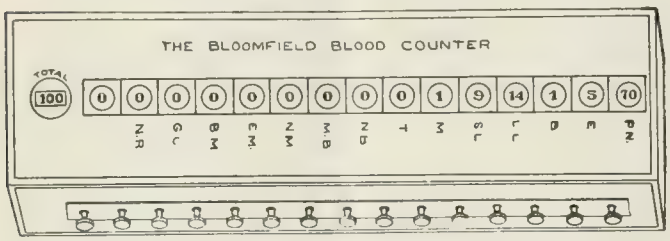
New Instruments.

A NEW HEMATOMETER.

By M. D. BLOOMFIELD, M.D.,

NEW YORK.

I BEG to present to the profession this hematometer, which counts the red and white blood corpuscles, also their different varieties, giving below the sum total of the reds and whites respectively. It is a very simple mechanism, consisting of a set of disks which are numbered consecutively to the highest average number of each particular variety. As soon as the total comes to 100 the bell rings and the differential count can be read right off. For convenience, the slip containing the classification can be easily changed if desired to correspond with the one usually followed by the examiner. The instrument, made by George Tiemann & Co., is well shown in the accompanying illustration.



The instrument is 8 inches in length and weighs about 9 ounces; is absolutely accurate, portable, and durable, and requires no skill nor technique in its use. As each number is turned up a click is heard, and the decided inconvenience of withdrawing the eye from the microscope to jot down the figure, or the necessity of having an assistant to mark down the figures, is overcome. For the busy microscopist this instrument, I hope, will prove invaluable.

BROADWAY AND ONE HUNDRED AND THIRTY-EIGHTH STREET.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending August 25, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	589	151
Diphtheria	158	14
Measles	51	7
Scarlet Fever	46	1
Smallpox	3	—
Varicella	4	—
Typhoid Fever	101	22
Whooping Cough	27	8
Cerebrospinal Meningitis	9	10
Malarial Fever	.....	.....
Totals	988	213

The Clinical and Pathological Importance of Chronic Pancreatitis.—A. W. Mayo Robson states that the relation of the pancreas to diabetes is now generally recognized. However, to wait until glycosuria develops before making a diagnosis is to throw away the patient's only chance of recovery. In nearly all cases, if treatment is instituted early enough, the patient may be restored to perfect health, and a fatal, lingering illness will be avoided. Pathological changes may originate in any of the constituent parts of the pancreas. The effects on the anatomy and functions of the organ will vary, according to the structures which are primarily affected and the nature of the change. Histologically the results of chronic inflammation of the pancreas may be divided into three classes: chronic interstitial interlobular pancreatitis; chronic interstitial interacinar pancreatitis; and cirrhosis of the pancreas. The writer then discusses the etiology of this affection. The onset of the disease varies with the cause. If it is due to obstruction of the common duct by a gallstone, there will be painful attacks in the right hypochondrium, associated with jaundice and possibly with fever of an intermittent type. In certain cases a swelling of the pancreas is noticed, due to enlargement of the head of the gland. Though usually present, pain and tenderness may be little marked, although sometimes the suffering is severe. Jaundice is not necessarily present at first. Dyspeptic disturbances are constantly associated with affections of the pancreas. In many cases of pancreatic disease excessive wasting is a prominent symptom. The frequent, bulky, soft, white motions, so typical of advanced pancreatic disease, owe their bulk partly to the abnormal quantity of undigested material, and partly to the excessive fermentation. A useful diagnostic point is the presence of alimentary glycosuria. In many pancreatic affections there is a tendency to general hemorrhage from wounds, or from mucous surfaces, and to petechial hemorrhage in the skin, or to more extensive bleeding in the subcutaneous tissues. There is often a considerable degree of anemia noticed in these cases of chronic pancreatitis. The diagnosis of this disease is not usually very difficult, although no one symptom can alone be relied upon as diagnostic. The prognosis of chronic interstitial pancreatitis surgically treated is very favorable if the case is taken in time. A marked hemorrhagic tendency generally heralds the near approach of a fatal termination. Preventive treatment is most important. Rational treatment should aim at the cause, whatever that may be.—*The Edinburgh Medical Journal.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending August 25, 1906:

			CASES.	DEATHS.
SMALLPOX—UNITED STATES.				
Illinois, Chicago	Aug	11–18	2	..
Louisiana, New Orleans	Aug.	4–18.	14	..
Oregon, General	July	1–31.	11	..
Tennessee, Knoxville	Aug.	4–11.	1	..
Utah, General	July	1–31.	32	..
Wisconsin, Appleton	Aug.	11–18.	1	..
SMALLPOX—FOREIGN.				
Africa, Cape Town	July	7–14	2	..
Brazil, Bahia	June	30–July 28.	15	..
Rio de Janeiro	July	1–8.	1	..
" " "	July	22–29	2	1
Chile, Antofagasta	July	1–13.	23	4
France, Paris	July	21–Aug. 4.	7	.
India, Calcutta	June	30–July 7.	.	11
Madras	July	7–13.	.	3
Russia, Odessa	July	21–28.	3	1
St. Petersburg	July	7–28.	8	3
Siberia, Vladivostock	June	28–July 5.	3	.
Spain, Seville	July	1–31.	..	20
Turkey, Constantinople	July	21–29.	.	1
Uruguay, Montevideo	June	1–30	.	1
YELLOW FEVER—UNITED STATES.				
Louisiana, New Iberia	Aug	19	1	..
YELLOW FEVER—FOREIGN.				
Mexico, Merida	July	29–Aug. 4.	6	2
Progreso	Aug.	7.	1	1
CHOLERA.				
India, Calcutta	June	30–July 7.		18
Madras	July	7–13.		12
PLAGUE—INSULAR.				
Hawaii, Honolulu	Aug.	30		1
PLAGUE—FOREIGN.				
Brazil, Rio de Janeiro	July	1–8.	2	.
" " "	July	22–29.	1	..
Chile, Antofagasta	July	1–13	4	2
China, Hongkong	June	30–July 7.	12	7
Egypt, Alexandria	July	13–27	11	6
Port Said	July	17.	1	..
Suez	July	14–27.	6	3
Assiout Province,	July	19–28	2	..
India, General	June	30–July 7.	630	530
Calcutta	June	30–July 7.		9
Japan, Formosa, General	July	10–30.	45	40
Persia, Seistan	June	23–July 22.	90	85
Peru, Lima	July	14–21.	1	..
Mollendo	July	4–18.	2	2

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Original Articles.

THE MYSTERIES AND SOURCES OF SUICIDE.*

BY GEORGE M. GOULD, M.D.,

PHILADELPHIA, PA.

CLASSIFICATION OF THE CAUSES OF SUICIDE.—As examples of the classification of the presumed causes of suicide, we may take 9,179 cases in Prussia, occurring from 1873 to 1875, as given by Morselli: 1, mental disorders, 269; 2, unknown and diverse, 185; 3, weariness of life, discontent, 121; 4, vices, 109; 5, remorse, shame, fear of condemnation, 104; 6, physical diseases, 61; 7, afflictions, domestic troubles, 49; 8, financial disorders, 36; 9, passions, 34; 10, misery, 32.

Skelton's table of 508 cases is as follows: 1, unknown, 176; 2, remorse, shame, 103; 3, insanity, 60; 4, anger, quarrels, 43; 5, satiety of life, 22; 6, ulterior motives. 12; 7, vice, 12; 8, grief, 12; 9, bodily affliction, 11.

De Greef thinks the principal social conditions causing suicide in the order of their importance are: 1, poverty; 2, family difficulties, and 3, physical suffering, of about equal power; 4, alcoholism; 5, fear of legal persecution; 6, love, jealousy, and debauchery. Or in general: 1, physical and psychical disturbances; 2, economic difficulties; 3, genetic troubles; 4, moral difficulties.

As an example of the extent to which vaporous and unreal philosophizing may go, one may note Durkheim's theory of the three types of suicides: (1) The egoistic, *i.e.* those due to the morbid development of individualism; (2) the altruistic, *i.e.* the predominance of society over individuals; (3) the anomic, *i.e.* those due to the independence of the individual from moral restraint; social control is lost and individual desire is unlimited.

In brief, the more vague and generalized the naming of the supposed causes, the more worthless and useless. Durkheim thus helps not at all, and if in Skelton's list the errors are omitted, his classes 6, 5, and 2 might as well be added to class 1, and thus more than three-fifths of all might more conveniently be entitled "Unknown." It is evident that the truth as to motive and ultimate causes cannot at present be reached in any adequate or scientific sense. The facts individually are beyond us and our curiosity, personal or scientific, except in a minority of cases. I have for a long time been gathering the newspaper reports of the suicides occurring in the neighborhood of Philadelphia and New York, and the study of the gathering makes one feel the utter worthlessness and contradictions of the results of the older tabulators. The result of my attempts to group the definite and certain causes into classes may be summarized as follows: If 100 is made to represent the total number of cases of suicides from all causes, these proportions, roughly, would be they that are the most evident and certain sources, motives, or reasons of the deaths: 20, ill-health, physical and psychical, the latter much less important, and less accurately or definitely ascribed, than the first; 12, sexualism, including passions, illicit and unrequited love, disappointment in love, death of the loved one, etc.; 8, following murder, quarrel, injury to others, the result of hates, grudges, quarrels, etc.; 6, loss of property, social position, failure in ambition, etc.; 5, domestic afflictions, misfortunes, failures; 4, aimlessness, unideality, satiety of life, boredom, emptiness of mind or heart; 3, to avoid exposure after crime; 1, inability to conquer vicious habits—alcoholism, drugs, etc.; 41, unknown, or too indefinite to classify.

The *Chicago Tribune's* report for 1905 thus classifies the reports of the causes of the 9,982 cases of suicide of the year in the United States: Business losses, 32; liquor, 375; ill-health, 411; unknown, 721; disappointment in love, 958; domestic infelicity, 1,525; insanity, 1,826; despondency, 4,134.

The folly of the newspaper reports as regards the item "insanity," "during temporary insanity," etc., practically throws this class over into that of the "unknown." If the larger portion of the "despondency" cases is added to the "ill-health" class, the results are not very dissimilar to my own independently made classification.

Secret Drug-taking, Tobacco, Etc.—There are several factors, by their nature, and at least up to now unrecognized, and that in great part will remain undetected, which make this close and fairly accurate diagnosis much too faulty and misleading. Alcoholism, of course, and secret drug habits, as well as excessive use of tobacco, are in all probability the unknown precedents and real causes of a number of the suicides ascribed to cruder secondary and mediate causes supposed by the reporters to be the genuine ones. What rôles tobacco, secret drugging,* and drinking are playing in producing the diseases and suicides of civilization is a terrifying question, which must be answered by civilization in some way. But with all due allowance made, the pathogenic and suicidal parts they play are far less potent than two others hitherto unsuspected and unmentioned.

The Ultimate Sources of the Illogicalities of Suicide-statistics.—To the observant student it is frequently evident that the supposed causes, reasons, or motives of the suicide are palpably incorrect. Quarreling, anger, disappointments, thwarted ambition, poverty, imitation, boredom, psychic diseases, whim, even sexualism and alcoholism, are often only pretexts hiding deeper grounds, the innocent executioners, in fact, of precedent ignorances and mis-

*Epitome of a paper to be published in "Biographic Clinics," Vol. IV.

* Only one brought in close contact with the facts knows the extent of secret drug-taking. Among professional men the physicians head the list of suicides in the United States. Doubtless a large number succumb by the slower and unknown method of suicide through cocaine, morphine, etc., and probably another proportion by the quick and recognized method classed as suicide proper. The drugs are at hand in both cases. The negroes of the South are much addicted to the use of cocaine.

takes, and of inabilities to meet the challenging circumstance. They directly contribute and are charged with the crimes of more elusive and genuine causes and necessities. They produce the great body of the monotonous and unvarying minimum of cases of any social group. But the puzzling mysteries of suicide statistics consist of other factors which so far have eluded the curiosity and study of the statisticians and philosophers. These inexplainables are: The increase of suicide *pari passu* with advancing civilization; the high urban rate; the strange influence of occupation; the variability of the rate in different social groups; the relative male and female rate; the high rate in the unmarried and divorced, especially of males; the perplexity of age-incidence; the dependence of the rate on school-pressure and education. All of these mysteries, I think, are at once resolved by the influence of two diseases hitherto unobserved and hence not brought into the reckoning. All investigators have been unwittingly seeking the hidden variants which are at work beneath the illogic of the figures and which have turned the study into a disheartening mystery of contradiction, or a ludicrous chaos of unscience. These secret variants are venereal disease and the systemic effects of eyestrain.

The Rôle of Venereal Diseases.—The estimates made by the most expert syphilographers of the number of American citizens afflicted with the two forms of these diseases vary greatly, some saying that it is as low as 40 per cent., others as high as 80 per cent. If the lowest is the more accurate, the lesson is sufficiently horrifying. According to the 1906 report of Messrs. N. W. Ayer & Son, there are over 23,595 newspapers and periodicals published in the United States. The larger portion of these, and especially those of the town and country districts, have derived a great part of their income from the advertisements of quacks and nostrums, the very nature of which may hardly be described in decent language. Every genitourinary and gynecological specialist, as well as most general physicians, well know of the myriads of tragedies caused by these diseases and fostered by the wretches who delude their victims. The nature of these physical infections is such that the minds of the sufferers are easily and often made morbid and introspective, and to such a degree that the hidden shame, doubled by the deceptions of the quacks, renders these patients more secretive. Finally the burden can be borne no longer, and the number of suicides from erroneously stated or "unknown" causes is thus increased. With every advance of civilization there is an increase of those afflicted with these infectious diseases; urbanization is an infallible method of adding to the number; the fact throws a lurid light upon the higher suicide rate of the male everywhere existing; and upon the higher rate among the single than among the married, and upon the still higher rate among the divorced and widowed. The ramifications of these diseases are infinitely subtle and hard to trace, but as surely continuously present and permeating everywhere, among the innocent as well as among the guilty. Evade and avoid the duty as much as civilization may, there is no escaping it, and government and an enlightened public opinion must finally grapple with the problem in most serious and effective earnest.

The Influence of Scoliosis on the Suicide-rate.—Five experts examined thousands of school children in five large European cities and they found on the average that, by fourteen years of age, 27 per cent. had lateral curvature of the spine. Undoubtedly a larger number have the deformity undetected and in its functional stages. The school children of the United States, beyond question, have the deformity just in proportion as the number of school-houses, the degree of school pressure, approximates the central European models. Wherever there is lateral curvature of the spine there is a tendency toward, or full realization of, humpback, a defect that lessens chest-expansion, and aeration of the blood, and increases pulmonary tuberculosis, pneumonia, etc. As I have already said, "the terminal diseases seize upon the anemic, morbid, and devitalized scoliotic, and the terminal diseases occupy the minds of the pathologists and physicians to the exclusion of the early, real, and hidden causes." "The organic diseases are often merely the executioners of long precedent functional diseases." The peculiarity of scoliosis is that the slighter and more functional the disease, the more the suffering, the more disabling the reflexes and results. Another peculiarity is that in a practical sense profession and public have wholly neglected the disease in its functional and curable stages. No one examines the back in diagnosing a hundred morbid conditions resulting from back-strain, and only when the morbid curves are established and bony changes have taken place is the incurable curvature brought to the orthopedic surgeon.

If an erect being like man has the single small column supporting the trunk kinked or curved, the result must be pernicious. All the laws of poise, of anatomy and physiology are disturbed, distorted, and morbidized, resulting in many and any types of neural, cerebral, spinal, and reflex diseases. It may be that some of the greatest curses of civilization, such as epilepsy, insanity, "neurasthenia," etc., will be found due to these spinal deformities, too slight and functional to have arrested attention.

There can be no question that in the 27 per cent. of the young afflicted with scoliosis the disease is due almost wholly to two causes: (1) by the morbid writing-posture, which, by the absolute laws of spinal mechanics produces the morbid functional curves of the neck and vertebral column; and (2) by such optical defects of the eyes as necessitate habitual head-tilting in order to see plainly the most common vertical lines of print, etc. Either cause, alone or conjointly, will set up the lateral curvature and the kyphosis, at first functional, then slowly becoming organic. The laws governing the pathogenesis of these diseases I have elsewhere set forth. Now it is most noteworthy that the disease-producing writing-posture is also wholly of ocular origin, so that spinal curvature, this great source of human suffering, owes its origin to the "scientific" and professional inattention to simple ocular laws. The essence of the matter is that the mysterious and supposedly incurable suffering of many kinds, persistent, varying, weakening, harassing, inscrutable, and maddening, due to slight malcurvature and morbid function of the spine, spinal cord, etc. (the sole "trunk line" of communication between the head and extremities), is directly and indirectly the source of a great deal of suicide. It is first, and besides, the source of things worse than suicide, but by the very nature of the disease it must frequently provoke that sense of failure and despair out of which suicide must always spring.

Note, now, this: Spinal deformity, springing from the morbid writing-posture, as it were, born in the schools, must be in the largest part produced by civilization, increased by every advance in civilization, by urbanization, by sedentary occupation, by every additional hour devoted to the education process, etc.*

* A wise bookkeeper, when I told him he must have curvature of the spine, said, "Oh, I suppose so; I never knew an old bookkeeper who did not."

Diseases Consequent Upon Eyestrain, other than spinal curvature and its effects, are precisely of the kind to produce depression and despair. It is the mysterious, unexplainable, nagging, never-ceasing or ever-renewed pursuit of fate, the illogical and undeserved series of calamities, the unknown and incurable diseases which wear out hope and resistance, and finally land us in the deaths of the morbidity-table or of the suicide columns. Even if a name is attached to the disease which is killing us, a name that tells nothing, explains nothing, does nothing, that is comforting, and one goes smilingly to death, as in "consumption," "Bright's disease," etc. But when neither ourselves nor the best physicians can tell even what ails the patient, and cannot cure or cures end only in recurrence and recurrence again, then hope is lost and black melancholy follows. Spinal curvature in its incipient and its functional stages, with its host of sequent and distant nervous and morbid effects, is of the hidden and relentless kind to bring the patient to despair. The very existence of the vertebral anomaly is unknown, either by patient or physician, and it is thus a capital illustration of an unknown, unseen enemy in the dark, tirelessly pursuing.

But of all the diseases that have afflicted humanity since modern civilization began, the other nameless and indescribable, mysterious and ever varying ones classed as "migraine," "neurasthenia," "bilious attacks," "sickheadache," "dyspepsia," and a score of other names, seem, with diabolic cunning, designed to conquer all human resistance and heroism and wear the sufferer to utter despair.

Take "headache," "migrane," or "sickheadache," there is no family but has its victim, even after the disease has been known to be due to eyestrain for thirty years. There is no adult that cannot remember one or more instances of the awful and life-long sufferings of parents, grandparents, uncles, aunts, etc. Many can now see how the tragedies of the olden times were due to this grievous affliction. One can go into any village or city of the land and demonstrate the existence of the disease in varying degrees and types in from 25 to 50 per cent. of the inhabitants. A great authority says, "The nature of the disease is unknown"; the doctors cannot cure, not even the majority of the oculists. And yet there is no more doubt in the minds of the competent that 95 per cent. of these patients can be cured, than that breathing stops with death. All of the symptoms of this disease are produced by use of the eyes; they cease when reading, writing, etc., is stopped, are wholly cured with scientific spectacles, etc., but the ever-renewed round of headache, vomiting, depression, insomnia, constantly increasing weakness, weariness of life, and the rest, alternating with short periods of apparent health and happiness—these are the things which prepare the way for death by the hand of other diseases, or by one's own hand.

A more authoritative judge does not live than Dr. John H. Musser, of Philadelphia, Ex-president of the American Medical Association and Professor of Medicine in the University of Pennsylvania. In an article read at the meeting of the American Medical Association last year and published in the Association's Journal, Professer Musser states: "*The Eyes.*—The subject is familiar to all; who has not seen correction of errors of refraction relieve so-called bilious attacks, periodical vomiting, anorexia, indigestion, and other gastric symptoms? The cure of grave organic ocular defects relieves similar gastric conditions." A great American surgeon says his most brilliant cures in cases of threatened appendicitis and other surgical abdominal diseases have been by and through the oculist, thus avoiding the operations of the surgeon.

The indigestions and the dyspepsias, the disorders of nutrition, lie at the foundation of the diseases which lessen and kill the power-supplying forces of our life. Headaches are the evidences of diseased neural, cerebral, and mental control. The great, certainly the vast majority of these two classes of diseases are caused by eyestrain, and in this fact one has the explanation of the hidden source, the secret variant which makes clear the mysteries of suicide. If there is added the neurasthenias, the disorders of the mind and nervous system, directly due to the difficulties and strains of vision as demanded by civilization, we have the solution of most of the mysteries, illogicalities, and anomalies which have tormented the statistician of suicide. Taking each of these mysteries in turn we find:

Civilization and the Suicide-rate.—The reason for the fundamental law of the disproportionate increase of the suicide-rate caused by civilization itself is made clear, for every step of that advance we call civilization is conditioned upon that greater use of the eyes in writing, reading, and "near-work," whence eyestrain and its morbid effects spring. The scientific glasses which will absolutely neutralize this eyestrain can be supplied, but, except in a few cases comparatively, such correct optical helps have not been provided. In all Europe it is almost impossible to get them, and in the largest part of America.

The High Suicide-rate in Cities.—The cities are the great foci of that life which necessitates the most near-work of the eyes, in commercial, mechanical, and educational life, and hence the suicides provoked by spinal, cerebral, and digestional diseases are doubled or trebled in the cities. Confinement in rooms and sedentary occupations, city-life, in a word, increases the crowd diseases, especially the infectious ones, pneumonia, tuberculosis (consumption), typhoid, etc.; but not only does the consumptive not commit suicide, he is proverbially hopeful. Indeed, those continuously ill, dangerously ill, especially if their disease is named and supposed to be known, not mysterious and of unknown nature and origin—these do not commit suicide. Only those up and about but ailing, struck down for a time, and ever thus alternating between severe illness and temporary health—such are they who are driven to despair. They are the migrainous, the neurasthenic, the headache, and bilious, and "nervous" sufferers, and their diseases are almost always due to eyestrain and spinal curvature.

The Occupation Rates.—The suicide-rate, except in soldiers and vagrants, exactly corresponds to, and is mathematically increased by every occupation just in proportion to the use of the eyes required by that occupation, at close range, such as is shown in the tables. Take that of Morselli, of the suicides in Italy, 1866-1876, per million individuals: (1) dependents, and without profession, 8; (2) production of raw materials (out-of-door laborers), 25; (3) industrial supernumeraries (day-laborers, etc.) 30; (4) religion (in Italy, to be noted), 45;* (5) industrial productions, 56; (6) domestic servants, 68; (7) fine arts(?) 94; (8) property, movable and immovable, 113; (9) transport, 154; (10) medical profession, 163; (11) instruction, education, 175; (12) jurisprudence,

* That the rate among the religious orders and priests is low is principally explained by the little amount of ocular labor at near range done. Protestant clergymen have a higher rate, but one still below that of other professions, not demanding so much literary work. Parochial duties, like any others that lessen ocular labor, lessen the mortality, morbidity, and suicide rates.

217; (13) commerce, 246; (14) vagrants, 259; (15) public administration, 324; (16) letters and science, 618.

The Rates in Different Countries.—Every country's condition as to the causes that produce suicide is peculiar, and especially is that of Italy exceptional, but the law in each and all is the same: The suicide rate, soldiers and tramps excepted, is exactly in proportion to the use of the eyes at work at from 12 to 18 inches distant from the object, *i.e.* in reading, writing, handicrafts, etc. And each country's rate, as compared with that of another, regardless of race, religion, etc., is also in exact relation to the use of the eyes as stated.

As to the higher rate in males than in females, the consequences of venereal disease and of responsibility are here manifest, but of still greater importance is the fact that that use of the eyes which causes eyestrain and its effects is more imperative, more ceasless, more inobviable than in women, except in the cases of seamstresses, factory workers, typewriters, etc. And a proof of this is this: In those countries, cities, etc., where women are more and more taking up the occupations of men, the suicide-rate of women is proportionally increasing. In no country is this so much the rule as in our own, and it is here that the proportion of women suicides is rapidly increasing. In 1905 the actual numbers were 6,556 men and 3,426 women, the male rate less than double, it should be noted, while in other countries the proportion is 1 to 3 or 4. More than five million women were earning money in 1900. The fact is highly significant.

As to the relative rates among the married and single and the divorced, the influence of venereal disease rises to modify but not wholly do away with the effect noted.

The Suicide-rate and the Time of Life.—But the most striking and convincing proof of the theory of the influence of the sequels of eyestrain in producing suicide pertains to the time of life at which the numbers of suicides increase, reach their acme, and decline. The following diagram, from the U. S. Statistical Report, Registration area, presents the matter succinctly:

NUMBER OF DEATHS AT EACH AGE PER 1,000 AT KNOWN AGES.

Age.	Ages. 1900. Males.	1900. Females.	1890. Males.	1890. Females.
Under 15 years	1.2	7.8	3.2	2.3
15 to 19 "	18.8	100.5	23.7	92.8
20 " 24 "	68.8	158.0	69.2	158.4
25 " 29 "	92.6	135.8	92.9	144.8
30 " 34 "	103.4	109.7	99.4	99.5
35 " 39 "	114.2	124.0	103.9	83.7
40 " 44 "	117.3	90.1	100.0	83.7
45 " 49 "	113.4	75.7	119.9	81.4
50 " 54 "	105.7	50.9	110.3	83.7
55 " 59 "	79.2	40.5	82.7	49.8
60 " 64 "	62.3	28.7	68.6	40.7
65 " 69 "	50.4	27.4	53.8	24.9
70 " 74 "	35.8	23.5	41.0	13.6
75 " 79 "	25.0	14.4	20.5	27.1
80 " 84 "	9.2	7.8	8.3	6.8
85 " 89 "	1.9	3.9	2.6	6.8
90 years and over	0.8	1.3	...	...

If one should see the table of the male rate only, or even that of the combined male and female rate, one would wonder at the peculiarity of this age incidence. What a deplorable fact that at the ripest period of life, when a human being is at his highest value, from 24 to 55, he should kill himself, and the heavy investment of the community in bringing him to maturation and possibility of usefulness should be lost. There is but one fact that can explain this. The terrible disproportionate increase in female suicides from 16 to 30 years, caused, in part, by love and shame, not only does not contradict the amazing line of the general curve from 20 to 50, but should put an end to another apparently deathless superstition which has afflicted humanity, even our profession, long past its time. According to a theory hoary with antiquity, the diseases of women have been supposed to be multiplied and intensified by the menopausal factor. Expert oculists have known for many years that this factor has little or nothing to do with the increase of bodily or mental disorders. Had the upholders of the superstition cast but a single glance at the foregoing table, the nonsense might have had an ending. It is presbyopia, with its doubling and trebling of eyestrain, which occasions the increased disease and suicide at the ages of from 40 to 60. For this glance would have shown the uniformity or lessening of the female rate at this time of life, while among men (unaffected with menopausal woes!) the rate is highest from 35 to 54. Another way to view the fact is that the average age at death in the registration area, from suicide, was 43.6 years in 1900, 44.1 in 1890. Turn where one will, the reproving of the truth is peculiarly striking. In England, 1871-1874, the proportions per 1,000 cases of suicide were as follows:

	Men.	*Women*
From 10 to 15 years	3.7	8.2
" 15 " 20 "	23.2	66.7
" 20 " 25 "	50.5	76.2
" 25 " 35 "	139.3	156.2
" 35 " 45 "	194.5	175.1
" 45 " 55 "	211.7	205.9
" 55 " 65 "	217.8	175.1
" 65 " 75 "	122.5	107.7
" 75 " 85 "	33.3	27.7
" 85 and upwards	3.5	0.6

It is thus incontestable that the ages at which suicide is committed, barring the rise, in part, from love and shame in young women, is accurately paralleled by the increase of eyestrain and its systemic sequels. The male rate shows the parallelism uninfluenced by the temporary factor especially present in young women. At the end of the presbyopic strain, at a little over 60, the eyestrain factor ends, and the steady contributing factors of lessening vitality, outlived life, failure of a dozen different kinds, find their proper function in the quickly lessening rate. The profound cause, the secret variant is the ocular function of accommodation, which, with almost unexceptionally present astigmatism, etc., is put to impossible tasks with the beginning of adult life, rises to doubled tragedy at about 30, and is quadrupled at the ages of from 40 to 60.

Suicide and School-pressure.—That the variant suicide rate in different countries and communities depends so largely upon the spinal, the cerebral and nervous and the nutritional diseases caused by eyestrain gets its final confirmation in the fact that suicide everywhere depends upon the school pressure or the educational compulsion. The greater the number of hours of study demanded of the school child and youth, the greater the number of suicides. The exact figures of all nations are impossible to obtain, but Hon. W. T. Harris of the U. S. Bureau of Education writes me that in the German-speaking countries (where the suicide-rate is highest) the rule in general is about 1,500 hours of schooling per annum. The average in U. S. schools is in the neighborhood of 1,000 hours. Bronc said that the number of suicides in a country could be calculated from the number of pupils in the public schools, and Morselli states that Saxony is the most advanced as to schools and education, and it is the focus of irradi-

ation of suicide in all central Europe. In the conscription of 1865-1873, 59 per cent. of the Italian conscripts could not read and write, 23 of the Belgian, and 3 of the Prussian. Mayo Smith says that "the connection of suicide with education is explained, of course, by the fact that mental development brings greater danger of nervous disorders and greater sensitiveness to mental and physical suffering." But does it? One may promptly answer, *no.* That is a clear case of begging the question; and moreover the explanation does not at all explain. It is at one stroke a *petitio principii* and a *lucus a non lucendo. Per se* intellectual development or "culture" has no connection with ill-health; of itself it is not a cause of "nervous disorders," or of "greater sensitiveness to mental and physical suffering." Something else that may or may not accompany the intellectual progress may cause these morbid products; if one looks about him he quickly sees that his intellectual and educated friends are no more prone to morbidity than those not so mentally progressive. It is a proverbial fact that great intellectual men have generally exceptionally long lives. A glance at any table of the relative incidence of suicide-mortality of the different occupations at once ends such a contention. The explanation of De Greef, that "the prevalence of suicide in the intellectual and liberal professions is due to a peculiar instability resulting from their specialty—a disturbance of equilibrium," again covers with words but does not explain. All such reasons miss the true reason that in general the amount of "near-work" with the eyes is the governing condition, and that certain eye-defects, especially astigmatism, ruins the health of the "educated," while in those without such optical defects there is freedom from suffering regardless of the intellectual or ocular work. Let us discriminate!

The increase of child-suicides in countries demanding the greatest number of school hours throws another lurid light on this aspect of the question. In Prussia the number of children committing suicide has steadily risen. In 1896 there were 2 cases under 10 years of age, 63 from 10 to 15, and 444 from 15 to 20—333 school boys and 176 girls, a total of 509. Failure in examinations or promotion, or fear of punishment, were the motives ascribed in the majority of cases. What a ghastly commentary! Again appears the disproof of the fallacy as to the supposed cause of mischief in menophania and love. There were 333 boys and 176 girls, under 20, who committed suicide. Hence even in the high suicide-rate of young women it is probable that eyestrain is a frequent cause, as it is in young men, rather than passion and shame. The common diseases of children generally caused by eyestrain, the forerunners and prophecies of coming tragedies, are night-terrors, nervousness, loss of appetite, anemia, vomiting, dyspepsia, headache, migraine, etc. The youth that shows an exceptional intellectual development does so by means of study and reading. In this way the truth that may be in Byron's "Whom the gods love die young," acquires a new and real, a medical significance.

Pleasure-seeking as a profession, the rage for luxury, "the pace we lead," "the strenuous life," have been vaguely and uncritically charged with vastly increasing the mortality, morbidity, and suicide-rates. There may be many reasons for discouraging and inveighing against these things, but there is little reason for believing that such customs much increase the number of suicides. The strenuous do not kill themselves, nor do the pleasure-seekers, those greedy of luxury and wealth. Other causes lie deeper and are more determining. Neither does the decline of religion suffice to solve the mysteries. Sir Thomas More came nearer the explanation when he justified suicide "if the disease is not incurable, but also full of pain, making life a torment." In Oriental countries the desire to escape disease and suffering is acknowledged to be the source of most of the suicides that occur.

The Causes of Suicide in the United States.—Take the not untrustworthy report of the *Chicago Tribune* (Dec. 31, 1905) as to the causes of the nearly 10,000 suicides in the United States in 1905: "Business losses" account for only 32; alcoholism for 375; love for 958, and domestic troubles for 1,525. No one can reasonably doubt that behind these namings not a small share would, by more exact knowledge, be found to have a better explanation in some form of physical or psychical ill-health. These cases would at least offset those in the rest of the classes which were not due to ill-health. There remain, then, these: Despondency, 4,134; "insanity," 1,826; ill health, 411; unknown, 721; total, 7,092; to be set over against the 2, 890 as probably and approximately not due to disease; that is, three times as many cases more or less certainly consequent upon ill health than upon all other causes combined. The enormous number that could be classifield as due to "despondency" is of amazing significance. One must remember that it is the mystery and painfulness of one's affliction that leads inevitably to despair. As a rule the lethal diseases are comparatively painless, and their nature is at least supposably understood. Moreover it is not those afflicted with the directly lethal diseases who commit suicide. It is those struck in the dark, as it were, and by an unknown fate, who despair. One could successfully show that in all history and religion the idea and belief in Fate and Fatalism is in fact the work of disease. Vertebral disease, sick headache, headache, bilious attacks, dyspepsias of many kinds, "neurasthenias," loss of will and vital force, nervous, cerebral, and psychic disorders, and inabilities to meet the demands of circumstance, these are the diseases which breed despondency; they are painful, they are incurable by most modern medicine, they are diabolically persistent and inexplainable by the popular or the accepted scientific theories. And yet in the vast majority of instances they are due to eyestrain. This is a truth too long unacknowledged, although known by a few wise men for a generation. It is not "hobby-riding" or "exaggeration," or a specialist's infatuation; it is sober truth, new truth, truth that is startling thousands of observant scientific minds, and which will soon revolutionize the philosophy and the practice of medicine, and of hygiene, personal and public. Let us be wary of obscuring the truth, or of postponing its acceptance by prejudice or by a cynical satisfaction with old and accepted theory.

Some Clinical Suggestions.—In monographs on suicide, individual cases are too rarely reported, but when it is done, such sentences are often met: "From dyspepsia," "excessive study," "feeling so miserable," "studying for examinations," "suffered such torments," "lack of self-control," "weakness and pain to an intolerable degree," "infirmity and illness is the cause of my suicide," "an old complaint of my eyes came once more upon me," "I was a draughtsman and my sight was useless to me," "a melancholiac," "want of sleep," "periodic attacks of severe headache," "brain fever," "mental irritability," "general health bad," "nervous irritability."

From my own newspaper cuttings of the past

few months I quote a brief word or two given as the causes of suicide: "In bad health," "suffered much from pains in the head," "thought he was losing his mind," "ill in bed for a long time," "return of melancholy," "because his wife had been ill so long," "ill a long time," "addicted to morphine to relieve suffering," "melancholy from excessive study," "incurable illness," "pain too great to be borne," "upset by overstudy," "had been in a sanitarium," "broke down while studying," "gastritis," "nervous collapse," "suffered from melancholia," "suffered from a nervous affection for two years," "threatened with blindness," "broken with illness," "depressed from lack of sleep while studying," "despondent from long illness," "ill health and consequent despondency," "in low spirits," "worried over her health," "not able to sleep," "sickness has driven me to this deed," "suffering from nervous breakdown," "melancholia," "ill health for several years," "another attack of melancholy," "despondent after illness." "despaired of regaining his health," "severe toothache," "despondency because of ill health," studying hard at night."

If one looks over the biographies of the literary and musical geniuses who have done vast amounts of ocular labor, he is at once struck by the fact that some had good health and worked with ease and happiness, while others much or most of the time were at intervals plunged into intense pain, and mental and physical misery. Goethe, Humboldt, Mommsen, Mozart, Ruskin, Kant, Liszt, Wordsworth, Macaulay, Emerson, Hume, Verdi, Gibbon, St. Beuve, Bronte, Meyerbeer, Scott, Calderon, Hawthorne, Dumas, Scribe—a hundred others, did vast amounts of ocular labor all their lives, and they had no headache, insomnia, biliousness, or melancholy. Not one of that class was a pessimist. But Maupassant, Carlyle, Huxley, George Eliot, Lewes, Wagner, Parkman, Spencer, Margaret Fuller, Nietzsche, Symonds, Taine, Berlioz, Balzac, Tschaikovsky, Flaubert, Swift, Heine, Leopardi, and so on—how was it with these? They were pitiful and terrible sufferers all their lives, they were usually atheists and pessimists, they had all the typical symptoms of eyestrain—"migraine," sick headache, insomnia, biliousness, vomiting, despondency, tiredness of life—whenever they used their eves; and they got immediate relief when they stopped near-use of their eyes, *i.e.* when they walked the hills or moors most of the day. DeQuincey, Mrs. Browning, and Flaubert saved some wreckage by means of opium; Parkman, Browning, Whittier, Darwin, and Spencer by renouncing most all eye-work. But the others found no such methods and suffered, and their work suffered, and the world suffered, in consequence., Darwin was always near to despair; Carlyle's life was much of it a shuddering at its uselessness, and he thought death advisable; George Eliot said that illness is the one woe for which there is no comfort—no compensation; she was ill all her life of sick headache—due to her eyes—and fought against despondency for forty years with heroic valor. Of Lewes the same could be said. Wagner was near to madness and suicide all his life because of his eyestrain. "For me there is no salvation but death." Parkman was afraid he really did have a strong constitution, and the riddle of his life is now solved; he was pronounced mad by great alienists, and was said to have "an inherited affection of the brain" by expert ignoramuses. A library of nonsensical writing, professional and unprofessional, need not have come into being if Mrs. Carlyle had had a scientific pair of spectacles. If Spencer could have read the necessary amount his "Synthetic Philosophy" would have lived much longer. "Neuralgia" and "neurasthenia" blasted Whittier's career. Margaret Fuller's tragedy was also of ocular origin.

Except Flaubert no man ever suffered more than Nietzsche, and the sole cause of his suffering was his eyes. He had the worst sort of "migraine," the worst eyes, the worst kind of life, and the worst philosophy it is possible to imagine. He lived with despair all his life, and ended his life in the insanity of cerebral paralysis produced by near use of his eyes. That Taine did not end as tragically is due perhaps to the fact that one of his eyes was excluded from function. Symonds, tormented by eyestrain, often thought of suicide, and at twenty-eight seriously contemplated it. The gloom and suffering fro meyestrain in the case of Berlioz was so great that suicide was many times planned, and twice attempted. Once emesis prevented death, and another time he was dragged from the water unconscious and saved from suffocation by the efforts of others. "Insane depression," "profound disillusion," utter hopelessness, even at the height of brilliant success, characterized the whole life of the great eyestrain sufferer, Tschaikovsky. Mason writes of him: "He says that had he remained a day longer in Moscow he should have drowned himself, and it is said that he did go so far, in his terrible depression, as to stand up to his chest in the river one frosty September night in the hope of literally catching his death of cold and getting rid of his troubles without scandal." One of the most perfect of pessimists, one of the greatest of all sufferers from eyestrain diseases, was Flaubert, and he speaks himself of "grazing madness or suicide," always wishing for death, etc.

Dr. Pronger of England writes: "How often patients [eyestrain patients] have told me they have been on the verge of suicide"; and he adds that "errors of refraction are responsible for a large proportion of the suicides occurring daily." Again he says, and truly, that "It is quite conceivable that suicide would be more likely to occur in those who had been for a long time enduring the mental torture resulting from the [ocular and other] conditions I have enumerated, and which had rendered life a burden." In my own practice I have had a number of patients who confessed that they had but barely missed suicide. Here are notes of three:

"Three months ago a professional student from a great university came to me with a typical history of intense eyestrain which had forced him twice to renounce his intended career. Utter breakdown was again upon him. The cerebral and psychic symptoms were terrible. Suicide was constantly in his mind. He returned recently to thank me for his glasses and to say he is happy and studying hard, and that he stands scornfully smiling at the locomotive as it approaches him, while he has not the least hint of his old impulse to throw himself before it."

"As I write this a patient comes in bright and happy and healthy, who two months ago was the absolute reverse of these things, and whose life had been made as miserable as that of Wagner, and from the same cause. In his melancholy and suffering his greatest danger had been suicide. Great nerve specialists had drugged him to stupor, or had 'rested' him nearly to death. Luckily he escaped the hydropathist and Christian Scientists."

The wife of a rich physician, living in the West, at the presbyopic age of forty-four, for several years had typical sick headache or "bilious attacks," clearly and demonstrably due to eyestrain. She would not wear glasses. In her agony she suddenly forgot home, children, and husband, and killed herself.

SHOCK.

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Shock in its widest significance covers the whole of medicine. From the slightest physical traumatism or the lightest mental depression to the most profound impressions on the vasomotor centers causing instantaneous death, the difference is only one of degree, the phenomena being the same. It would therefore be impossible in one short chapter to follow out the subject in all its various ramifications in the field of medicine and surgery, and it must suffice to treat it in a comprehensive manner as an affection primarily of the nervous system, with the secondary involvement of the vascular system as a whole.

While it is only during the last fifty years that any scientific experiments have been made with a view toward discovering the pathology of shock, as early as 1826 Travers, in his work on "Constitutional Irritation," gave an exact description of its phenomena. The first treatise on the subject that I have been able to find was published in 1868 by Edwin Morris, F.R.C.S. In this he states that the first mention of shock in medical literature was in 1819, in the works of Hennen and Guthrie, writing on military surgery. Morris considered death from shock due to functional disturbance of the brain, the heart being affected only secondarily. He placed no emphasis on the part played by the sympathetic system, and mentions this only once incidentally as the *par vagum*, and says it connects the spinal cord, brain, and heart. He treats of shock under two headings, surgical and shock from mental causes. He gives the classical symptoms and concludes that shock is due to paralysis of the nervous system destroying the normal function of the brain and withdrawing the nervous stimulus from the heart. He confuses shock and concussion of the brain, but warns against confusing this condition with extravasation in injuries to the brain. I have given a brief synopsis of his brochure because it is written in a comprehensive manner, and as it appeared as late as 1868, we may assume that it contains all that was known on the subject up to that date. Previous to this mention was made of the subject in Cooper's Medical Dictionary in 1838, and in Copeland's Dictionary in 1858. In Cooper's Surgical Dictionary, published in 1859, however, there is no mention of shock.

One of the most interesting landmarks in the history of the literature on shock is Davey's work, published in 1858. Under the heading of "Syncope" he gives a long dissertation on the phenomena of shock, although this word is used only once, and he foreshadows both the present theory of the pathology and the latest treatment as demonstrated by the experiments of Dr. George C. Crile and others in his observations on collapse after labor and the too rapid escape of the ascitic fluid in paracentesis abdominis. "I am, however, confident," he says, "that the *bona fide* explanation of the fact is to be sought for in loss of the long-accustomed adaptation or relationship between the containing and contained parts of the abdomen, whereby the ganglionic nervous system is at its very center more or less paralyzed." He says he has no doubt that the many cases of sudden death attributed to cerebral hemorrhage, disease of the heart, air embolism, etc., are in reality caused by "syncope" as he terms it, and that the cause is to be found in the fact that "the ganglionic nervous system has been drawn on so largely by the cerebrospinal and muscular systems that there is nothing remaining for the thoracic and abdominal viscera—no stimulus left for the vital organs. Mr. Paget, writing in 1862, gives the phenomena and treatment. Later Brown-Sequard and Savory (1870) made the valuable discovery of the pathology of shock. Brown-Sequard announced as the result of his work the theory of anemia of the cerebral centers due to a more or less persistent contraction of the capillaries through the vasomotor center. The experiments of Goltz on frogs were the most important work in this direction until the last few years. With Brown-Sequard and Savory he held to the theory of cardiac paralysis. He showed that through the inhibitory influence exerted upon the splanchnics, the abdominal vessels were suddenly dilated. In Quain's Medical Dictionary, 1884, is a statement of the status of the subject of shock at that date, which concludes: "For the present we may thus accept as the most plausible interpretation of the symptoms of shock a sudden dilatation of the abdominal vessels, attributable to an inhibitory influence exerted upon the splanchnics, through the medium of a special reflex center." Not much has been added to this explanation of the real pathology of shock, but valuable experiments have been made in recent years in the line of pathology, and some working toward a more rational treatment by George C. Crile, Robert Dawbarn, Harvey Cushing, Eugene Boise, Guy C. Kinnaman, John H. Packard, and others of our profession. In the extensive surgical encyclopedia edited by Dupley and Reclus in 1890 is the statement that it is only during the last twenty years that shock has been studied in France, and that the French in acknowledging the origin of the researches in this subject often use the English orthography, although having a legitimate word in their own language, *"choc."* A differential diagnosis is made between shock and syncope, and the article concludes by saying that in fact we know nothing of the pathological anatomy of shock or of its pathogenesis. The entire bibliography on shock is so meager that it may be interesting from an historical standpoint. In addition to those already mentioned, the field is practically covered by the authors included in the bibliography at the end of this article.

From clinical observation of the phenomena of shock a rather arbitrary division of the etiology has been made, viz., predisposing and exciting causes. To establish this as a scientific classification much more must be known regarding susceptibility to shock. Infants are said to be almost immune, while youth is considered the period of the highest susceptibility. Immunity is therefore before the age when the cerebrospinal and sympathetic systems assume their reciprocal positions in the nervous system, susceptibility from the time when the untrained cerebrospinal system assumes more established control over the sympathetic until the element of mental influence comes in as a factor. To counterbalance this extreme susceptibility of youth comes in the fact that at this time the resisting powers are greater and many cases are recorded by different authors of recovery from the most profound shock in the young which must certainly have proved fatal in the old. It would almost seem that the proposition could be laid down that the power to withstand and overcome shock is in inverse ratio to the susceptibility. Dr. Kiernan says that the insane are not susceptible to the influences which produce shock in the sane, and in fact the effects may be directly contrary; a wide field for study and speculation. Certain peoples are said to be practically immune and others to be little affected. Dr. John H. Packard writes interestingly on this subject. He says that Hindoos bear injuries

and operations impassively; that negroes are not easily affected, and that Americans are especially susceptible to the influence of shock. It has been observed that injuries inflicted while the subject is under the influence of intoxicating liquors rarely produce severe shock. If all these clinical observations can be substantiated it would point very strongly to a large mental element in every case of shock, either directly or indirectly. When all is said, however, the real factor in each constitution which speaks for or against susceptibility, the vital force, will, after all, no doubt, remain the unknown quantity. As regards the varying degrees of susceptibility in the different organs of the body, the most vascular tissues and those most highly supplied by the sympathetic nerve have been found to be most easily affected. In the present light of our knowledge we may consider as predisposing causes all conditions which impair the nutrition of the nervous system and consequently the circulation, exhausting diseases, prolonged physical pain or mental strain, insomnia, melancholia, in fact, everything which reduces vital force. Mummery says in his second Hunterian lecture that in elderly patients a very high blood pressure is generally observed, largely accounted for by arteriosclerosis, and that in such patients a relatively slight fall in blood pressure may produce shock. It is as a predisposing cause that hemorrhage plays its proper rôle through the secondary physiological phenomena of anemia, which leaves the ganglia to be bathed with impoverished blood and as a surgical condition to be handled surgically should be sharply differentiated from shock proper. The exciting causes of shock may be more satisfactorily considered under the classification of traumatic and mental. Direct traumatism of the tissues may result from accidental injuries or from trauma during the course of surgical procedures. Many writers treat this last condition under a separate classification as surgical shock. It seems true that this subject can be treated scientifically only as a subdivision of the general classification of traumatism, which is either accidental or surgical. The confusion has arisen by considering hemorrhage as an exciting cause of shock instead of giving it its proper classification as a surgical complication, and secondly by the involvement of the anesthesia in the etiology. All surgical writers agree that the frequency of shock has greatly lessened since the general use of anesthesia, and this fact speaks loudly against operating under partial or local anesthesia, as a routine practice. I have seen patients profoundly influenced by an excessive quantity of the anesthetic, on account either of the manner in which it was administered or of the length of time the patient has been held under its influence, with no symptoms of shock whatever, and I cannot think that the effects of long anesthesia, serious as they are, can legitimately be considered as factors in the production of shock. The whole story of a depressed nervous system following a prolonged anesthesia is told in the added traumatism caused by the repeated and unnecessary handling of the tissues and the exposure to atmospheric influences of tissues normally protected by the coverings of fascia and skin. During extensive experimentations in intestinal operations on dogs Dr. Byron Robinson demonstrated that the shock following these procedures was in direct proportion to the amount of manipulation or traction on the abdominal viscera and duration of exposure, that is, the amount of trauma inflicted upon the sympathetic nerve. Sudden blows, especially in the region of the solar plexus, burns and scalds involving large areas, all manner of traumatic injuries, especially those producing extensive crushing of tissues, are the principal exciting causes in shock from accidental traumatism. It has been observed that burns involving a large area causing extensive nerve periphery trauma give rise to more profound symptoms than deeper burns covering a small area. Irritation in one organ may produce nerve storms in a distant one. The introduction of the sound into the uterus or the catheter into the male urethra may produce faintness, nausea, or even vomiting. Dr. Nicholas Senn demonstrated a rare case in his clinic which well illustrates the principle of reflex nervous irritation. The patient came into the hospital with a history of anuria for sixty hours. The right kidney was enormously distended, the left apparently normal. A diagnosis was made of right ureteral calculus, which was removed. During the period of convalescence both kidneys secreted an equal amount of urine, proving conclusively that the suppression of urine from the left kidney was caused by the reflex irritation produced by the disturbance in the right. The size and extent of the renal ganglia and their nearness to the solar plexus give to the kidneys an especially strong sympathetic connection. From the first observations made on the subject to the present day, all writers have recognized the mental element in the etiology of the phenomena of shock. Davey, 1858, cites in detail many cases and says the part played by the mind in the production of "syncope" is not sufficiently appreciated. Clinical observation has established the fact that profound mental impression may cause all the nervous phenomena following a blow over the solar plexus. Sad news, fright, violent emotions may be followed by the same vasomotor paralysis with all its accompanying nervous manifestations; and when this is said, all has been said regarding our knowledge of the influence of the mind in the production of the phenomena of shock.

As the result of some experimentation and much speculation two theories regarding the pathology of shock have been proposed, viz., vasomotor paresis and cardiac paralysis. Almost all of the modern investigators hold to the theory of vasomotor paresis. The nervous impression is conveyed to the medulla by the afferent nerves, causing vasomotor paralysis and dilatation. There is a more or less rapid fall in blood pressure. The vessels lose their normal tonicity which is necessary to the rapid transition of the blood, the first effect is contraction in the caliber of the capillaries followed quickly by dilatation with at first increase in rapidity of the blood current, but in proportion as the dilatation increases the rapidity decreases and may proceed to a complete stasis. The right side of the heart becomes engorged and does not empty at each contraction, blood accumulating largely in the relaxed veins and leaving the arteries partially emptied so that the patient bleeds into his own veins. The blood is poured into the abdominal vessels. Cerebral anemia results as a natural consequence and a slowing of the activity of all the different viscera dependent for the fulfillment of their physiological functions upon a perfect blood supply. The influence on the heart together with all other viscera is therefore secondary to the paralysis of the vasomotor system through the great reorganizing center, the solar plexus, the abdominal brain. The phenomena of shock are therefore the result of a reflex inhibition affecting all the functions of the nervous system, causing a lowering of the general blood pressure; checking normal metabolism, arresting the ex-

changes between blood and tissues; the venous blood becomes red, temperature falls in consequence of the lowered blood pressure, respiration slows, and we have a picture of systematic asphyxia. The entire mechanism of life is deranged, the balance of power is destroyed, and each organ is in independent control of its own functions for the time being and consequently only as long and as thoroughly as its limited reserve force will allow. Brown-Sequard, Goltz, and Savory advanced the theory of cardiac paralysis. They gave as the conclusion of all their experiments that shock was caused by a violent impression on some portion of the nervous system acting at once through a nerve center upon the heart and destroying its action. No reliable findings have been discovered at autopsy. Parascandala claims to have found certain changes in the spinal cord after profound shock affecting the cell body, prolongations in the nucleus and nucleolus, consisting of chromatolysis and fragmentation, nuclear and perinuclear.

It must be admitted that the pathology of shock after all remains very indefinite and unsatisfactory, the *x*, as Dr. Senn has called it in the surgical formula. It is therefore very difficult to give a comprehensive definition of this *ignis fatuus* in the domain of pathology. Based in reality more on the phenomena than upon the pathology, according to our present light we must consider it as primarily a disturbance of the great sympathetic nervous system affecting secondarily the entire vascular system, a more or less profound impression on the sympathetic nerve producing a vasomotor paresis with the consequent dilatation of the right side of the heart and the large vessels, especially the abdominal ones, and in consequence lowering the general blood pressure and deranging through the solar plexus all the automatic visceral ganglia, and consequently destroying their functional activity, rhythm, absorption, and secretion.

The phenomena of shock manifest themselves through the tripod of vital forces, the nervous, circulatory, and respiratory systems, and principally in those organs most highly supplied by the sympathetic system. The rhythm of the viscera is disturbed, secretions are diminished, causing an intense thirst, which is the cry of the tissues for fluids; there is a general trophic disturbance; the heart action and the respirations are increased, the temperature is subnormal, the face is pale, the lips are blue, the pupils are dilated; there is nausea with vomiting and restlessness, more or less pronounced according to the degree of shock, until the stage of collapse, when the reflexes are lost. A cold, clammy sweat appears on the entire surface of the body, and the extremities are cold. Shallow respirations with frequent sighing, yawning, and hiccoughs are often added to the clinical picture. In the most profound shock, in which the cerebrospinal system is involved, this picture may be changed by the substitution for the phenomena caused by a hyperirritation of the sympathetic system—nausea, vomiting, and restlessness—of manifestations resulting from a secondary depression of the cerebrospinal system, causing a loss of reflexes, as involuntary urination and bowel movements; delirium and even stupor may appear. The cold sweat, rapid, irregular pulse, and subnormal temperature here persist in a more profound degree, some observers having noted a fall in temperature of 6° F. During the War of the Commune observations were taken in regard to the temperature after injuries. The average temperature varied from 96.5° to 97.5°, the lowest registering at 93.5°. The fall was greater after shell wounds and the curious fact was noted that there was a uniform lower temperature among the insurgents than among the regular troops. Authenticated cases have been reported in which jaundice, deafness, and arrest of lacteal and menstrual secretions have followed profound shock. Many attempts have been made to establish a classification of the phenomena of shock, but all are unsatisfactory for the reason that one state runs so insensibly into another that it is impossible to measure the degree except by the rate of recovery, and here again comes in the unsolved problem of susceptibility and resistance and we simply travel in a circle. The only classification which is any aid in diagnosis and prognosis is a differentiation between the state implicating only the functional activity of the sympathetic system and that in which the cerebrospinal system is also involved, and even here the symptoms run so imperceptibly into each other that classification is elusive; even in collapse, consciousness may be retained until death.

The intensity of physical shock is influenced by four principal considerations: the extent of the injury, that is, the number of nerve peripheries involved, the nearness of the traumatism to the solar plexus; the character of the injury, the more crushing or bruising of the nerves the greater being the nervous impression; and the severity of the pain produced. It is therefore from the standpoint of intensity rather than by means of a scientific classification that we must study the phenomena of shock.

The diagnosis of shock is simply the recognition of the clinical phenomena, as here we have no chemical or pathological findings to aid us. The clinical manifestations of this nerve storm are, however, so pronounced that practically the only difficulty lies in differentiating this condition from syncope caused by severe hemorrhage with which there is danger of confounding it. When syncope coexists with shock it is often extremely difficult to establish the presence of internal hemorrhage as a complication. In one condition the blood leaves the peripheries and congests the abdominal vessels, in the other the large and small vessels are equally deprived of the usual volume of blood. In nervous shock certain tissues only lose their blood supply, while there is no diminution in the quantity of blood. In the one the primary violence is to the nervous system, in the other the circulatory system is attacked directly. Syncope, causing always a cerebral anemia, is practically identical with the last manifestations of overwhelming shock or collapse. As a recognition of the presence of hemorrhage is often of the utmost importance, sometimes meaning even the saving of a life, we should never rest content with a diagnosis of shock until we have excluded the possibility of hemorrhage by every means in our power. If the patient is seen immediately after the injury, or in surgical cases in which internal hemorrhage may arise, the most reliable course for establishing a differential diagnosis is by observation of the pulse and temperature. Both conditions, to be sure, produce a rapid pulse with normal or subnormal temperature, but there is a decided difference in the course of the pulse and temperature which, with careful observation, one cannot fail to recognize. In internal hemorrhage there is a *gradually* rising pulse, more or less rapid according to the rapidity of the bleeding with a *gradual lowering of temperature,* the golden rule in abdominal surgery establishing the presence of internal hemorrhage laid down by Mr. Lawson Tait over twenty years ago. In shock proper, however, we have the maximum rapidity of pulse and depression of temperature at

the time of infliction of the trauma and coexistent with all other clinical manifestations, as the rapid shallow breathing, cold sweat, and dilated pupils. To illustrate: A patient is taken from the operating table with a rectal temperature of 99°-100°, pulse, 90-100. In half an hour the pulse is 110-120, the temperature is found to be 98°; in another fifteen minutes to half an hour the pulse has risen to 130-140 and the temperature is falling towards 97° and the diagnosis of internal hemorrhage is practically established. This rising of the pulse with a corresponding depression of temperature may be extremely gradual and extend over hours and even days in cases of slow bleeding, sometimes a mere oozing, as where a hematoma or a hematocele is forming, and before the period of infection or localized peritonitis, and here, of course, the diagnosis is more obscure but fortunately less urgent. If, however, the patient is taken from the table with a pulse of 120-140 or upwards, rectal temperature 98°-99°, respirations 30-40, and even if these conditions persist several hours, we have no reason to fear internal hemorrhage, and if after the first half hour of the patient's rest in bed the pulse and respiration slow ever so little and the temperature rise even a fraction of a degree, we may know that we have to deal with a case of recovering shock. The surgical nurse should be taught to make this differential diagnosis through a clinical study of pulse, temperature, and respiration, as it is to her that we must look for the accurate observation and prompt report of a condition in which minutes count in the saving of a life.

We have little to guide us in forming a prognosis, as here again the unknown quantity, the vital force of the individual, the power of resistance of the tissues to the nervous impression comes in as the most important factor in the equation. In general the temperature is the best guide here also. A persistence of 96° or below for several hours warrants an unfavorable prognosis, while even a slight rise from time to time may be taken as a happy omen.

The many and diverse theories regarding the treatment of shock show conclusively the chaotic state of the professional mind regarding this condition. One writer is so confused in his interpretation of the phenomena that he advised at the same time morphine, strychnine, digitalis, nitroglycerin, whiskey, and citrate of caffeine. No one has done more to bring order out of this chaos than Dr. Geo. C. Crile of Cleveland by his experiments on dogs. He has practically demonstrated not only the uselessness but the harmfulness of strychnine in shock, and that the rational treatment lies in raising the blood pressure. He lays down the principle that the treatment must be sedative to the sympathetic system and relaxing to the arterioles. To this end he advises compression of the abdomen and extremities to prevent the accumulation of blood in the large veins, with the administration of adrenalin given with salt solution. Dr. Halstead advises morphine, also normal salt solution. It is interesting to note that Morris, as early as 1868, advised opium, ½ grain every two hours.

If rest and heat, preferably moist, are added to these remedial agents, we have certainly fulfilled the requirements for treatment in accordance with all that is known of the pathology of shock, to quiet the nervous system and relax the arterioles. The addition of strychnine, digitalis, nitroglycerin, and whiskey is certainly irrational. The heart is already overworked by Nature's effort to repair the damage, and strychnine may prove to be what the whip is to the spirited horse at the end of the race, and under its influence the heart may exhaust itself in a last effort. When there has been hemorrhage as a complication, the first indication is most assuredly to restore the volume of blood, but it is certainly irrational to increase the quantity of blood suddenly when the normal amount is present in the vascular system and the difficulty lies in reality in properly caring for the usual quantity. It would seem theoretically that increasing the volume of blood rapidly under these conditions would only increase the local congestion in the large blood-vessels and make the ultimate restoration of the normal blood pressure more difficult. Small quantities of hot water per mouth or rectum sufficient to allay the thirst, or the slow, continuous rectal irrigation which introduces the fluid gradually and as the tissues are prepared to appropriate, seems to me to be more rational than intravenous infusion of a large quantity of fluid. Briefly stated, the treatment in hemorrhage is to restore immediately the normal volume of blood; in shock to restore the normal blood pressure. Dr. Robert Dawbarn calls attention to the danger of using plain water in intravenous infusion in hemorrhage, and says that experiments on dogs have proven that it will kill almost as quickly as prussic acid. He advises normal salt solution at a temperature of 118-120° F., one to two quarts, ten minutes to be taken in introducing it. If the kidneys are not functionating normally, the quantity must be lessened. Some writers make a point on the value of force of gravity and advise lowering of the head. Mummery says that the ideal treatment of shock would be the raising of the external pressure, and thus substituting an artificial peripheral resistance for the lost peripheral resistance caused by the exhaustion of the vasomotor centers, but that as yet this method is not practical. The administration of foods and drugs by the stomach is distinctly counterindicated. The same principle holds good here as in the case of the heart. The stomach is exhausted and oversensitive and should not be irritated or stimulated to work until the period of exhaustion has passed. Perhaps the principal factor in the therapeutics of shock is rest, anatomical and physiological rest. This, of course, forbids all stimulants, alcoholic as well as stimulating drugs. Light and sound should be excluded, that the tired brain may share in the general calm with which we seek to surround our patient.

The preventive treatment of shock lies almost entirely in the domain of surgery. Here is indeed the ounce of prevention worth a pound of cure. Paget, in 1868, advised hypodermic injections of morphine after operation, before the patient is restored to consciousness, to lessen the shock caused by pain. Davey, in 1858, recommended waiting in cases of shock injuries not complicated with hemorrhage until some of the "Promethian fire" had returned to the shocked tissues. Dr. Harvey Cushing and Dr. Crile advise the cocainization of main nerve trunks, thus "blocking" the nerves proximal to the site of operation, in severe cases in which shock may be anticipated. Dr. Crile has invented a pneumatic rubber suit with which he envelops the patient, which he claims assists greatly in maintaining the normal blood pressure. There is no doubt that much can be done by the proper preparation of the patient before coming to the operating table to prevent subsequent shock, and the practice of some surgeons, of rushing nonemergency cases under the knife without any preparatory treatment, cannot be too strongly condemned. It is self-evident that the more normal the condition of the system the greater

will be the resistance to shock. The indication then is to bring all organs as far as possible to their highest function. This is especially important in the case of the kidneys, bowels, and skin, the great eliminatory organs; these must actually secrete normally at the time of operation if we are to expect normal conditions to follow. Free drainage by means of nature's own remedy, water used liberally, internally and externally, for several days previous to operation will, in ordinary cases, be sufficient to put the kidneys and skin in good condition. A free catharsis, making sure that the entire intestinal tract is cleared, is of the utmost importance. The liberal use of normal salt solution as long before the operation as possible not only aids in the systemic drainage but increases the volume of the blood and promotes the rapid metabolism which is so important in preserving the quality of the blood. The stomach should be absolutely empty when the patient is brought to the operating table, as it is one of the first viscera to manifest reflex irritation and persistent nausea and vomiting keeps the patient in constant distress and the muscular system in action, preventing the rest and relaxation so necessary to recovery. Rapid operating, as rapid as is consistent with a proper attention to detail, is unquestionably one of the greatest factors in the prevention of surgical shock. The entire régime of the operating room should be conducive to this end. Every detail should be attended to as far as possible before the patient is placed under the anesthetic. Minutes wasted for any reason while the patient is under abnormal conditions are an injustice to all concerned. In abdominal surgery involving the peritoneal cavity there is little doubt that shock is in almost direct proportion to the amount of handling and exposure of the intestines. Mummery says that turning the intestines out of the abdomen is always followed by a sudden and dangerous fall of blood pressure. Methods of operating, therefore, in which these viscera are little or not at all exposed can certainly claim to be a factor in the preventive treatment of shock. I have frequently seen patients put to bed after the removal of large myomata (hysterectomy) per vaginam with no more symptoms of shock than after a normal labor. The choice of anesthetic in cases in which shock is apprehended is considered by some of great importance. Mummery says that ether anesthesia almost always causes a rise in blood pressure, while chloroform is usually accompanied by a fall in blood pressure; and he believes the chloroform-ether mixture to be the best anesthetic from the point of view of subsequent shock. It would seem, however, that there are more important points to be considered in the choice of an anesthetic, as the organic condition of the heart, kidneys, and lungs, as we have more definite knowledge of the action of ether and chloroform on these organs. The temperature of the operating room is of great importance and should be kept between 80 and 85° F. Wetting and chilling of the body should be avoided, and heat applied directly by means of a water cushion placed over the operating table assists greatly in preserving the normal body temperature. The mental state in which the patient comes to the operating table is, no doubt, here an important factor. Every effort should be made, therefore, to inspire the patient with confidence in the success of the operation, that the demon of fear may be exorcised from the sick room, that the spirit of hope may hover around the last few conscious breaths, and be the first to greet the awakening mind struggling back to consciousness.

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PLEURISY WITH EFFUSION AND PULMONARY TUBERCULOSIS, WITH CASES OBSERVED AT THE HARTFORD HOSPITAL.

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All who have studied the histories of tuberculous patients realize that there is an intimate relationship between pleurisy and tuberculosis of the lungs. Von Ruck[1] found that 22 per cent. of 1,000 cases were preceded by a pleurisy, but he considers that percentage too low in view of the number who have undoubted signs of pleuritis, yet give no history of pain or discomfort. Then, too, the subsequent histories of the cases of "idiopathic" pleurisy show that from 30 to 50 per cent. eventually die of tuberculosis, and we may presume that a considerable number become tuberculous yet die from other causes.

To explain this we may consider: (1) That their association is purely coincidental; (2) that the pleuritis paves the way for subsequent tuberculous infection by creating a point of lowered resistance; (3) we may assume that the pleurisy is caused by the tubercle bacillus. The first proposition we can reject as being untenable in view of the frequency with which the two conditions are associated. The proposition that the pleurisy predisposed to tuberculous infection cannot be as summarily dismissed. It is known that tubercle bacilli can pass through the wall of an alveolus and thence be carried by the lymphatics to the bronchial glands. In this way a bacillus may escape from a superficial alveolus and be carried along by the lymphatics ramifying on the surface of the lung, until arrested by a spot of pleura which at some previous time had been the site of an inflammatory process. Or a bronchial or mediastinal lymph node, already tuberculous, may, as the result of trauma or some acute illness, have its capsule ruptured or so weakened that the bacilli escape into the pleural sac. If the pleura is already the seat of pathological changes, the conditions are especially favorable for the development of a tuberculous lesion.

It is the third proposition, however, that has the greatest number of supporters, viz., that the pleurisy

is an evidence of tuberculous infection. Koch[2] obtained a tuberculin reaction in 72.3 per cent. of his cases, and Netter[3] found that 87 per cent. gave a positive reaction to tuberculin. By inoscopy (digesting and examining the coagulum) Jousset[4] found tubercle bacilli in a number of "idiopathic" cases, and others have demonstrated the bacilli by this method in fluid which gave negative results when injected into guinea pigs. According to Eichhorst's[21] inoculation researches two-thirds of all serous pleurisies are tuberculous. Cornet[5] considers primary tuberculosis of the pleura to be rare. He believes it is usually secondary to a superficial lung involvement, or to a tuberculous lymph gland. Hodenpyl,[6] on the other hand, believes primary miliary tuberculosis of the pleura is much more common than generally supposed, and that recovery occurs as a rule. He found evidences of a healed pleural lesion in nearly 50 per cent. of ninety-one adults who were free from other evidences of tuberculosis. Grober[7] showed that when the lymphatics are obstructed the current of the lymph is often reversed, so that afferent vessels become efferent. Thus he demonstrated that swollen tuberculous glands of the neck may obstruct the lymph and cause it to flow backwards, not infrequently carrying tubercle bacilli from the diseased gland down to the pleura. Recently Calmette,[9] who believes in tuberculosis by ingestion rather than by inhalation, has shown that involvement of the tracheobronchial glands may be secondary to a tuberculous infection of the mesenteric nodes, even though the latter seem free from disease. He and his coworkers found that the inoculation of animals with the mesenteric glands of children having tuberculosis of the tracheobronchial lymph nodes, always revealed the presence of tubercle bacilli in the mesenteric glands even though the latter appeared sound. Moreover they demonstrated that when small doses of bovine tubercle bacilli were fed to calves and kids the tracheobronchial and retropharyngeal glands eventually became enlarged, with or without lung involvement. The mesenteric glands which seemed normal were found by inoculation to contain tubercle bacilli. They also found by inoculation tubercle bacilli in the mesenteric glands of three children who gave no evidence of tuberculosis clinically. These latter findings are in accord with those of Rosenberger,[20] who demonstrated by inoculation that six out of fourteen cases (40 per cent.) who were free from any gross lesion of tuberculosis, had a tuberculous process in the mesenteric glands.

It remained for Widal[8] and Ravaut in 1900 to furnish us with a means of determining which of the pleurisies with effusion were tuberculous, and which were not. While subsequent investigation modified somewhat their original contention, yet their statement has been found correct, that a predominance of lymphocytes in an effusion speaks for a tuberculous process. Naunyn,[9] in 1903, observed that lymphocytes may also predominate in transudates, in long-standing infections, towards the end of an acute infection which is subsiding, or where the infection has been a mild one from its incipiency. The polymorphonuclear cells which generally predominate in an acute infection, have occasionally been found most numerous in the early days of a very acute tuberculous pleuritis, and sometimes in old tuberculous effusions, with demonstrable lung involvement. In the latter case, however, they are usually the forerunners of an empyema. Attention was drawn by Runberg[10] in 1897 to the difference in the amount of albumin in transudates and inflammatory effusions. In the determination of the specific gravity and the estimation of the amount of albumin we have a means of differentiating between transudates and tuberculous effusions, both of which show a predominance of lymphocytes. Carter[11] has shown that the cytological examination of the fluid is but one part of a complete examination.

The cases here reported were patients in the Hartford Hospital, and I am indebted for permission to publish them to the several attending physicians and surgeons on whose service they were admitted, and to Dr. W. R. Steiner, the attending pathologist, under whose direction much of the work was done. I have divided the cases into four classes. 1. Cases known to be tuberculous. 2. "Idiopathic." 3. Mechanical—Transudates occurring with kidney and heart disease. 4. Acute infections. It is fortunate that in several cases aspiration was performed more than once, as it demonstrates certain variations that may be met with, yet shows the uniformity of the results in general.

Class I.—*Cases known to be tuberculous.*

Case I.—Joseph B., age thirty-seven years, admitted August 12, 1904. Two sisters died of tuberculosis. Personal history: Had pleurisy five years ago; eight months ago caught cold, with dry cough. Since then night sweats, anorexia and loss of weight. Six days ago he became short of breath suddenly, and since has frequently been in fear of impending death. Pleural cavity was aspirated four times in nineteen days and over 4,000 c.c. in all obtained. Immediately after last aspiration adrenlin chloride (1-1000) 3i was injected into pleural sac, as suggested by Barr,[12] and there was no recurrence of the fluid while he was under observation, which was a period of four weeks. There were tubercle bacilli in the sputum.

Our experience demonstrated the advisability of giving a hypodermic injection of nitroglycerin gr. 1-50 when the adrenalin was used, which dose was repeated in case there was a sharp rise of blood pressure. When this was not done the heart action became very forcible, rapid and irregular in force and rhythm, the face anxious and drawn, and the mental condition one of great anxiety. Barr reported similar symptoms in one case in which he injected into the pericardial sac, but he did not observe it when the pleural sac was injected. The rapidity of absorption must vary in different cases. There were no unpleasant effects when the nitroglycerin was used in conjunction with the adrenalin.

Case II.—Agnes A., age twenty-three years, admitted October 2, 1905. Family history: negative. Personal history: Began coughing ten months ago. Five months later had "malaria" and night sweats. Has failed in strength. Lung extensively infiltrated; tubercle bacilli in sputum. Less than one ounce was aspirated.

Case III.—Samuel S., age twenty-nine years, admitted March 28, 1906. Father died of tuberculosis at age of thirty-six years. Personal history: Negative until three weeks ago, when he had a pain in the left side, and through upper part of left lung. Hard dry cough developed; 1,200 c.c. of blood-stained fluid removed from left pleural sac. Lungs seemed free from involvement, yet tubercle bacilli were found in the sputum.

Case IV.—John K., age thirty-three years, admitted March 5, 1905. Family history: negative. Personal history: Never been ill; never associated with a consumptive. About two weeks ago noticed a slight dry cough. The day of admission to the hospital, while in state of intoxication, was struck on the left side by a trolley car and knocked down.

He experienced severe pain in the side. Physical examination: All superficial lymph glands enlarged; heart negative; lungs, dullness merging into flatness from the sixth rib downward on the left side in mid-axillary line with diminution of breath sounds; abdomen, tense and tympanic with marked tenderness on left side. Two days later slight amount of blood in the vomitus and in the urine. Ten days later an area of consolidation was noted in the lower right lobe posteriorily; an effusion followed; temperature, 102°; pulse, 90. March 12 (one week after admission) leucocytes were 11,000 and on the 16th were 18,500. He was twice aspirated and each time tubercle bacilli were found in the fluid.

Class II.—*"Idiopathic."*

Case V.—Thomas S., age thirty-two years, admitted May 28, 1904. Family history negative. Had malaria eight years ago; three months ago he lived and slept with a man who had tuberculosis. He had been in good health until three days before admission, when he had a dull frontal headache, complete anorexia, nausea, prostration, and constipation, which symptoms have continued. Typhoid fever had been diagnosed by his physician. He had the usual signs of fluid in the left pleural cavity. Leucocytes were 8,200 and some days later 13,900. May 30, 720 c.c. were aspirated; two days later 450 c.c. were obtained, and at the end of a week 420 c.c. more were withdrawn. After the last paracentesis adrenalin chloride 3i was injected into pleural sac and the fluid did not recur. The lung did not appear to be involved.

Case VI.—Charles H., age sixty-one years, admitted July 19, 1904. His mother died of tuberculosis. Workman next to him in the shop continually coughs and expectorates on the floor. In good health until one month ago, when he felt pain in the left side of the chest. It slowly extended to right side as well, and since has had a sense of oppression in the precordium and shooting pains down the left side. For the past two weeks has had a cough. On day of admission 120 c.c. amber fluid were aspirated and 1,500 c.c. were obtained on the 25th. Leucocytes, 8,100. Gave positive reaction to 3 mg. of tuberculin.

Case VII.—Giovanni M., age twenty-three years, admitted February 26, 1906. Family and past history negative. Works in factory where he perspires freely and is often exposed to sudden changes of temperature. A few days ago while in perspiration he went outdoors and caught cold. Since has had slight cough and been feverish; no other symptoms whatever. Right pleural cavity aspirated and 720 c.c. obtained; no tubercle bacilli in sputum. For five weeks his temperature ranged between 104° and 100°, with pulse of about 110.

Case VIII.—Joseph M., age thirty-nine years, admitted October 15, 1904. One brother died of tuberculosis and another one has it at present. Personal history: Typhoid six years ago; about three weeks ago noticed a few sharp pains in the left side and complained of a feeling of malaise. Ten days ago felt a "tightness of chest" and began to cough. He tires rather easily, has had night sweats, anorexia and one chill. He had lost weight. (Eighteen months later there were tubercle bacilli in his sputum.) October 16, 960 c.c were aspirated and

CLASS I. KNOWN TUBERCULOUS.

	Case I.				Case II.	Case III.	Case IV.	
Date	Aug. 12, '04	Aug. 16, '04	Aug. 24, '04	Aug. 31, '04	Oct. 14, '05	April 2, '06	Mar. 20, '05	April 10, '05
Fibrin	consid'ble.	consid'ble.	consid'ble.	consid'ble.	.....	consid'ble.	.....	small amt.
Specific Gravity	1021	1016	1022	1021	.....	1020	1016	1020
Albumen	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.
Lymphocytes	60	84	.....	20	76	89.5	lymph'tes predom'ate	97
Polynuclears	8	5	.....	4	24	19.5		3
Large Mononuclears	.....	.....	.....	.....	.....	.....	.....	.....
Endothelial	32	11	cells few in number.	76	.....	1		many.
Erythrocytes	many.....	many.....	many.....	.....	.....	many.....	.....	.....
Remarks	.....	.....	.....	.....	Am't obt'd very small.	.....	Tub'le bac. f'nd in fluid	Tub'le bac. f'nd in fluid

CLASS II. "IDIOPATHIC."

	Case V.			Case VI.		Case VII.	Case VIII.		Case IX.
Date	May 30, '05	June 1, '04	June 8, '04	July 19, '04	July 25, '04	March 2, '06	Oct. 16, '05	Oct. 30, '05	Jan. 26, '05
Fibrin	consid'ble.	consid'ble.	consid'ble.	small am't.	consid'ble.	large am't.	small am't.	.....	.....
Sp. Gravity	1015	1022	1022	1017	1022	1020	1028	1020	1022
Albumen	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	boils solid.	consid'ble.
Lymp'tes	83.6	80	91	65	94	90	.....	98	64
Poly'clears.	2.8	6	5	6	.....	.....	?	2	12
L'ge Mono.	.....	.....	.....	1	6	few	.....	.....	15
Endot'lial	13	14	4	28	.....	few.....	predom'nt.	few.....	.....
Eryth'tes	.....	.....	.....	.....	.....	many.....	many.....	many.....	.....
Remarks	.....	.....	.....	.....	.....	prac. pure lymp'tosis.	cells not counted....	.....	eosinp'les-8

October 30, 660 c.c. were obtained from the pleural cavity. Temperature, 102-103°; pulse, 90, slowly reaching normal.

Case IX.—Carrie B., age nineteen years, admitted January 11, 1905. A sister died of tuberculosis six years ago. Patient lived with her, but did not share same bed. Previous history negative. Eleven days before admission attempted to produce an abortion with a crochet needle. The day following repeated the attempt twice. The next day fetus and afterbirth were expelled. Four days later began to have fever, considerable foul smelling vaginal discharge and occasional chills. After the first few days in the hospital the vaginal discharge grew materially less, and the local condition seemed hardly to account for her temperature. A week after admission it was observed that fluid was collecting in the right pleural sac, and January 26, 620 c.c. of blood-tinged serum were aspirated. Eight days later, as fluid had recurred, she was again aspirated and 360 c.c. of amber-colored fluid were obtained. She had a cough with greenish expectoration and had several night sweats, not associated with a chill. No tubercle bacilli found in sputum. Temperature, which on admission was 104°, pulse 102, reached normal by lysis. When discharged, one month after admission, there was, in addition to evidences of a tuberculous effusion were it not for the low gravity. At the autopsy the pleura was found to be normal.

Class IV.—*Acute infections.*

Case XIII.—William M., age fifty-three years, admitted June 20, 1905. Father died of tuberculosis thirty years ago. Patient was at home at the time. A brother died of the same disease nine years ago and lived with the patient for the three weeks preceding his death. A grandmother died of "tuberculosis and asthma." Has always been well except for rheumatism twelve years ago and pneumonia six years ago, from which he recovered in a few weeks. He was brought to the hospital as the result of a stab wound of the left side, above the sixth rib and eight and one-half inches from midsternal line. The pleura was apparently intact, as there was neither pneumothorax nor subcutaneous emphysema. The lungs were clear. The wound healed readily, there being apparently no infection. June 26, six days after admission, a friction rub was heard above the sixth rib, left side. A pneumonia developed and an effusion followed; 140 c.c. of bloody fluid were aspirated, in which the polynuclear cells were found to predominate. Temperature, 103°; pulse, 100. He made an uneventful recovery, and nine months after discharge was in excellent health and his lungs appeared to be sound.

	CLASS III. MECHANICAL—TRANSUDATES.						CLASS IV. ACUTE INFECTION.
	Case X.			Case XI.	Case XII.		Case XIII.
Date	June 8, '04	June 23, '04	July 6, '04	June 2, '04	June 28, '04	July 2, '04.	Jan. 26, '05.
Fibrin	slight	slight	slight	none	slight	slight	
Specific Gravity	1012	1012	1008	1006	1010	1008	not recorded.
Albumen	h'vy cloud.	h'vy cloud.	60% vol'e.	cloud	60% vol'e.	b'ils almost solid	not recorded.
Lymphocytes		85		3.3	54	90	4
Polynuclears				96.7			03
Large Mononuclears	2	3			9	6	Large Mono. 12
Endothelial	3	12			37		a few.
Erythrocytes							present.
Remarks	cells very few		not ex'm'd at once: c'ls degen'ated	see notes of case.			Eosinophiles, 3.

thickened pleura over right lower lobe, slight dullness, increased voice and whisper, and râles at the right apex. After leaving the hospital she lived out of doors for several months and gained in flesh and strength. In the fall of 1905 she had a slight dry morning cough for a few days. Otherwise in excellent health. Fourteen months after her discharge from the hospital I examined her in my office and found slight dullness above and below the right clavicle at the end of deep inspiration, and distant breath sounds at the right apex. Over the lower half of the right lower lobe were dullness and many dry râles, which were heard both posteriorly and laterally. Her temperature (3 P.M.) was 100°; pulse, 92.

The histories of the cases in Class III.—transudates—are omitted, as they are not especially noteworthy. Case XI was very edematous when admitted and had a right hydrothorax. He developed a pneumonia of the left upper lobe in a few days and had a leucocytosis of 51,000. The low specific gravity and the small amount of albumin stamped the fluid, which was subsequently withdrawn, as a transudate even though the polynuclears suggested an acute effusion.

In Case XII the large amount of albumin and the predominance of lymphocytes would indicate a

Several of these cases are deserving of more than passing notice. Case IV had never been exposed to consumption to the best of his knowledge, nor could any history of previous tuberculous infection be obtained other than a slight cough for two weeks previous to admission. He received a severe injury which caused, among other things, a pleuritis with effusion that not only showed the characteristics of a tuberculous effusion, but contained tubercle bacilli. Evidently he had an infected lymph gland, either bronchial or mediastinal, which ruptured when he was injured. Lymph glands harboring tubercle bacilli are not uncommon. Loomis[13] demonstrated that the bronchial lymph nodes in eight out of thirty adults apparently free from tuberculosis, contained tubercle bacilli, and Northrup[14] found that in eighty-eight of ninety-one cases of tuberculosis the primary focus was in a bronchial gland. Thus we see that tubercle bacilli may remain locked up, as it were, in some lymph gland, for a greater or less period of time, until some trauma or an acute illness acting as a turnkey, liberates them to their work of destruction.

One of Musgrave's[15] cases was caused by trauma, and though it showed the characteristics of a tuberculous effusion, he classified it with the "mild infections" of Naunyn, as there was no history indica-

tive of tuberculosis. In view of the number of cases reported where trauma appears to have been the determining cause of tuberculosis, it would seem that one is hardly justified in excluding it because of the absence of the usual symptoms. Netter[16] believes that 68 per cent. of the cases attributed to trauma are due to tuberculosis. Recently I saw a woman who had been in good health up to six months ago, when she fell downstairs and struck on her head. Since then she complained of pains of increasing severity in the back of the head. Examination of the spinal fluid showed tubercle bacilli.

The following case, not included in this series because of incomplete data, is nevertheless of interest in this connection from its clinical aspect alone. Belle E., age fifty-four years, was admitted to the Hartford Hospital September 15, 1904. Her husband died of tuberculosis. Twenty years ago she was ill for four months with "malaria." Since she has enjoyed good health and worked hard for a living. The day of admission she fell down an elevator shaft, sustaining a scalp wound, a laceration of the right thumb, and a fracture of the left scapula. On admission the lungs appeared to be negative. October 18, almost a month later, a friction rub was detected over the left sixth and seventh interspaces. An effusion formed, and on October 21, 1,020 c.c. of reddish serum were aspirated. The fluid was not examined. She remained in the hospital nearly three months, having a little cough, and during the last month profuse sweats nearly every night, which were only partially controlled by belladonna. When discharged there were a few fine râles over both lower lobes posteriorly, and in addition dullness and faint breath sounds over the left one. Temperature, 100-101°; pulse, 100; laterally was normal. In view of the late appearance of the fluid (one month after injury), its sanguinous color, and the development of profuse night sweats a month later, we may consider this as being in all probability a tuberculous (traumatic) pleurisy.

Case III appears to have been in his usual health until three weeks before admission, when he had a pain in his side, and a cough, yet tubercle bacilli were found in the sputum. Case VI had no symptoms referable to his pleura, and was thought to have typhoid fever. In Case VIII there was no history of exposure to consumption nor any previous sickness. He merely "caught cold," yet the subsequent course of his illness as well as the examination of the fluid left no room for doubt concerning the diagnosis.

Case X seems to be the most interesting and at first glance would appear to belong to the class of acute infections (mild type). An abortion, followed in four days by an infection, and at the end of two weeks by a pleurisy. From a superficial observation it would seem that the pleurisy was secondary to the infection of the endometrium. But the picture changes as we carefully analyze it. Not until the uterine condition was materially improved, and two weeks from the onset of the illness, did the pleurisy develop. Following the first aspiration the fluid recurred, necessitating a second tapping. She had a cough with greenish expectoration and night sweats, and at the end of a month had evidences of slight activity at the right apex, and a thickened pleura over the base. Fourteen months later she had an afternoon temperature of 100° and a pulse of 92, signs of a healed lesion at the right apex and a "smoldering" one in the lower lobe.

In Classes I and II the tuberculous effusions, the average specific gravity of sixteen examinations was 1,020, the lowest being 1,015, and the highest 1,028. They were characterized by a considerable amount of fibrin and a large amount of albumin, all but one boiling solid. The lymphocytes in all cases exceeded the polymorphonuclear cells, even in the cases with demonstrable lung involvement, and in those examined during the first week. Two cases of tuberculosis of the peritoneum were also studied, and the fluid was found similar in all respects to that occurring with tuberculosis of the lung.

Class III, the transudates, were characterized by a much lower specific gravity, the average of six examinations being 1,009 with 1,006 the lowest, and 1,012 the highest. They contained regularly less albumin and fibrin and the lymphocytes were in excess in all uncomplicated cases where the cells were not too degenerated to be counted.

Class IV.—The acute infections. It is a source of regret that this class is so incomplete. Many observers, however, have found that the cases due to acute infections have a relatively high gravity and contain as much albumin as the tuberculous effusions, but differ from the latter in the predominance of polynuclear cells, as is shown in Cases XIII and XV.

From a study of these cases we must conclude that all effusions within the pleural cavity are to be considered gravely, as a large majority of them are of tuberculous origin. We must realize that though a positive history is of the utmost importance, a negative one is absolutely valueless in excluding tuberculosis, and that pleurisies due to "cold" and "rheumatism" are legends which have come down from ancient medicine. Osler[17] recognizes three groups of serous effusions: (1) Pyogenic; (2) metapneumonic; (3) tuberculous; and in the absence of a pneumonia or a septic condition he considers the very presence of a pleural exudate sufficient to raise the question of tuberculosis. Concerning rheumatic cases, Osler mentions the following: A girl of sixteen, who had had two attacks of acute articular rheumatism with valvular involvement, was admitted to the hospital with chorea and an acute arthritis. While under observation she developed a sore throat, fever, pain in the left side, and urgent dyspnea. She died and at the autopsy the cardiac valves showed signs of ancient and recent inflammation, and the left pleura was the seat of an acute tuberculous process.

In the complete examination of effusions we have a means of diagnosis, not infallible of course, yet one in which we can place considerable confidence. It is a method well adapted to the needs of the busy practitioner, as neither guinea pig nor a thermostat is required. Noting the amount of fibrin, determining the specific gravity, and estimating the percentage of albumin by boiling with acetic acid, take but a few minutes. The fluid is then centrifuged for five minutes and the sediment removed by means of a glass pipette to a slide, dried by heating *very gently* and stained with Wright, Jenner, or gentian violet. The cells are usually numerous, so it takes but a short time to make the count. The fluid should be examined at once, as the cells degenerate quite quickly on standing. Gentian violet may be dropped on the sediment before it dries and a wet mount be made.

With proper facilities the clot should be digested, as suggested by Jousset, and the centrifuged product examined for tubercle bacilli.

Do not tell your cases of pleuritis that it is "only a little pleurisy" and send them on their way rejoicing, with a prescription for iodine, and never a word about fresh air. Moore[18] wisely says, "We are to think of pleurisy as an indication of some general

morbid condition and more often of some bacillary infection, and not to imagine that it is a mere affection of the pleura." Tell them that it is probably caused by the tubercle bacillus; assure them that they will get well, and warn them that they must take especial care of their health for a number of years lest a more serious condition ensue.

By such advice we will avert many cases of pulmonary tuberculosis.

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417 ALBANY AVENUE.

ACUTE MASTOIDITIS, ITS PREVENTION, DIAGNOSIS, AND TREATMENT.

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ACUTE mastoiditis occurs either following an acute suppurative process in the middle ear or as an accompaniment of a chronic process in the tympanum, the latter being more frequent on account of the general tendency to neglect cases of chronic otorrhea. The best preventative treatment of acute mastoiditis occurring during an attack of acute otitis is the proper treatment of the latter condition itself. The patient should be kept in bed for several days at the onset of the attack and not allowed to attend to business affairs. It is sometimes difficult to insist on this, especially after the membrana tympani has broken and the acute pain has subsided, but it will undoubtedly shorten the period of convalescence by several days, and frequently prevents the discharge from becoming permanent. The rest in bed should be insisted upon for two or three days, and particularly as long as any mastoid tenderness is present. It is the attempt to continue business while middle-ear suppuration is in the acute or subacute stages that causes so many of them to become chronic. A good cathartic should be given and repeated as frequently as is necessary to keep the bowels moving freely. Calomel followed by a saline is preferable for this purpose. If the attack is very acute, the temperature elevated, and the pulse rapid frequent small doses of tincture of aconite are sometimes of value. The first and most important procedure, however, is to give vent to the pus and accumulated secretions by an early and free incision in the membrana tympani. This should be done in every case of acute suppurative otitis media as soon as any bulging can be demonstrated. It is a popular fallacy that paracentesis is unnecessary after the drum membrane has ruptured spontaneously. The absurdity of this is at once apparent when we consider that a small perforation may be present in the upper part of the drum sufficiently large to allow the discharge from the canal to be copious and to relieve all pain, and yet leave the middle ear at all times filled with pus in contact with the delicate mucous membrane. The continued inflammation induced and maintained in this way is the most potent factor in the production of thickening of the membrane and intratympanic adhesions, and the permanent deafness that so frequently remains after the suppuration itself has ceased. A free paracentesis, then, is the first and most essential step in the treatment of acute suppurative otitis media and the prevention of mastoid involvement, regardless of the absence of pain or the freedom of the discharge. It should be performed under a general anesthetic, either nitrous oxide gas or ethyl chloride sufficing, and it should be done by one sufficiently skilled in its performance to insure a large opening in the proper position. Occasionally, in adults of phlegmatic temperament, local anesthesia may be used, but this frequently results in obtaining only a puncture instead of an incision, on account of the difficulty the patient experiences in remaining quiet when the knife is felt on the drum, even though it produces no actual pain. It may seem to a good many who have seen ears suppurate and get well in six weeks or so that I have laid undue stress on the advisability of early paracentesis, but the damage done by delay is not always apparent until after the lapse of several years, when the tests for hearing will show an ear functionally very deficient. In other cases the result of delay is immediately apparent in the onset of mastoiditis, or the persistence of a chronic otorrhea. After free drainage is thus established it is essential to maintain it by a daily inspection of the perforation in the membrana tympani; and should it show a tendency to close, it should be reopened as frequently as is necessary to maintain perfect drainage for the pus in the lowest part of the tympanic space. The canal should be regularly douched with at least one quart of hot bichloride solution every two hours. If it is possible to pack the canal afterward with a strip of gauze carried as far as the perforation, this will add to the drainage; but owing to the fact that it requires frequent changing, in any but hospital cases this is impracticable, and the douching alone is sufficient. As otitis media generally has its origin in some infection from the nose or nasopharynx, it is important to keep those parts cleaned with an alkaline solution, best applied by means of an atomizer.

A form of treatment that has recently come into use, in acute middle-ear suppuration, not so much in this country as abroad, is that suggested by Bier. It consists in producing a passive hyperemia of the

ear, by encircling the neck with an elastic band for twenty-two of the twenty-four hours each day. It is claimed that by retaining more serum in the affected region, its bactericidal action overcomes the resistance offered by the bacteria present, and the infection is thus rendered inactive. It has not met with many advocates in America, and my personal experience with it has been too meager to warrant my doing more than simply mentioning it.

In speaking of the prevention of mastoid trouble it is necessary to mention chronic otitis media and its care. Chronic otitis is probably the most prolific cause of acute mastoiditis. The infection is always present, and it requires only some increase in the discharge or the accidental entrance of some of the infected material into the mastoid cells to precipitate an acute attack. On this account chronic otorrhea deserves far more careful attention than it usually receives. If any necrosis be present in the bone it should be carefully removed through the canal if possible, or even by a more radical operation. Any adenoid vegetation should be carefully and thoroughly removed from the nasopharynx and the general condition of the patient attended to. Such local treatment as is demanded in each case should be faithfully given.

If, in spite of all our precautions, mastoiditis should develop, it is readily diagnosed in the majority of cases, only occasionally offering difficulties in this respect, unless it complicates some systemic disease. When dealing with middle-ear trouble we should always be on the lookout for mastoid involvement. About its first indication is more or less tenderness over the mastoid region. The precise location of the pain is of considerable diagnostic significance. Tenderness will nearly always be found over the mastoid tip in every case of otitis media, even in the serous variety, and it does not indicate involvement of the mastoid bone. On the other hand, tenderness to pressure manifested only when considerable force is exerted over the mastoid antrum points to an extension of the process from the middle ear to the antrum itself, while if it extends downward from the antrum toward the tip the mastoid cells have probably been attacked. Slight tenderness may remain for several days without requiring operation, and in 90 per cent. of cases will clear up. On the other hand increasing tenderness, even though there be amelioration of the other symptoms, must always be regarded with due respect. Pain is not by any means a constant symptom; in fact, it is rarely present. Instead of being localized to the mastoid region, it assumes the form of a headache, which may be greatest on the affected side. Pain is more liable to be troublesome in chronic mastoiditis than in the acute variety. Temperature is of small diagnostic value. In children we frequently find some elevation, but it rarely reaches higher than 99° to 100° in adults, unless some more serious condition than a simple mastoiditis exists. When we do have an elevation of temperature it is of value in connection with other symptoms, but its absence means nothing, as in the most extensive involvement of the mastoid it is frequently normal, and almost invariably reaches a higher point after operation than before. The position of the head is somewhat characteristic at times. Owing to the inflammatory action extending to the sheaths of the muscles attached to the mastoid tip, there is a tendency on the part of the patient to hold the head inclined to the affected side and to avoid movement as much as possible.

Sagging of the posterior membranous canal wall has been considered a valuable symptom of mastoiditis, and is frequently the deciding point when operative interference is in doubt. This is probably produced by extension of the inflammatory process from the antrum to the periosteum of the canal, causing the soft tissues to swell and partially obstruct its lumen. By some men this is considered almost a pathognomonic symptom; but it has always seemed to me that the same condition might be produced by extension of inflammation from the tympanic cavity itself without there being pus formation in the mastoid. If this tumefaction is present it is important, in making our paracentesis, to extend the incision well on to the canal wall.

A symptom of the greatest importance, and one that is very often overlooked, is the amount, and variation in the amount, of discharge. A moment's consideration will show the value of this symptom. The middle ear being a comparatively small cavity, it is possible for the membrane covering its walls to produce only a certain amount of discharge. If this is markedly increased it shows undoubted involvement of the other spaces, namely, the antrum or the mastoid cells.

I have frequently been able to diagnose mastoiditis requiring operation, practically on this symptom alone. Again, if we have a case discharging freely a small amount for a couple of days, and then suddenly the amount increase two- or threefold, it is fair to presume that some new source of supply has been added to that already existing. These remissions and exaggerations in the amount of discharge may occur several times, and, to my mind, they offer one of our best diagnostic points, especially in adults.

Swelling, edema, and redness are late symptoms, and when they are present of course there is no doubt in our minds regarding the diagnosis. We should not wait for them to appear, particularly in adults, as a most destructive process will exist without the slightest swelling. In children they are almost constant symptoms, and often the very first to draw our attention to the ear. Owing to the softness of the bone before four years of age, perforation externally is the rule. This usually occurs early in the course of disease, with attendant swelling and redness, and these symptoms mark the presence of a subperiosteal abscess. Swelling, therefore, is most important in children, and is one of our best aids in diagnosis, on account of the difficulty in estimating tenderness; on the other hand it is a rare thing to find it in adults except in cases far advanced. Occasionally a slight tumefaction of the tissues in this region can best be discovered by a comparison of both sides. It may cause the auricle to be protruded slightly more than its fellow, and the mastoid region occasionally presents an appearance of prominence without any appreciable increase in the thickness of the soft parts.

Symptoms of absorption are occasionally well marked in ambulatory cases of mastoiditis as well as in those that are more acute. Within a month I have operated upon a case of this nature. The child had a profuse discharge from the ear for several weeks and was gradually running down hill, but nothing occurred during that time to draw attention to the mastoid. At the end of about six weeks the mastoid swelled and became slightly tender. On operation a large cavity of pus was found in the mastoid, which fact explained both the large quantity of discharge and the general symptoms of absorption. These constitute the principal symptoms of acute mastoiditis, the most important of which are tenderness, swelling, and the large quantity of discharge. The large majority of cases which are

taken early clear up without leaving any serious results or markedly impairing the hearing. If a case showing mastoid tenderness be seen early, that is, within the first twenty-four hours, the treatment already outlined for acute otitis should be commenced at once, and an ice bag or an ice coil applied to the mastoid process. Very rarely any good is to be accomplished from the use of ice, but occasionally it relieves the pain if any is present. It should not be continued longer than thirty-six hours under any circumstances on account of its tendency to mask a serious condition in the bone. I have seen mastoids full of pus in which both the pain, and swelling and even the tenderness had entirely subsided under an ice coil only to give trouble again in a short time. After the lapse of thirty-six hours local application of either heat or cold to the mastoid itself have practically no effect, but if in order not to appear negligent it is necessary to do something, dry heat is preferable. The Bier treatment is occasionally used in the early stages of mastoiditis, but owing to inexperience with it I am unable to say what virtue it really possesses. At best it should be used only by those familiar with it, as its employment entails some danger. The damming back of the circulation in persons with hard arteries or cardiac lesions is liable to induce cerebral hemorrhage, etc., and in such cases the Bier treatment should not be used. If, after a few days, the tenderness does not subside the question of operation presents itself, and it is frequently a difficult one to decide. It is not desirable to open a mastoid which is simply congested, and on the other hand it is occasionally embarrassing to find a mastoid that has been under observation, entirely disintegrated at the time of operation. Where there is any doubt I think it is conservative surgery to operate early, not only to prevent extension to such important structures as the sigmoid sinus and the meninges, but to preserve the hearing. Some men go so far as to advise operation on the mastoid for the purpose of giving drainage from the middle ear, even though no mastoid symptoms are present and no involvement is suspected. While I consider this too radical for general application, there is no doubt the maintenance of posterior drainage conserves the hearing to a remarkable degree. The operation, if done early, is as safe as almost any, requiring the administration of an anesthetic, while if delayed too long a much larger area of bone requires to be sacrificed, the patient's general condition is not so favorable on account of continued absorption, and a thrombosis of the lateral sinus, cerebral abscess from direct extension, and meningitis may be induced. The condition can be well compared to appendicitis. One cannot tell precisely what is present until the time of operation in either case. In appendicitis it is considered more safe to do an exploratory operation than to take any chances, and I think the same principle holds good in dealing with mastoiditis. Undoubtedly, an occasional mastoid is opened when recovery would have taken place without operation, and one case of this kind leaves with the casual observer the impression that it is of frequent occurrence, while on seeing a thorough disintegration it is considered exactly what was to be expected. The more familiar one becomes with the consequences of palliative treatment long continued, the stronger is the inclination to operate where a reasonable doubt exists. After observation of at least five hundred operations at the Manhattan Eye, Ear, and Throat Hospital I cannot recollect having seen more than six or seven healthy mastoids opened. To illustrate the difficulty of positive diagnosis I will cite a case occurring about six weeks ago. Following a severe attack of grip the patient, a man of about thirty years, developed acute otitis media in the left ear and three days later in the right. I saw him on the second day of the onset of trouble in the second ear, and immediately did a paracentesis on both drums. Both mastoids were about equally tender for the next five or six days and there was free discharge from both canals. His general condition was very poor. He was anemic and showed plainly the effect of his illness. At the end of ten days the physician in charge of the case telephoned me that the amount of discharge from the left ear had greatly increased, as had also the area of mastoid tenderness. I saw him that day, and the two ears presented almost the same condition. Both mastoids were tender and painful, and, with the exception of the difference in the amount of discharge, apparently they were identical. His leucocyte count was 17,000 and temperature about 103 degrees, so I operated immediately on the left side. It would be difficult to imagine a more thoroughly necrotic mastoid. The necrosis had progressed to the lateral sinus, which was covered with protecting granulation throughout one inch of its course. After seeing the condition on that side there was not the slightest doubt in my mind that the other side was nearly as bad, but on account of his poor condition and the time of anesthesia required, owing to the extent of the disease, we decided it would be better to wait a few days before operating upon it. After three more days of careful treatment the discharge ceased, the mastoid tenderness disappeared, and apparently there is no further trouble there. Here were two ears in the same individual, necessarily under the same conditions of personal resistance and about as much alike as possible, one developing an extensive destruction of the mastoid, the other recovering entirely. I relate this case simply to show how difficult it is to be positive in our diagnosis or prognosis, and in addition it illustrates what I have already stated, that it is much safer to operate when any doubt exists than to take dangerous chances by waiting. It would have been very much better to have opened the one which recovered than to have left the other a day longer, in which time a thrombus might have been formed in the sinus. A somewhat similar condition occurred in a boy of eleven years. There was no history of discharge from the ear, and at the time of examination the drum head and surrounding parts appeared perfectly normal. There was very slight edema with tenderness over the mastoid, and the temperature was 101 degrees. The boy, though not feeling very ill, showed some signs of septic absorption and I decided to operate upon him, although I am free to confess I would not have been surprised to find very little or no trouble at all in the mastoid. The mastoid bone itself gave every sign of being healthy until the plate covering the lateral sinus was reached, when a large perisinus abscess was discovered. Taking into consideration just such cases as these, in which it is impossible to tell the exact condition, I think to operate is the most conservative course.

As to the operation itself, considerable improvement has been made in the technique within the past few years. Instead of simply opening the mastoid antrum and allowing the pus to escape, in the majority of cases, the entire process including the tip is thoroughly removed in an effort to avoid recurrence from remaining infected cells.

Each operator usually follows a technic of his own, some advocating a "T" shaped incision in all

cases, others only when it is necessary on account of the extent of the necrosis. The manner of procedure is unimportant; it matters little whether we begin the excavation of the bone at the antrum or at the tip, so long as every particle of necrosis, as well as parts that are liable to become necrotic, be removed. The cells behind the sigmoid sinus and those in the zygomatic region should be opened, even though in doing so the dura or lateral sinus be exposed. Such exposure rarely does any harm, whereas a few necrotic cells covering them will continue the discharge and endanger their integrity. This is where the greatest liability to faulty technique exists, because, when apparently healthy bone is reached, one who is not familiar with the vagaries of mastoiditis is tempted to desist from its further removal. If this be done even large sized cells filled with pus may be left in the region of the mastoid tip. It is of considerable importance to leave a bone wound of a favorable shape for healing—that is, to have it as shallow as possible and wide at its bottom. When this is accomplished there is not so much tendency to the formation of a fistula leading into the antrum.

A portion of the prominent posterior canal wall and anterior mastoid margin should be removed in order to allow the soft parts to fall in. This renders the cavity more shallow, requiring less time to fill with granulation, and it leaves less deformity after cicatrization has taken place. The principal object then is to remove, in the most thorough manner, all bone that has already undergone necrosis and, in addition, that which may at any future time do so. When mastoiditis has developed in a case presenting granulations in the tympanum, and where there has been a chronic offensive discharge, a simple mastoid operation is usually inadequate, and the radical Schwartze-Stacke operation will be required.

In conclusion I will say just a word about the after-treatment in operated cases, because that usually falls to the lot of the general physician. It requires a great deal of care and patience and in the most favorable cases healing requires at least six weeks. It is our aim to force the wound to granulate from the bottom. Occasionally the granulations form more rapidly toward the surface than they do in the antrum region. When this happens it is essential to destroy them, either by cutting them with a scissors, or by a caustic of some kind. Ortho-chloro-phenol is very useful for this purpose. If the condition be observed early enough firm packing at the margin, with gentle packing in the deeper parts will control the excessive granulation. It may be necessary to stimulate the granulation with balsam of Peru, or by rubbing them with a cotton-wound applicator. Another important thing is to prevent the skin from dipping into the wound, because its lowest point necessarily marks the level to which the granulations will grow. If it is allowed to dip in before the excavation is filled a depression results. In packing the wound it is advisable not to let the gauze slide over the skin margin because the inward growth of the epithelial cells is thus aided. At each dressing the skin should be gently pressed back. Frequently a fringe of granulations will form all around the margin of the wound, offering an insurmountable barrier to the epithelial cells. This should be left until the central granulations are sufficiently high and then cut away. The epithelium will usually rapidly spread from all directions when this is done. Unfortunately, in spite of the most careful technic at the time of operation, and the most skillful dressing, we are occasionally forced to operate a second time. The wound does best if dressed about every other day. The middle ear should be drained by a piece of gauze inserted into the canal and changed at each dressing. If the wound shows a tendency to become sloughy a few moist dressings of corrosive sublimate usually cleans it nicely. While treating the wound itself it is most important to look to the general health of the patient. He should be allowed out in the air and sunshine as soon as possible and everything done to improve his metabolism.

42 West Forty-Seventh Street.

HAY FEVER AND PERSISTENT BRONCHIAL ASTHMA RELIEVED BY TREATMENT DIRECTED TO THE ANTRUM OF HIGHMORE.

By JACOB E. SCHADLE, M.D.,

ST. PAUL, MINNESOTA.

Three weeks ago Mr. W., aged fifty years, was referred to me by his family physician for advice regarding a nervous nasal catarrh and bronchial asthma from which he had been suffering almost constantly for a period of two years. In the autumn of 1904, while on a visit to the St. Louis World's Fair, he contracted what he supposed to have been a severe "cold in the head," which was followed by asthmatic seizures. This condition of things continued for some time, when it was determined that his case was one of hay fever. According to the patient's statements, he suffered thereafter in the winter as much as in the summer. The asthma was principally nocturnal, causing much discomfort and inconvenience, the patient being compelled to sit up through the night and sleep in a chair to obtain relief. He depended on the effects of antispasmodics, and became more or less addicted to their use. The usual palliative remedies recommended for hay fever, as well as the generally recognized medicaments for asthma, had been repeatedly tried without giving satisfactory results.

When this man first came to me he was in great distress from both the hay fever and the asthma, though otherwise he was healthy and robust. On examination his nose was found to be absolutely stenosed, the mucous membrane being edematously congested and swollen, thus rendering nasal respiration utterly impracticable. After reducing as much as possible the acutely swollen mucosa by the use of cocaine and adrenalin, it was observed that chronic hypertrophic rhinitis existed.

The eye symptoms of hay fever were characteristic—injection of the conjunctival vessels, burning and itching sensations, and hypersensitiveness to light. The throat symptoms presented the usual subjective sensations peculiar to the disease.

Taking the history of the case into account, as well as the array of neurotic symptoms, I diagnosed the condition hay fever asthma. As for a number of years I had been making observations and experiments along the antral theory of the disease, it occurred to me that the present case was typical, and would afford an excellent opportunity to test the correctness of the theory and the virtue of the method of treatment which I had pursued with satisfaction in many other cases in the period mentioned. Accordingly, both antral cavities were irrigated with a warm boric acid solution until the return fluid was clear and perfectly free from sediment. The hypersecretion of

the cavities was marked, and it required considerable irrigation to clear them.

The sinuses were then freely insufflated with thymol iodide, and the patient was advised to return the next day for further observation and treatment. He presented himself the following day as requested, when it was ascertained that the nasal symptoms had been ameliorated, but the asthma was the same. The hypersecretion of the antra was markedly lessened. He received the same treatment for five successive days, each subsequent visit showing an improvement over the preceding one. On the night of the third day of the treatment he found that he was able to lie down and sleep, being interrupted, however, several times in the night by slight asthmatic attacks. Ever since the third day of treatment all the symptoms have disappeared, and now I see him occasionally for purposes of observation and a study of the behavior of the antra.

Other treatment, apart from what is above described, was not required. Neither was his environment changed. This case illustrates, in a rather conclusive way, the intimate relationship existing between a morbid state of the maxillary sinuses and the local and general phenomena symptomatic of hay fever. The antral theory embodies these factors, namely, that the antrum of Highmore provides the secretion that forms the agent that causes the local irritation in the sinus and nasal passages alike.

The various agents producing irritation of the antrum come from without, and when they are brought in contact with the mucosa an inflammatory disturbance is initiated which involves the sensitive nerve endings and secretory nervous fibers of the mucous membrane. Primarily, it is this inflammation and consequent secretion of the cavity that form the active factor in the production of the disease. The discharges proceeding from the antrum into the nasal passages inaugurate the nasal and nervous phenomena, owing to their irritative properties.

The central and sympathetic nervous systems become thus disturbed by the local disturbance, and neurasthenic symptoms manifest themselves. To abort or control an attack of hay fever, this theory presumes that treatment of an antiseptic character must be directed to the inflamed and hypersecreting antrum.

A POSSIBLE DANGER IN THE THERAPEUTIC USE OF OSMIC ACID.

By ARTHUR E. HERTZLER, M.D.,

KANSAS CITY, MO.

At the recent meeting of the Western Surgical Association J. Rilus Eastman reported a case in which hematuria followed the injection of a solution of osmic acid for neuralgia. No other evidence of renal involvement was noted and the patient recovered. Slight as was the disturbance, it points to a possible danger from the therapeutic use of this agent. The essayist offered no explanation for the urinary disturbance noted. This leads me to report, as of possible interest, some observations made with this chemical in my researches on the peritoneum.

Osmic acid, in common with several other minerals used in microtechnique (*e.g.* silver nitrate and gold chloride), acts differently from true stains in that a definite reaction takes place, producing a precipitate of a more stable compound of the metal. This result takes place in recent tissue only—tissues still living or within 24 to 48 hours after death. These chemicals act on definite substances in the tissue. Silver nitrate is the only one of this group which has been definitely worked out.* With this substance a combination with the chlorides of the tissues takes place, forming the silver chloride. This compound is nontoxic when exhibited by the mouth but rapidly fatal when injected into the blood-vessels or into the abdominal cavity. This may be easily demonstrated by injecting a large quantity of normal salt solution into the free peritoneal cavity of an animal and then following it by the injection of a solution of silver nitrate, in a much smaller amount than would be required to combine with the chlorine present in the salt solution. There results from this a precipitation of silver chloride. The NaCl not required to combine with the $AgNO_3$ remains as an innocuous solution. The same results are obtained by allowing the reaction to take place in a beaker and afterwrad injecting it in the peritoneal cavity. In this latter experiment larger masses of the AgCl are formed and effects are in consequence less prompt. The animal, as the result of either experiment, dies after a few hours. Death is due for the most part to an absorption of the particles precipitated, first into the connective tissue spaces and then into the blood-vessels. (An argument incidentally in favor of the blood-vessel rather than the lymphatic route of absorption.) These particles are transported through the vessels to the various parts of the body (as is seen in the argyria from the therapeutic use of silver). Curiously enough the kidney capillaries are the depositaries of a greater amount than those of any other parenchymatous organ. The deposition is accompanied by a petechial hemorrhage in many parts of the kidney.

With osmic acid it is more difficult to trace the reaction. We know, however, that a precipitate forms not unlike that of silver except that the particles are larger. This holds good at least as used in the peritoneal cavity. What elements in the tissue combines with the acid is not known. However, when a dilute solution of the acid is injected into the free peritoneal cavity, particles may be discovered in the kidney just as in the case of the silver chloride, with the small hemorrhages accompanying, which is the interesting point in the present consideration.

It has long been known that in argyria a large number of granules are found in the pericapillary connective tissue. They are surrounded by an increase of fibrous tissue, probably the result of previous capillary hemorrhage. That no great mischief is done can be readily understood by the slow process of deposition.

The small amount of osmic acid used in the treatment of neuralgia is probably not great enough to jeopardize the life of the patient. Still these observations suggest that there is a limit to the amount of the chemical which can safely be used in our therapeutic endeavors.

*Hertzler, A. E.: The Morphogenesis of the Stigmata and Stomata of the Peritoneal and Blood-vessel Epithelium. Transactions of the American Microscopical Society, 1901.

A Grewsome Reminder.—When the floor of the operating theater of the old hospital at Canterbury, England, was torn up the other day, the rings were discovered through which were passed the cords for tying patients down on the operating table prior to the discovery of anesthetics.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A WARNING TO THE INTENDING STUDENT OF MEDICINE.

THE Association of French Physicians has recently issued a circular to candidates for the bachelor's degrees in letters or science, and to their parents, warning against taking up the study of medicine without a full knowledge of the "miseries of the profession" and the burdens which await those who aspire to a medical career. The following is, in part, the text of the circular: "As you are about to end your academic studies, and as you are now facing the choice of a career, you are doubtless interested in studying the various advantages of each vocation before making a decision which may affect your entire future. The different liberal professions may have claimed your attention, and among them the medical profession, which passes wrongly for an easy and lucrative calling. This manifest error is current among the French public, and is most dangerous, for it leads to the gravest consequences, both for yourself and for us. It has seemed to us, therefore, both necessary and useful to enlighten you as to our real social position at the present day, through the following facts, which are given without a trace of exaggeration.

"The overcrowding of the medical profession in France has to-day obtained the extreme limit of endurance. Our nation figures now among the European countries where there is the highest number of physicians in proportion to the population. (There are 10.4 physicians in France per 10,000 inhabitants.) The consequence is that every day we and our families are experiencing greater financial distress. And yet, a crowd of thoughtless youths continues to enter upon the study of medicine, and the number of medical students is manifestly greater than could possibly be demanded in the future. Medicine is one of the most burdensome callings, and presents but meager chances for the enjoyment, or even the repayment, of the capital invested (at least 30,000 francs) in study and preparation—a sum which is absorbed without any guarantee of returns. On the other hand, the various industries, the different branches of commerce, and some of the other liberal professions offer, with the same investment, a far better, larger, and surer field for the activity and initiative of modern youth, without condemning their votaries, as does medicine, to complete inactivity, and consequently to failure, and often to poverty, in the presence of the slightest illness."

The letter closes with an appeal to the better judgment of the reader, and bears the signatures of nineteen physicians, each representing one of the district societies composing the French national association.

There is no doubt that the statements contained in this circular are correct, and we think that the action of the French association deserves imitation in other countries, including our own, where the overcrowding of the profession is becoming serious. Such a warning should present a convincing array of statistics concerning the earnings of the medical man, and should show clearly the number of years of waiting and of preparation that are in store for the young physician. These circulars should be sent by the local medical societies, to each college, high school, academy, and preparatory school in their district. Presidents and principals of academic institutions should be supplied with additional data, which might enable them to advise prospective medical students intelligently.

Those who have within them the true calling of the physician; those who are willing to sacrifice much for the sake of entering a field for which they are fitted by nature, and in which their love of the art will help them over many a thorny place, will not be deterred by such warnings, nor will those be affected whose means allow them the pursuit of any career without much thought as to its ultimate financial rewards. But a timely warning uttered by authority may be the means of preventing many a young man from taking a step which he will possibly regret to the end of his days.

A PLEA FOR THE BOTTINI OPERATION.

WHAT operation to do in any given case of prostatic hypertrophy is a question which cannot by any means be considered fully settled. Those who have mastered the technique of the Bottini procedure bring forward many good reasons for their preference, and claim, naturally, that the objections are largely outweighed by the favorable features. Freudenberg, who has recently reported a series of 152 cases treated by this means (*Die Heilkunde* No. 5, 1906), believes that among the most potent arguments in favor of the Bottini operation are the facts that it may be carried out under local anesthesia in most cases, that it does not confine the patient to bed as long as does the more radical operation of prostatectomy, and that, being less extensive in character, it is also more readily adapted to the treatment of the disease in aged or weak patients. Freudenberg also claims that it is equally indicated in younger men, who are very apt to refuse an operation which will render them impotent. This complication is avoided by the Bottini operation, and the improvement in the general health which follows also exerts a favorable effect in those cases in which impotence is already partially developed.

The procedure seems to be particularly indicated in cases in which the prostatic hypertrophy is slight or moderate, although it may be equally effective in advanced cases. In the latter instance, however, we have to deal with the liability of a recurrence and the necessity of a more extensive exposure. In prostatectomy the size of the gland makes little dif-

ference, and this operation, moreover, is specially indicated when the middle lobe is hypertrophied and pedunculated. In such cases, of course, it is merely necessary to remove the offending segment, and then the lateral lobes may, in addition, be treated by the application of the galvano- or thermocautery. As it may be impossible in certain instances to determine exactly the relations between prostate and bladder by the cystoscope, a suprapubic prostatectomy may prove the operation of choice in such cases. Cystitis, with an acid urine, as well as pyelitis of a moderate degree, do not constitute contraindications to either procedure, but nevertheless the aim should always be to improve the condition of the urine before attempting an operation. When the reaction of the urine is alkaline, a Bottini operation should not be done until this has been changed, otherwise the slough will become incrusted with a phosphatic deposit. During the after-treatment the precaution should always be taken to keep the urine acid in reaction.

A summary of Freudenberg's statistics is of interest. He performed the Bottini operation 180 times in 152 cases, mostly of prostatic hypertrophy and a few of carcinoma. The age of the patients varied from 41 to 82 years, the average being about 65. Only cases with chronic long standing urinary retention were operated upon, the acute cases being treated by other means. Out of this total number a good result was obtained in 129 (84.9 per cent.); in 11 (7.9 per cent.) the procedure was a failure, and in the same number death followed the operation.

THE THERAPEUTIC VALUE OF ANTITHYROIDIN.

It is generally believed that the functions of the thyroid and parathyroid secretions are concerned with the neutralizing of certain metabolic poisons produced by the organism and circulating in the blood. Lesions in either one of these organs have likewise been held responsible for the unique and characteristic symptoms associated with exophthalmic goiter and kindred affections, and to the parathyroids has recently been given an increasing importance in the production of these. The results of operative removal seem to show that the latter is associated with a train of symptoms resembling in all respects those of Graves' disease; and it is also followed by a decrease in the size of the thyroid gland. For the relief of the symptoms which accompany exophthalmic goiter and similar diseases, the use of antithyroid extracts or sera has been proposed on the theory put forward by Gauthier and Moebius, that the condition was due to hyperthyroidization. If it is ultimately proven that these remedies are curative, then it will be quite evident that excessive or at least changed secretions of the thyroid or parathyroid bodies are pathogenic factors in the etiology of the diseases previously referred to.

A test of this theory has been made the subject of a practical clinical experiment by Eisner and Wiseman (*New York State Journal of Medicine*, June, 1906), who used it in a series of twelve cases of typical exophthalmic goiter, the serum being obtained from the blood of thyroidectomized sheep. Several typical cases were also under treatment, in the majority of which the goiter, if present, became more or less reduced; but, taking all the cases together, the writers plainly state that at this time they are not justified in reporting a complete and absolute cure in any. They claim, however, that antithyroidin is a remedy which can be used successfully for the relief of the annoying and alarming symptoms in both typical and atypical cases, particularly as regards the tachycardia, precordial distress, and tremor. Improvement should follow in from three to seven days, and if it has not begun within three to four weeks the chances seem to be against ultimate benefit from the prolonged use of the serum. The cases which, according to Eisner and Wiseman, have yielded most readily to treatment, are those characterized by moderate goiter development, with slight exophthalmos and tremor. Although the enlarged thyroid did not return to its normal size in these cases, it became perceptibly smaller. Exophthalmos seems to be the most rebellious symptom, never yielding entirely to antithyroid treatment. It was found that the nervous symptoms improved as the heart became slower, and the feeling of fear which possesses many of these patients also disappeared. Another favorable feature which has attended the use of the serum has been the increase in weight which the patients have experienced, and the authors sum up their experiences by stating that in no case did they regret the trial of this remedy; it always proved itself harmless.

This report is certainly an encouraging addition to the others which have been published in the same tenor, and, although it is too early to base conclusions on the relatively small number of cases which have been published, there is, nevertheless, reason to hope that ultimately the administration of antithyroidin will prove to be a rational therapeutic method. At present its value in relieving symptoms must be admitted, and also the fact that it is not followed by any injurious results.

Consanguinity in the Etiology of Certain Dermatoses.

Intermarriage between blood relations has long been looked upon with disfavor among civilized peoples, for the offspring of such union has often been found to present anomalies of development or to be afflicted with diseases which are naturally ascribed to what is generally regarded as a violation of nature's laws. Nervous and mental disorders in the children seem particularly prone to follow such marriages, and among numerous other conditions for which no adequate explanation can be found, certain obscure dermatoses, such as xeroderma, ichthyosis, scleroderma, and albinism, have been attributed to the same cause. A very thorough investigation of this interesting subject has recently been made by Adrian (*Dermatologisches Zentralblatt*, No. 9, 1906), who believes that consanguinity apparently plays a less prominent rôle in dermatology than in neurology or psychiatry. In xeroderma pigmentosum, ichthyosis congenita, and albinismus universalis, to follow the characteristic nomenclature of the dermatologist, consanguinity must be regarded as an etiological factor of moment; indeed, in xeroderma it was found

in 11.8 per cent. and in ichthyosis in 12 per cent. of the cases. The appearance of the same disease in a number of children may also be regarded as an evidence of collateral rather than direct infection. A transmission of the disease to the next generation has never been observed in the case of xeroderma, and it is almost impossible in ichthyosis, because the afflicted individuals do not reach the procreative age. Although no figures are given relating to the occurrence of albinism, it is also frequently noted among the children of parents who are blood relations.

Therapeutic Applications of Diet.

The bodily metabolism, particularly as affected by diet, is a factor not to be lightly considered in the presence of any morbid state, while it is an influence of primary importance in the management of a group of diseases of which obesity, diabetes, gout, lithemia may be viewed as typical examples, and it is of scarcely less weight in connection with diseases attended with or followed by wasting. Dietetics is, however, not yet an exact science, but merely an applied art, based upon known facts and empirical observation. Foods have certain chemical and physical properties that may often be utilized with therapeutic advantage. It is true that all individuals do not react alike to the same articles, as also they do not to the same medicinal agents, and accordingly allowance must be made here likewise for personal idiosyncrasy. In concluding a brief discussion of this subject in the April number of the *Practitioner*, Dr. Robert Hutchison formulates a number of rules that may usefully be followed in the selection of a dietary for therapeutic purposes under varying conditions. The first injunction is, in the presence of acute disease, not to sacrifice the whole for a part. For example, it is often better for a dyspeptic patient to suffer some discomfort from the ingestion of food than to permit a lowering of the general vitality through excessive abstemiousness. In the next place, no article of food should be prohibited in the absence of good reason therefor. In the selection of food those articles should by preference be recommended that are acceptable to the patient and agree with him, although a reduction in the amount of any food that disagrees is as a rule better than its entire withdrawal. It is advisable, when possible, that any changes made in diet should be gradual rather than abrupt.

The Influence of Calcium Salts on the Nervous System of Infants.

In studying the effect of calcium salts on the motor centers of the cortex, Sabatani and others have found that the electric responses are diminished by the application of isotonic solutions of these salts, but increased when solutions of ammonium oxalate and similar salts, which absorb the lime from the cortex, are applied. These observations would naturally lead to the thought that a lack of calcium salts in the organism, particularly in the tissues of the central nervous system, would exert an important bearing on the production of certain varieties of convulsions to which children are predisposed. Quest (*Weiner klinische Wochenschrift*, No. 27, 1906) made this question the subject of careful investigations, using for his experiments young dogs which all came from the same litter, some of which he fed on a diet rich in lime and others on food from which the calcium salts were largely eliminated. He found that the animals in the latter class presented a marked increase in nervous irritability, and their condition was one akin to tetanus. The irritability of the cortex was not increased, however, nor did the chemical examination of the brain show any changes as regards the calcium content, but this may be due to the fact that the experiment was not continued over a sufficiently long period of time. These observations are by no means extensive enough to warrant the formulation of any practical conclusions, but they do show that the mineral constituents of the infant's food exert an important bearing on the nervous system, particularly, as it seems, the peripheral. Some day we may be able to employ this knowledge in the application of a more rational therapy in what are among the most common of the diseases of infancy.

Treatment of the Edema of Pregnancy.

Although in many instances the edema which comes on during pregnancy is accepted as a matter of course and receives little attention until some more alarming symptoms are added, the idea is gradually gaining ground that the venous congestion due to the pressure of an enlarged uterus is not the only factor in its production, but that it is almost always the result of a renal disturbance, although albuminuria may be absent at the time. It has been claimed that the condition might be favorably influenced by withholding sodium chloride from the diet, and the theory has been put to a practical test by Cramer in a series of cases (*Monatsschrift für Geburtshilfe und Gynäkologie*, Vol. XXIII, No. 4). Careful measurements of the ingested and excreted fluids, when the diet was free from salt and again when it contained it in ordinary quantities, showed that in all cases as soon as the salt was withdrawn there was an increase in the amount of fluid excreted and the edema was lessened. In some of these cases was the fetus in any way affected.

News of the Week.

Death List of the San Francisco Earthquake.—So far as it has been possible to determine, 452 persons lost their lives as the result of the San Francisco disaster, April 18. These are the figures given in the report of the local Health Department to the California State Board of Health. Two hundred and sixty-six of the victims were killed by falling walls, 177 perished by fire, 7 were shot, and 2 died as the result of ptomain poisoning due to eating "emergency" canned goods of poor quality. Four hundred and twenty persons were white, eighteen were Chinese, four Japanese, and ten not stated. Eleven were less than a year old.

An Experimental Filtration Plant for New York.—Bids have been called for by the Water Department of New York City for the construction of an experimental filtration plant at the Jerome Park reservoir. Observations will be made there as to the efficiency and expense of filtering the water, and the methods best suited to the needs of the city will be inquired into.

St. John's Guild.—The floating hospital of St. John's Guild has carried this season, up to September 1, 36,000 women and children. The seaside hospital has admitted in the same period over 2,500 patients for an average stay of ten days. The floating hospital discontinued its daily trips on September 1, but the seaside hospital will remain open indefinitely, all winter if the funds will permit. This season has been the heaviest in the

history of the Guild. Contributions for the continuance of work at the seaside hospital, which are requested, may be sent to the treasurer of the Guild, at its office, 501 Fifth avenue.

A New Hospital Car has been built for use on the Erie Railroad. It is 60 feet long, with two compartments—an operating room, 15 feet 10 inches in length, and a ward, 43 feet 10 inches in length. In the operating room are an operating table, instrument sterilizers, and lockers containing instruments and dressing material. The inside finish is of a composite board, without beading or carving of any kind, painted in white enamel; the floor is covered with white rubber tiling. The ward contains eleven brass bedsteads. Equipment boxes underneath the car are provided with crutches, splints, army stretchers, surgical implements, wrecking tools, and other accessories.

Increased Mortality in Chicago.—According to the report of Coroner Hoffman of Chicago, August was characterized by the highest death rate of any month in several years. There were 390 deaths in Cook County, as against 338 for July and 356 for April, the next largest month. The increase in the death rate is attributed to the excessive heat. There were twenty-seven deaths by heat, as against one for the month of July. Suicides also increased with the hot weather. There were thirty-nine during August, more than for any other month save February, when there were the same number.

One More Cancer Cure.—Dr. Otto Schmidt of Cologne is reported by cable from Berlin to have discovered and cultivated the cancer bacillus and to have proved its pathogenicity by injections into animals which were followed, he claims, by the development of cancer. He asserts, further, that he has elaborated from cultures of this bacillus a product which is curative of malignant disease in its early stages. Dr. Schmidt refuses to divulge the nature of his alleged remedy, but says it is not an antitoxic or bacteriolytic serum. It is not stated whether this is the same remedy Dr. Schmidt had a year or two ago, or whether it is a new one.

Application of the Oslerian Age Limit.—Dr. Ray Lankester, Superintendent of the National History Department of the British Museum, has been notified that he will be retired in May of next year, when he will have reached the age of sixty years. In order to accept the position Dr. Lankester resigned the Linacre Professorship in the University of Oxford, a life position, with six months' vacation every year and carrying a salary of $4,500. His present salary is $5,000, but when forced to get out at the age of sixty he will have nothing but a pension of $1,500. Dr. Osler himself is now sixty years old, and there is some speculation whether he will retain the Regius Professorship at Oxford or will resign in favor of some one who has not yet reached his old-age limit.

Dr. William J. Mayo, President of the American Medical Association, received the degree of LL.D. from Toronto University on August 24. The degree was also conferred on Drs. Louis Lapicque of Paris and L. Aschoff of Freiburg, Germany, and eleven prominent members of the British Medical Association.

Captain Joseph Herbert Ford, Assistant Surgeon, U. S. Army, was one of the recipients of the Belilios prize for his contribution entitled "The Treatment of Dysentery," published in the *Journal of Tropical Medicine*, July 15, 1904. The other recipient was Captain J. G. Berne of the Royal Army Medical Corps, whose contribution with the same title was published in the *Journal* on August 1, 1904.

Dr. Lemuel W. Famulener has been appointed assistant professor of pathology at the Indiana University.

Dr. W. W. Keen of Philadelphia, received the degree of doctor of laws from the University of Greifswald, on the occasion of its recent celebration of the four hundred and fiftieth anniversary of its foundation.

Dr. A. H. Dollear of Jacksonville has been appointed assistant physician of the Illinois Western Hospital for the Insane, at Watertown.

Dr. William Seaman Bainbridge has been elected adjunct professor of surgery, and has been assigned to one of the clinics of that department in the New York Polyclinic Medical School and Hospital.

The Dunning Phthisis Camp.—The free open-air camp at Dunning for women suffering from tuberculosis, which is to be under the management of the Chicago Tuberculosis Institute, was opened September 3. Tents and cottages enough have been erected for the accommodation of twenty women in the early stages of consumption. Men patients are permitted to remain in the camp during the daytime.

A Health Officer Approves of Cigarettes.—The important news was telegraphed the other day from one of the Lake cities to a New York newspaper, that the Health Officer of the former had advised women to smoke cigarettes. "He had found," the dispatch reads, "that the society women here are addicted to the excessive use of tea, and attributes to its abuse the spread of heart disease among them. Tea acts as a stimulant, while nicotine depresses the heart, so that the one counteracts the effect of the other." It is to be hoped for the sake of the health officer's reputation as a physiologist and therapeutist, not to say a man of common sense, that this is only a silly season story.

A Sane Act of an Alleged Lunatic.—A man in Boyle County, Ky., recently made application to be committed to the Lakeland Asylum for the Insane. He told the trial jury that if permitted to remain unconfined he might murder his wife and three little children, and kill himself, after burning their home. He could not get over these insane impulses, and consequently he felt the need of restraint. The jury granted his request, and he went to the asylum from the court, expressing his joy in the assurance that his wife and children would no longer be in danger whenever the homicidal mania seized him.

A Reaction Against Opium Smoking in China.—There is a strong movement among the students and younger merchants in Canton against the practice of opium smoking, and a society for the suppression of the habit has been in existence there for some time. Recently an antiopium league was established in Honan, and the movement is spreading to other parts of the Empire. The Government, it is said, is about to appeal to the Government of India to consent to an annual reduction in the importation of opium into China, which will have the effect of extinguishing the trade within ten years, and it is said that the

Chinese will give force to this appeal by issuing an edict forbidding the use of opium by Government employees, and gradually reducing the cultivation of the drug in China, so as to end it entirely within ten years.

A Christian Science Miracle.—The press agent of the Christian Scientists in this city recently reported the wonderful cure of a woman into whose face some one threw carbolic acid, with results "too horrible to picture." Nothing is too tough for a C. S. healer, however, so she was taken in hand and demonstrated so forcibly that the lesions healed without a scar remaining. This is almost as convincing as the miracle performed by the C. S. young lady who found a litter of kittens born blind; she demonstrated to them so well the folly of being blind, that in a few days they were persuaded to open their eyes, and could see as well as any other kittens. The C. S. press agent ought to employ a medical censor to tell him when his miracles are commonplaces, before he publishes them to an amused world.

Lord Kelvin on the Atomic Theory.—In a recent letter to the London *Times*, Lord Kelvin enters a protest against the assumption that the atomic theory is disproved by the discovery of Sir William Ramsay and Professor Soddy, that helium may be derived from radium. This and the prior discovery by Ramsay of helium as an emanation from clevite, prove no more, he says, than that both radium and clevite contain helium, not that they have established the fact of the gradual transformation of one element into another.

Baths for the Tuberculous.—The Public Bath Commissioner of St. Louis has called upon the Board of Health for statistics showing which are the special centers of tuberculosis in the city, as he believes the baths should be established first in those districts. In four of the seven sanitary districts the number of cases reported for the past year ranged from 260 to 271, and in the remaining three from 192 to 249.

Suppression of Quack Advertisements in Michigan.—The Nottingham law, passed by the Michigan Legislature in 1903, has at last, after much litigation, been declared constitutional by the Supreme Court of the State. The law gives to the Medical Licensing Board of Michigan the power to revoke the license of any physician who is found guilty of obscene or offensive advertising. Certain newspapers and the advertising quacks fought the bill stubbornly for three years, but decency prevailed, and the State Board is now empowered to silence the worst of the charlatans.

Appointments to the Medical Faculty in Mexico.—Dr. José S. Saloma has been appointed to the chair of internal medicine, and Dr. Ernesto Ulrich to that of pathological anatomy, in the National School of Medicine in Mexico City, and both have become titular members of the Mexican Academy of Medicine.

Bequest to the North Adams Hospital.—In the will of the late S. Smith Joy of North Adams, Mass., the local hospital benefits in a bequest of $2,000.

Association of German Naturalists and Physicians.—The seventy-eighth annual meeting of this association will be held at Stuttgart, in the week from September 16 to 22.

Obituary Notes.—Dr. Hunter P. Cooper of Atlanta died of meningitis on August 24. He was born in Wilkes County, Ga., in May, 1860. He was graduated from the College of Physicians and Surgeons in this city in 1883, and, after a course of study in Vienna and Berlin, he began the practice of medicine in Atlanta. He was professor of anatomy and clinical surgery at the Atlanta College of Physicians and Surgeons, and was a prominent and active member of many medical societies and social organizations.

Dr. William Van Tuyl of Leavenworth, Kansas, died August 19 from disease of the heart. He was a graduate of the Kansas City Medical College in the class of 1889. He was a contract surgeon in the war with Spain, and served for several years in the Philippines.

Dr. Nathaniel Cass of Cameron, Texas, died August 20 after an operation for appendicitis. He was a graduate of the Medical Department of Tulane University in the class of 1882.

Dr. Irving Washington Hewit died in Spokane, Wash., on August 21, of Bright's disease. He was born at Delafield, Wis., January 13, 1854, and was graduated from the Medical College of Indiana in the class of 1883. He then began practice in Bellwood, Neb., where he remained until 1904, when the state of his health forced him to retire.

Dr. Byron W. Hinds of New Hope, Ala., died August 22 at the age of seventy-one years. He was a graduate of the Medical Department of the University of Nashville in 1866.

Dr. Edward D. Perkins of Washington died August 24. He was born in Castine, Me., and was for some time a teacher in the public schools. He subsequently took up the study of medicine at Georgetown University, taking his degree in 1895.

Dr. Nielson Abeel Baldwin of Brooklyn died at the Seney Hospital on August 20, at hte age of sixty-seven years. He was born in this city, and was graduated from the Yale Medical School in 1861.

Dr. John Hay Higgins of New York City died August 28, at the age of seventy-nine years. He was graduated from the College of Physicians and Surgeons in this city in the class of 1850.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

PARLIAMENT, SANITARY INSPECTIONS, ANTHRAX, FREE MEALS, ETC. — MEDICO-LEGAL SOCIETY, DEATH REGISTRATION — ALLEGED INCREASE OF LUNACY — COSTLY ASYLUMS — FEEBLE MINDED — OBITUARY NOTES.

London, August 17, 1906.

Before the adjournment of Parliament a number of questions were treated discursively on the votes for the Home Office and the Local Government Board. More inspection of workshops was urged and, further, the possibility of inspective work done in the homes of certain workers. The prevalence of anthrax was said to be due to faulty legislation and the greed of manufacturers. Attention was called to the importation of poisonous woods. The Home Secretary on these and other complaints replied that he would consult the Local Government Board as to the inspection of certain industries. He had called for special reports on jam making and fish curing, and would soon do so about aniline dyes and poisonous woods. He regretted the increase of anthrax, but thought that to deal with wool at the port of entry would be too great a tax on the trade, so a special committee had been appointed at Bradford to deal with the detection of the disease and seek a remedy by chemical processes.

This is the sort of way officials generally discuss sanitary matters. They can appoint a committee or even a royal commission to shelve inconvenient questions or put off subjects which do not interest the mere politicians. The deaths from anthrax in 1900 were 37; in 1901, 39; in 1902, 38; in 1903, 47; in 1904, 50; in 1905, 59. But who cries out that these deaths ought to be prevented? The

manufacturers? No; they fear a tax on their trade. The workmen's representatives? No; they are intent on setting trades' unions above the law. The Government? No; they have to settle with the opposition more exciting topics. Only doctors and sanitarians continue to protest against this waste of human life.

Mr. Herbert Gladstone, in defending his office, said they had had very heavy work in reference to lunacy, that almost every day vaccination was hurled at his head, and that he had been tormented in private as much as or even more than in public by vaccination. This complaint illustrates the ways of the antis of all kinds who have no scruples as to how they endeavor to force attention on their prejudices. Another illustration is that, now Parliament has separated, they hasten to furnish the papers with letters to fill the space which is vacant, and the papers—many of them—print these letters as if they were of value. Yet it is quite understood by those "in the know" that the outbreak of this sort of correspondence is engineered by the paid agitators. It is held, too, by some close observers that many a "conscientious objector" has been put up to object to vaccination by the antis—his expenses being paid by them on a scale indemnifying him for loss of time. Yesterday I was amused to hear a gentleman argue that the cheapest way to insure vaccination would be to pay the father a shilling in each case. When, he argued, the "free and independent elector" will accept the "price of a pint" for his vote, a shilling would be an effective bribe to certain parents. I hesitate to admit that a considerable number of parents have fallen so far.

But it is certain that the idea of parental responsibility has been weakened by recent legislation, as well as by the advocacy of various measures. We are so used to the abuse of hospitals that we scarcely think of it in this aspect. Charity never fails, and so there are persons who always take undue advantage of it. They take it as a matter of course. They have free education, free medical advice, free drugs, free surgical instruments, and even free spectacles. In many schools free boots are obtainable for children whose footgear is defective. Finally, free meals for the children have been demanded by the educationists and sentimentalists, backed up by the labor party, and this week we have the report of a select committee of the House of Commons on a bill for providing meals for children in schools. This report seems a sort of compromise with principle for the sake of conciliating a faction. The "strongest government of modern times" is afraid to reject a demand from its extreme wing and refers it to a committee to effect some arrangement. It is obvious that the committee has scruples as to what these growing demands will lead to, and in order to escape responsibility throws it upon the local authority, which, it recommends, should have power to organize a scheme and to pay out of public funds for the accommodation of a staff and for the preparation, cooking, and serving of meals. The cost of the food before cooking is to be paid for by voluntary funds, *where available;* but in exceptional cases the uncooked food may also be paid for by the local authority. Talk of hospital abuse after that!

The Medico-Legal Society has been discussing the present methods of ascertaining the fact and cause of death, and, on the report of a committee appointed to consider the matter, has resolved that our methods are imperfect. Further, the society has appointed a deputation to wait on the Lord Chancellor in order to represent to him this view. The learned president, Mr. Justice Walton, will approach the Lord Chancellor as to the reception of the deputation.

One phase of the lunacy question is the propriety of confining certain persons in asylums. At a meeting of the Kent County Council on Wednesday a vigorous protest against the constant demand for further buildings was made. One of the council's asylums is now being enlarged, at a cost of £62,000, and a further demand was brought up by the committee to enlarge another to the extent of 300 to 400 beds, at an estimated cost of £190 per head. The chairman regarded these constant demands as deplorable, and said many persons certified as lunatics might be looked after in less costly establishments. He hoped the Royal Commission would be able to evolve some scheme of classification so that imbeciles might be received in less expensive homes than up-to-date asylums. Yesterday a similar protest was made by the Hampstead Guardians, who directed their clerk to bring before the Local Government Board some of their difficulties. The majority of those sent to asylums from the workhouse were aged people with senile dementia, harmless and yet inconvenient to mix with other patients. But the guardians regret to be obliged to send them to asylums and increase the statistics of lunacy when they would be better looked after in homes. They therefore approve the proposal of the London County Council to establish receiving houses which would serve the purpose.

Dr. Fraser of Weston-Super-Mare died on the 8th inst., aged 54. He was taken ill on July 9, on which day he had attended an inquest and afterward performed an operation. He was a surgeon-colonel in the volunteer engineers.

Dr. F. B. O'Flaherty of Liverpool died on the 1st inst., aged 45. He was an Edinburgh graduate M.B. and C.M. and took the D.P.H. of Cambridge. Many years ago he practised for a time in the United States, but he has been at Liverpool for the last eighteen or twenty years and has there been held in great respect by his profession and the public. He was an accomplished linguist, and his taste was for literature in all its branches. He was known to intimate friends to have some cardiac affection, and of this he died.

Dr. W. J. Martin of Dublin died on the 4th inst., of cardiac failure. He had been out of health some time, but was able to perform all his regular work up to the day preceding his death. He had been a traveler in both hemispheres and was a most interesting conversationalist. He was Inspector of Anatomy and Surgeon to the Lunatic Asylum.

Dr. Oscar Woods, Superintendent of Cork Asylum and a former president of the Medico-Psychological Association, died on the 2nd inst., aged 58. He was a T.C.D. graduate in Arts and Medicine (1868-9).

Dr. R. J. J. Macdonald, who was killed by Chinese pirates while he was attending to the wounds of the captain of the boat which they attacked, was a medical missionary who had worked in China for above twenty years. He was an Edinburgh M.D. In the course of his mission he had often encountered great danger from pirates and others, but nothing could deter him from the effort to benefit the Chinese.

Dr. John Hudson died on the 6th inst., aged 88. He was at one time medical officer of the *Dreadnought* hospital ship. He qualified in 1841, took M.B. (Lond.) the next year, and M.D. in 1846.

OUR LETTER FROM CONSTANTINOPLE.

(From Our Special Correspondent.)

THE ILLNESS OF THE SULTAN ABDUL HAMID—THE EXPORTATION OF ROSE ESSENCE—A DECISION OF THE BOARD OF HEALTH.

CONSTANTINOPLE, August 16, 1906.

For the first time during his long reign, the Sultan Abdul Hamid II. (he ascended the throne of the Ottoman padishahs in 1878) was prevented by illness of a serious character from attending, on Friday last, the religious military ceremony of the so-called Selamlik. All sorts of alarming rumors were circulating throughout the city. It was even affirmed that the Sultan was dead. Some said he was poisoned. In one of the German newspapers appeared the sensational news that he fell a victim of a palace revolution. Of course there was no true word in all these startling rumors. Unfortunately, it is very difficult, and sometimes quite impossible, to gather trustworthy information concerning things of Yildiz-Kiosk (Star-Kiosk, the present residence of the Ottoman monarch), and especially of the Padishah himself, whose person and actions are always kept in most profound secrecy. The mist of densest mystery pervades the whole atmosphere where the sacred individual of the Moslem Khalif moves and has his being. No bulletins of any kind are ever issued, and nobody is allowed so much as to ask how his Islam Majesty is getting on. He is always supposed to be beyond the limits of human possibilities, and usual ailments of simple mortals are supposed never to approach and profane him. The alarming news concerning his present illness is, of course, due to this secrecy. Angina pectoris, Bright's disease, typhoid fever, and what not were affirmed to be the cause of his trouble. Now the real state of things is as follows, so far as it has been possible to ascertain from reliable sources: Abdul Hamid is suffering from a very chronic affection of the prostate gland. This affection has lasted for over ten years. In the beginning of it the body-physicians of the Padishah, together with a prominent German surgeon, had decided that operative interference was necessary. All the required preparations were made at that time to perform this operation. At the last moment, however, Abdul Hamid suddenly refused to submit himself to it. The trouble consequently went on, relieved from time to time by different palliative measures, until it reached the present serious stage. The Padishah is now suffering from all the train of symptoms referable to and connected with chronic prostatitis. There is the irritability of the bladder, which is said to be enormously distended; there is great difficulty in micturition; there is cystitis as well as some digestive trouble. There is reason to believe also that lately pyelonephritis has set in. The distinguished

German surgeon, Dr. Bergmann of the Berlin University, has been telegraphically summoned to come as speedily as possible to Constantinople in order to attend the Sultan, who is said to suffer great pains, being quite unable to pass his urine. It is possible that he contracted a "chill" during his usual promenades in the extensive gardens of the Yildiz-Kiosk, which chill seriously accentuated the chronic trouble. It is asserted that the introduction of the catheter for the purpose of drawing off the urine causes him untold sufferings. Whether he will, at last, submit himself to operative treatment is very doubtful. He shrinks from the lancet, as well as from anything suggestive of drastic interference. Besides, he was never a great believer in the efficacy of medical or surgical treatment. Medicine and surgery never appealed to him as being real sciences working on strict principles. Being an old-fashioned Moslem, pious, devout, and bigoted, he always most readily takes recourse, when he is feeling unwell, to all sorts of house remedies. Frequently also he is fond of consulting the occult lore of Arab medical wisdom. This time, however, the trouble was too serious and would not yield to any domestic remedies or Arab talismans. Thus Dr. Bergmann had to be asked to come. To-day, for the first time, a notice of an official kind, something like a bulletin, appeared in all the local newspapers, Turkish, Greek, Armenian, English, and French. This notice is very characteristic of the desire pervading the court circles to conceal matters or to represent them in a false light. It runs thus: "It is officially notified that His Imperial Majesty the Sultan was suffering from a slight cold on Friday last and that consequently the ceremony of the Selamlik did not take place. The Lord be praised, His Imperial Majesty has completely recovered his health to-day." This "complete recovery" is, of course, fictitious. The body-physician of Abdul Hamid, Marshall Dr. Nefiz Pasha, has frequent recourse to injections of morphine in order to lessen the Sultan's intolerable pains. It is possible that he will be able, with great difficulty and effort, to attend the next Selamlik. Of complete recovery, however, there could be no question, taking in view, especially, the fact that Abdul Hamid is old (he is approaching seventy) and that his general health, apart from the present trouble, has been undermined by all sorts of worries, fears, political complications, etc. A friend of mine who has access to Yildiz-Kiosk and who knows the affairs concerning the Sultan very well, tells me that the latter looks at present a mere wreck, unable to walk without support. The question of a successor to the Ottoman throne is beginning very seriously to occupy the minds of the highest state officials and courtiers. Let us trust that matters will take a regular peaceful course, without any sanguine revolutions, should another Khalif have to occupy the throne of the Osman padishahs. The United States Minister, Mr. Leishman, as well as all the other representatives of foreign Powers, received Saturday last the following official communication from the Chief Chamberlain of Abdul Hamid: "His Imperial Majesty the Sultan, my August Sovereign, greatly appreciated your Excellency's good wishes conveyed through your first dragoman. By order of my August Master I have the pleasure to announce to your Excellency that His Imperial Majesty has completely recovered. His Majesty looks forward to shortly receiving your Excellency and verbally expressing his satisfaction."

The *Courier de Sofia*, a business periodical published in the capital of Bulgaria, gives very interesting details concerning the exportation of rose essence from that principality. Bulgaria has sent out to foreign markets, from 1886 to the end of 1895, *i.e.* during a period of ten years, an average of 3,011 kilograms of rose essence yearly, of the annual average value of 1,639,754 francs, at 544.5 francs per kilogram. From 1889 to 1905 the exportation rose to 4,150 kilograms per year, amounting to the annual average of 2,749,926 francs, at 662.6 francs per kilogram. From these figures it is seen that the rose essence exportation from Bulgaria has very considerably increased in the latter years. The rose essence is exported to almost every country of the globe. Not all the markets, however, are regular, and the business is not proportionate to the increase of the production. For the present the markets of England, Austria, Germany, Italy, Russia, Turkey, France, and the United States of America are the most stable. The regular exportation to the last-named country dates only from the year 1897, when but 12 kilograms was exported. In 1905, however, the exportation increased to 1,641 kilograms, or 30.8 per cent., or, in other words, America occupies in 1905 the first place. The total export in 1905 has risen to 5,316 kilograms, to the value of 3,712,388 francs.

By decision of the Board of Health, arrivals from Suez are to be subjected to medical inspection and disinfection, and to the measures contained in the Circular 180 regarding the destruction of rats and vermin on board the steamers. The decision of the board applies to all vessels leaving Suez on and after July 27 old style (August 9).

Progress of Medical Science.

Boston Medical and Surgical Journal, August 23, 1906.

Gastric Ulcer and Cancer.—Christopher Graham states that in view of the fact that ulcer may, and often does, have a latent period of years and that cancers with short histories frequently show old ulcer base, it seems just to assume that many, if not all, rapidly developing gastric cancers have found a fertile soil on a previously developed ulcer area. After describing the symptoms of the four stages in gastric ulcer development—when cancer did develop they would expect it to do so in the third or fourth stage—he said that in his series of cases the males and females ran in proportion of 4 to 1 and ranged in age from 29 to 76, the average being a little over 50. About three-fourths presented themselves for the amelioration of symptoms that had been present for one year or less. In the series of 1905 pain was rather constant. Vomiting was not recorded n 11 histories, 3 had no vomiting, while 68 complained of it. In 42 the lesion was situated at the pylorus or lesser curvature, in 3 at the cardia. Of the whole number operated upon, 67 had test meals. Tumor was present 27 times, doubtful in 3 more. Dilatation was present in 54 and obstruction in 36. In 32 free hydrochloric acid was present, combined in 32, lactic acid in 42, fatty acids in 19, both hydrochloric and lactic in 13. Blood was often found. Figures presented seemed to emphasize that short histories and ulcer as the old lesion on which cancer is grafted are not incompatible, as some argue, and that ulcer is the great and fertile soil of cancer.

New York Medical Journal, August 25, 1906.

Sternomastoid Breathing.—Robert H. Chase makes a study of sternomastoid breathing in the dying state, basing his records on 1,500 personally observed cases. At least 90 per cent. of these persons died in an unconscious state. Not very long before death supervenes the head of the patient moves up and down in a rocking fashion, synchronously with the breathing; this action, a veritable death's call, is brought about by the strong contraction of the sternomastoid muscles in an effort to facilitate breathing. The duration of sternomastoid breathing varies from one minute to seven hours, the median length of time that it lasted before death was twenty minutes. He concludes his paper by stating that sternomastoid breathing is a reliable sign of approaching death, and one which may serve the purpose of the physician in forming an estimate of the length of time the patient may live, without depending on signs of less value; that its onset indicates that death is probably very near at hand, generally within half an hour; that it is a definite symptom on which the physician may predicate his instructions or advice; that it is a sign to mark the time when the family may be summoned to the bedside.

A Contribution to the Study of the Spanemic Heart.—Charles Ross Jackson says that a spanemic heart is one which, by reason of deficient nutrition of its muscle, is dilated or dilatable. He considers three varieties: 1. The heart insufficiently nourished on account of general anemia. 2. The heart insufficiently nourished because of more or less persistent vasomotor failure, the blood being normal. 3. The insufficiently nourished heart from a combination of blood disease and vasomotor instability. There is a recital of cases to illustrate each of these varieties. The treatment of the first class demands the free administration of iron, and, whether dilatation be present or not, much good follows a thorough control of the heart by digitalis or strophanthus during the anemic state. Arsenic is of value. The treatment of the second variety calls not only for digitalis, but also for direct vasoconstrictors. Ergot was of value and cannabis indica seemed to him to give excellent results. The third form calls for cardiac and anemic treatment, and for direct vasoconstrictors as well. His endeavor was to hold the heart at about 70 and to dose accordingly.

Strychnine as a Remedy in Pulmonary Tuberculosis.—W. P. Milroy says that ten years ago William Pepper called attention to the value of strychnine in pulmonary tuberculosis, and he has used this remedy with gratifying results repeatedly. Four doses should be given during the twenty-four hours, beginning in an adult with 1-30 grain at each dose. At the end of each period of five days he adds 1-30 grain more to one of the doses until 2-30 grain is given four times daily. Above this amount the increase is by 1-60 grain until the physiological limit is reached, when the dose should be diminished by about 1-4 and then gradually increased again. The great benefit accrues only

when the maximum dose is taken. Strychnine secures so vigorous an awakening of the sluggish cell life as once more to establish the broken defense against the tuberculous invasion. He is of the opinion that strychnine should be administered in pulmonary tuberculosis whenever the fresh-air treatment is not available, and he knows of no reason why it might not be used to advantage in conjunction with the fresh-air treatment.

Journal of the American Medical Association, September 1, 1906.

The Afferent Nerves of the Skin.—M. von Frey remarks that our insight into the distribution of the afferent nerve fibers is very incomplete. In dealing with sensory disturbances in man after injury to cutaneous nerves, the first thing to be considered is what kind of sensations belong to the normal skin and to the underlying tissues. He concludes that the nerve supply to the skin can be considered a fourfold one. The surface of the skin is divided into a very large number of minute areas, representing the fields of distribution of the nerve fibers serving the sensations of touch, pain, heat, and cold. According to a rough estimate on the trunk and limbs, there are about 30,000 warm spots, 250,000 cold spots, and half a million touch spots. Reliable determinations as to the number of pain spots are lacking; it is more difficult to mark out exactly the localities of maximum sensibility to pain.

Individual Health Inspection.—L. F. Bishop advocates the practice of health inspection of individuals generally, to detect disease or defects that may endanger health before it becomes difficult to remedy. Hundreds of lives, he says, are lost, and thousands of days of disability, because of the lack of such foreknowledge. The examination should be thorough, complete, and necessarily technical, in its nature, demanding special skill, and for this reason he suggests the organization of cooperative clinical laboratories for this purpose, where men trained in the technicalities of chemical and microscopical research can do the work for the actual practitioners. It should be a place where the older physicians in practice can meet and discuss the significance of things with their fellows, and thus make clinical pathology a practical matter. He believes that patients will learn to submit to this system in larger numbers as it becomes better known, and the public can be educated to employ its physicians to watch the health of the individual in the same way as they are expected to watch over the health of the community.

Sleep.—Norman Bridge considers that the teaching as to the necessity of a large amount of sleep is often erroneous and leads to overdrugging by powerful and somewhat dangerous medicines. He lays much of the evil to the mental attitude of the sufferer. The horrors of insomnia are but slightly due to want of sleep and very much due to the fear of sleeplessness with which the patients are nearly always afflicted. If they could go to bed and feel that they did not want to go to sleep, or did not care whether they slept or not, sleep would probably come before they were aware of it, and last the night through. The notion that we go to bed for the purpose of sleeping is a one-sided one. It is bodily rest that we require as much as brain rest, and this bodily rest need not be accompanied with sleep all the time. Even children do not need so much sleep as has been supposed. We should put ourselves in a position of rest, which of itself, physiologically, induces sleep. We should avoid the irritations, noises, bad air, cold feet, overloaded bowels, etc., which tend to keep us awake, and to prevent proper physical rest, and then sleep comes of itself usually, and almost always in sufficient quantity. Five or six hours may be as good as eight for some people.

The Surgical Treatment of Exophthalmic Goiter.—F. J. Shepherd maintains that in a certain proportion of cures, operative measures are curative, or lead to decided improvement. The probable cause is hyperactivity of the thyroid, but the part played by the thymus and other causes in this disease complex cannot be entirely ignored. Early operation is safest, and the class of cases most likely to be benefited are not the most severe ones, but those in which the gland is more enlarged on one side than on the other, with more definite tumor formation, and in which the gland is not excessively vascular and the enlargement has preceded the symptoms by years. In those early cases of enlarged thyroid with mild symptoms, in which the gland is soft, vascular, and evenly enlarged throughout, the results of operation are usually good. In case of a large vascular thyroid, with symptoms of marked toxemia from thyroidism, operations should be avoided.

The Lancet, August 18, 1906.

The Sterilization of Tuberculous Sputum and Articles Infected by the Tubercle Bacillus.—Thomas Kirkland and Marcus S. Paterson state that until 1905 it was the custom to destroy all sputum in a cremator, while the cups were washed by hand and sterilized. The methods used were undesirable because of the risk of infection to those employed in sterilizing, the considerable expense entailed in keeping the cremator in repair, and the cost of special handkerchiefs. Their experiments upon the sterilization of sputum seem to establish the fact that articles infected with the tubercle bacillus might be rendered sterile at a temperature of 200° F. From this it follows that any article infected with the tubercle bacillus might with certainty be rendered sterile by boiling it in water for half an hour under atmospheric pressure.

Observations on the Life History of Leucocytes.—C. E. Walker states that it has been elsewhere recorded that one of the earliest phenomena in the occurrence of malignant growths is the invasion of the tissue cells by leucocytes with the subsequent common division of both nuclei, and this produces a race of hybrid cells, half tissue cell, half leucocytes. It has also been recorded that the cells of malignant growths reduce in a similar manner to the cells of reproductive tissue. All the forms of cell division seen in malignant tissue are also seen in normal leucocytic tissue, and both leucocytes and malignant tissue are out of coordination with the true soma. According to observations the hybrid cells act just as would be expected and possess the characteristics, to a certain extent, of both their ancestors.

Frictional Electricity a Factor in Caisson Disease.—George W. F. Macnoughton says that caisson disease may occur rarely in the caisson, not so rarely immediately on quitting, usually some hours afterward, and not uncommonly for two or three days after the exposure to the compression. The work of a caissonier causes a repletion of the visceral veins and those of the cerebrospinal axis. The spinal column and its contents have thin-walled venules, inclosed by the inelastic perilymphatics, and are especially liable to become overdistended through the increased tension, creating local pressure and a local rise of acidity, thus stimulating the discharge of energy. These workers accumulate upon the body surface electricity which reaches the nerve centers, throwing the nerve cells into a state of excessive activity. The electricity of the caisson atmosphere is hydroelectric in origin, and the means at present in vogue of compressing and conducting air into the workings is an enlarged continuous performance of the Armstrong-Faraday experiment, with moist air instead of steam. He believes that the air of the intake should be absolutely dry, which might be arranged through heated tubes arranged in a furnace like those of locomotive boilers or one of the heat economizers in general use. There is a great similarity between the symptoms of a nonfatal lightning stroke and an attack of caisson disease, while the return shock of lightning is physically comparable to the changes which follow a too rapid decompression after long exposure in a caisson atmosphere.

Observations on the Action of Strontium Salts on the Coagulability of the Blood.—J. B. Nias concludes from his experiments that it is clearly established that the lactates of both strontium and magnesium in doses of from one to two grams are serviceable substitutes for the salts of calcium when the latter are not absorbed from the alimentary canal, thus enabling us to dispense with the dangerous practice of hypodermic injection which his experience does not show any advantage in speediness of action.

British Medical Journal, August 18, 1906.

Direct Examination of the Esophagus and Upper Air Passages.—D. R. Paterson says that to Mackenzie belongs the credit of being the first to record the extraction of a foreign body by the direct method, but this procedure did not come into general employment until 1881, when improved models were introduced by Mikulicz. In the direct examination of the esophagus Rosenheim's tubes are the most convenient, with the patient sitting on a low stool with the head hyperextended and steadied by an assistant. Esophagoscopy he claims to be the safest and most certain method in the extraction of foreign bodies, and all other methods by bougie or coin catcher, or by pushing the body into the stomach, should be avoided. The cases detailed by

him afford evidences of this. From the evidence produced it appears abundantly clear that the direct examination of the air passages is a method of the greatest utility and especially welcome in that group of cases which has always been so difficult and has yielded not a few tragedies, foreign bodies in the air passages, and it is earnestly hoped that the time has come when workers will recognize its enormous advantages.

Human and Bovine Tuberculosis.—Nathan Raw concludes that human and bovine tuberculosis are distinct varieties of disease, but that the human body is susceptible to both, and especially to bovine tuberculosis in the milk-drinking period of life. His opinion is based almost exclusively on clinical and pathological evidence.

A Case of Sudden Death Possibly Due to Vague Inhibition.—E. D. Telford reports such a case following an operation on chronic tuberculous cervical glands. At autopsy, at the level of the first dorsal vertebra, the right vagus disappeared into an elongated mass the size of a large filbert, formed by the fusion of several enlarged and tuberculous glands. The nerve was swollen for one inch before its entry into the mass, while at the point of entry it was actually constricted as definitely and sharply as if it had been encircled with a ligature. Brouardel quotes a case of sudden death in which the post-mortem findings offer a striking parallel to those observed in this case. On the other hand, the vagus has frequently been injured or divided in surgical work and did not appear to produce any noteworthy results.

Berliner klinische Wochenschrift, August 13, 1906.

Polyarthritis Chronica Deformans.—H. Curschmann refers to the tendency which exists to make an indiscriminate use of the terms chronic rheumatism, chronic arthritis, arthritis deformans and gout, and believes that it is possible to differentiate these various conditions more closely. Under the title noted he describes a disease which involves all the joints, beginning with the smaller ones, which exists as a clinical entity. He has studied the various stages of this disease by the aid of the *x*-rays and bases his observations on a series of 167 cases. The process begins in the joint capsules and ligaments rather than in the bones or cartilages, and the patients give the impression, as they often have fever, of being the subjects of an attack of acute articular rheumatism. The fingers and toes, however, are the joints usually involved at this time, and these are infiltrated and tender. Motion is not greatly interfered with, but there soon occurs a progressive atrophy of the muscles of the hand. There is more or less displacement of the bones of the joints, owing most probably to the changes in the capsule and ligaments. The cartilages next become involved, and then joint crepitus can be elicited. In the course of several years the larger joints become involved and their mobility retarded, even the jaws being included. The disease may begin in early life, but the author does not give any details as to its etiology. It is very apt to be associated with a variety of chronic skin diseases, such as vertigo, ichthyosis, psoriasis, and eczema.

Poisoning by Meat and Paratyphoid.—H. Trautmann has been one of a number of investigators who pointed to the apparent resemblance between the bacilli of paratyphoid and those associated with poisoned meat. The writer's contention, based on clinical and experimental observations, is that poisoning due to meat is an acute and paratyphoid, a subacute manifestation of an etiologically identical infectious disease. In the former the toxemia occupies the foreground of the clinical picture; in the latter the general symptom complex is that of an infectious disease. In the first the virus is already effective when introduced into the body; in the other the preliminary stage is gone through in the body itself.

Muenchener medizinische Wochenschrift, August 14, 1906.

Notes on the Transmission of Typhoid in an Asylum for the Insane.—Nieter and Liefmann report on the conditions in an institution containing nine hundred female insane patients, in which typhoid had been endemic for a number of years and persisted in spite of the efforts directed toward an improvement in the water supply and general hygienic conditions. Careful and continued examination of the stools of a large number of cases showed that certain patients afflicted with an ordinary acute dysentery also disclosed numerous typhoid bacilli in addition to the bacillus of Flexner. It seems very likely that these patients who merely had an ordinary diarrhea without typhoid symptoms served as the means of transmitting the true typhoid to others. As soon as these patients were isolated the epidemic ceased.

The Relation of Tetanus to the Female Sexual Organs.—E. Gross refers to the statement made by a number of writers, that the tetanic convulsion is brought about by the contractions of the uterus, and in support of the same reports cases in which the spasms were set free by contractions in the puerperal as well as in the nonpregnant uterus. In one the convulsions followed closely after curettage. The size of the thyroid also seems to have an important bearing on the question, but the exact relation must be determined by further experiment.

The Etiology of Prurigo.—Steiner and Vorner report a case in a woman of 26 who had never been previously affected with the disease but who suddenly developed an attack during a colitis. The latter was cured, but the skin affection persisted. The close resemblance between urticaria and prurigo has often been noted, and as the former is believed to be due to an irritation proceeding from the intestinal mucosa, the writers suggest that the prurigo may also be due to the same cause. In many cases of catarrhal colitis the skin eruption may not be noticed while the intestinal condition is being treated, but its reappearance at a later time will usually have been preceded by an attack during a previous colitis. The condition is very resistant to treatment.

Deutsche medizinische Wochenschrift, August 16, 1906.

The Treatment of Chronic Dysentery.—H. Meyer states that from our present knowledge of the subject we may divide this disease into four groups: the epidemic, the endemic amebic, the mild amebic enteritis, and diarrheas due to coccidia and infusoria. He claims that there are many cases in which the ameba is the etiological factor, although the patient has never been in the tropics, and all obscure chronic cases should be examined for this protozoon. Even when the amebæ are not found in the stools it is advisable to treat the patient with ipecac and iodoform enemas, presupposing, of course, that there is no intestinal tuberculosis, achylia gastrica, or other form of dyspepsia present. The writer places great reliance upon the ipecac and iodoform. The latter is given as a rectal injection, 5 gm. of iodoform in 1,000 c.c. of mucilage of gum Arabic, with the patient in the knee-chest position, and then massaged as far as possible up into the colon. This is left in the gut for ten minutes and then as much as possible washed out with plain water enemas. The author reports three cases in which this treatment was used with success. The ipecac is used in the form of emetin and cephalein, about one and a half grams being administered daily.

The Treatment of Basedow's Disease with the X-Rays.—J. Slodowski reports a case in which the patient afflicted with this disease gained 13.3 kilos in a period of sixteen weeks, during which she had been treated with the Roentgen rays. The abnormal perspiration was also stopped and the general nervous condition was improved, but the other features of the disease remained unchanged. The improvement is ascribed entirely to the *x*-rays and was almost immediate, and remained so for a period of six months, up to the time of the report. The most marked effect seemed to be exerted on the nutrition and secondarily on the nervous symptoms. The tremors, the exophthalmos, and the frequency of the pulse did not seem to be affected, although it may be that the treatment was not kept up for a sufficient length of time.

French and Italian Journals.

Diverse Forms of Anemia in Chronic Tuberculosis.—Marcel Labbé thinks that it is necessary to consider the total quantity of blood and the proportion of its elements in order to appreciate the anemia of tuberculosis patients. He distinguishes three different forms of anemia in chronic patients: 1. Anemia with yellow skin is the type most common when fever is present. The pallor of the skin corresponds to the diminution in the number of red blood cells and the quantity of hemoglobin, the diminution in the globular value, and the weakness of arterial tension. This anemia is due at the time to the diminution in the quantity of blood and to the globular destruction. 2. Anemia without yellow skin appears rather in patients with no fever. The number of red blood cells is greatly diminished, the quantity of hemoglobin lowered, the globular value elevated, the arterial pressure strong. In these cases the quantity of blood is not diminished and the globular destruction is at a minimum. 3. Yellow skin without anemia is rare. It is consecutive to a slow denutrition. The

proportion of red blood cells and of hemoglobin is normal, but the arterial pressure is lowered. The color is pale. There is a diminution in the amount of blood, but the composition of this fluid is normal.—*La Presse Médicale,* July 4, 1906.

Supernumerary Teeth and the Roentgen Ray.—S. Dunogier, from his investigations in this subject, concludes that the *x*-ray offers a sure means of detecting supernumerary teeth when these teeth appear before the permanent teeth of the same region. By this means the physician can differentiate normal teeth which are abnormal in direction of growth from supernumerary teeth. The *x*-ray also reveals through the thickness of the maxillary process the permanent teeth in process of development. Their form, their direction of growth, and their distance from the border of the gum can be observed. By employing the *x*-ray at regular intervals it can be seen if the supernumerary teeth form an obstacle to the development of the permanent teeth. The most propitious time for intervention may be learned in this way.—*Gazette Hebdomadaire des Sciences Médicales de Bordeaux,* June 24, 1906.

Treatment of Tumors by Glycolytic and Pancreatic Ferments.—M. R. Odier has made various researches in relation to the treatment of tumors by glycolytic and pancreatic ferments. He noted in certain pathological conditions, especially in malignant neoplasms, that there was an increase in the amount of glucose in the tissues. He believes that the character of a malignant tumor depends not alone upon the tumor itself, but upon the diathesis of the patient. This is why he thinks that the diathesis ought to be modified. The animals which have served for his experiments were of various kinds, horses, sheep, dogs, and domestic rats. The tumors were sarcomata, carcinomata, papillomata, and one adenoma. This investigator demonstrated the constant diminution of glycolytic and pancreatic ferments in these cases. The treatment consisted of injections charged with the ferments in question. The author has kept under observation five dogs, one rat, and one horse, from four years to a year and seven months. In these seven animals the position of the tumors has remained stationary. The volume of the tumors decreased to a condition bordering on the normal following the treatment by daily injections.—*La Presse Médicale,* June 30, 1906.

Treatment of Ingrowing Nail.—Drucbert, in his hints on the prophylactic treatment of this affection, states that thick and very convex nails have a natural tendency to penetrate the flesh. Flat, small nails covering large fleshy toes, when the tissues are not very resistant, are apt to be overgrown by the skin. He advises saline baths, as well as alum and tannin, for tender tissues. The greatest care in the toilet of the feet should be taken in cases showing a predisposition to ingrowing nail. Inflammation should be carefully watched for and kept in check. Curative treatment depends upon the degree of inflammation. Long walks and standing on the feet should be avoided. The application of antiseptics, such as sublimate, which will reduce the inflammation and prevent further trouble, is indicated. Dressings repeated several times daily will help to keep the trouble in check. A bit of dressing covered with vaselin may be gently forced under the nail. In more severe cases radical treatment is in order.—*Journal de Médecine de Paris,* June 24, 1906.

Pathology and Treatment of Multiple Hemorrhagic Sarcoma of the Skin.—Francesco Radeli states that the idiopathic sarcoma of Kaposi is an angioendothelioma originating in the blood-vessels. He has used the Finsen light in the treatment of these growths and has made histological examination of the tissue resulting after the treatment. His conclusions are that there are in the foci of growth of Kaposi's disease formations of an endothelial nature originating from the endothelium of the blood-vessels. The application of the Finsen rays produces a resolution of the cutaneous new formations. This resolution takes place by the acceleration of the spontaneous process of resolution which is going on in the growths, that is, by proliferation of the connective tissue surrounding the new growths and by secondary atrophy. In the cicatrix produced by the Finsen rays there is a large number of elastic fibers, which explains the distensibility of the cicatrices formed.—*Le Sperimentale,* Vol LX. No. 3.

Lesions Produced by the Acid-Resisting Bacteria.—Michele d'Amore calls attention to the fact that the acid-resisting bacteria produce tubercles in the tissues that are similar to those produced by the Koch bacilli, but that are not identical with them. He has conducted experiments by inoculating these bacteria and made careful histological examinations of the resulting tubercles, and gives the conclusions at which he has arrived. There is a great similarity in structure between the tubercles of the Koch bacillus and those under discussion, but there are certain differences that separate them in structure. The acid-resisting bacteria are only slightly virulent to animals. The differences in structure are more marked when fats are injected with the bacteria. Artificial infection does not produce any progressive disease or proliferation in the tissues. There is a tendency to caseation of the tubercles, but there is no dissemination into the surrounding tissues. There are structural differences in the tubercles, such as differences in the giant cells and the epithelioid cells. The author believes that, taking into account the structural differences and the differences in the course of the affection, there need be no difficulty in arriving at a diagnosis.—*Giornale Internazionale delle Scienze Mediche,* June, 1906.

Metabolism in Pulmonary Tuberculosis.—G. Vannini and M. Collina have made experiments to determine the changes in metabolism that go on in tuberculous subjects. Consumption is a disease in which the nutritive balance is affected so that the patient lives on his own tissues. It is desirable to know what part in these changes is taken by the deficiency of food eaten and what part by the intoxication produced by the disease. The conclusions arrived at by the authors are these: Absorption in those patients that have no especial disturbances of the alimentary canal goes on normally, but the loss of nitrogen through the feces is increased, so that finally there comes about a state of hyponitrogenism. The fats of the feces contain more glycerides and less ordinary fats. In apyretic tuberculosis there is an equilibrium or retention of nitrogen, while when there is fever the albumin of the organism is destroyed. As to the nitrogenous substances of the urine, there is a diminution in the amount of nitrogen in urea and a slight increase of nitrogen in ammonia eliminated. Uric acid appears in normal quantity.—*Rivista Critica di Clinica Medica,* June 16 and 23, 1906.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Surgical Suggestions Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, M.D., and Eli Moschowitz, M.D. 16mo, 60 pages, muslin. Surgery Publishing Co., New York.

Physiology of the Nervous System. By J. P. Morat of the University of Lyons. Authorized English Edition, translated and edited by H. W. Syers, M.A., M.D. (Cantab). 4to, 680 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $7.50, net.

Diseases of the Nervous System Resulting from Accident and Injury. By Pearce Bailey, A.M., M.D. 8vo, 627 pages, illustrated, muslin. D. Appleton & Co., New York.

Ellis's Demonstrations of Anatomy. Revised and edited by Christopher Addison, M.D., B.S. (Lond.), F.R.C.S. Twelfth Edition. 8vo, 851 pages, illustrated, muslin. William Wood & Co., New York. Price, $3.50, net.

Klinische und Anatomische Untersuchungen ueber den Cretinismus. By Dr. Wilhelm Scholz. 4to, 605 pages, illustrated, paper. August Hirschwald, Berlin. Price, 14 M.

Transactions of the American Climatological Association. Vol. XXI., for the year 1905. 8vo, 279 pages, illustrated, muslin. The Richmond & Backus Company, Ann Arbor, Mich.

Atmokausis und Zestokausis; die Behandlung mit Hochgespanntem Wasserdampf in der Gynaekologie. By Dr. Ludwig Pincus. Second Revised Edition. 4to, 371 pages, illustrated, paper. J. F. Bergman, Wiesbaden. Price, 6 M.

The Dynamics of Living Matter. By Prof. Jacques Loeb. 8vo, 233 pages, illustrated, muslin. The Macmillan Company, New York. Price, $3.00.

The International Medical Annual: a Year Book of Treatment and Practitioner's Index. For the Year 1906. 8vo, 588 pages, illustrated, muslin. E. B. Treat & Co., New York. Price, $3.00.

The Modern Materia Medica. Revised to January 1, 1906. 12mo, 306 pages, muslin. The Druggists' Circular, New York. Price, $1.50.

Quiz-compends. A Compend of Obstetrics. By Henry G. Landis, A.M., M.D. Revised and edited by William H. Wells, M.D. Eighth Edition. 12mo, 227 pages, illustrated, flexible muslin. P. Blakiston's Son & Co., Philadelphia.

Book Reviews.

THE EYE AND NERVOUS SYSTEM. Their Diagnostic Relations. By Various Authors. Edited by WM. CAMPBELL POSEY, A.B., M.D., Professor of Ophthalmology in the Philadelphia Polyclinic; Surgeon to the Wills Eye Hospital, etc., and WILLIAM G. SPILLER, M.D., Professor of Neuro-Pathology and Associate Professor of Neurology in the University of Pennsylvania; Clinical Professor of Nervous Diseases in the Woman's Medical College of Pennsylvania, etc. Illustrated. Philadelphia and London: J. B. Lippincott Company.

THE borderland between ophthalmology and neurology is a territory whose importance is universally recognized, yet until the appearance of the present volume no work written in English we believe has been devoted to just this field. The neurologist is accustomed to seek almost daily counsel of his ophthalmological confrère, and the latter is constantly turning over patients to the specialists in nervous diseases, so that the presentation of a common form in which the subjects of interest to the two sets of observers are discussed by representatives of each camp is certainly highly desirable. The present volume is designed to furnish this consensus of opinions and the editors have been fortunate enough in their choice of collaborators to secure a list of names certain to stamp the volume with the seal of authoritativeness. In addition to articles by Drs. Posey and Spiller the work comprises chapters by Drs. C. W. Burr, F. X. Dercum, Alexander Duane, C. H. Frazier, Howard F. Hansell, William Hirsch, Edward Jackson, J. Hendrie Lloyd, Charles K. Mills, S. D. Risley, B. Sachs, Joseph Sailer, G. E. de Schweinitz, W. N. Souter, E. W. Taylor, G. L. Walton, John E. Weeks, T. H. Weisenburg, Casey A. Wood, and H. V. Würdeman. These separate monographs form a harmonious mosaic in which there is a sense of well planned continuity, and what repetition does occur is not undesirable since it reflects the points of view of the two branches represented by the writers. The book is essentially a work on special subjects designed to be of use to the practitioner, and the authors appear to have been careful to keep this end in view, for the manner of treatment is such as to enable the ordinary reader to derive the greatest possible benefit from it. The subject matter is divided into twenty-three chapters whose titles form too long a list for reproduction here, but it may be said that not only the theoretical considerations involved in the function of vision and its relation to the general nervous system are amply discussed, but also the various methods of testing for and investigating anatomical and functional disturbances are described at length. The last four chapters are among the most interesting in the book and are devoted to the psychological effects of operations on the eyes; the surgical treatment of intracranial lesions causing disturbances of vision; tremors, reflexes, and gaits; and degeneracy—these latter subjects especially indicating the breadth and scope of the book. The illustrations are numerous and form an interesting and valuable feature of what is a most instructive guide in a field that is usually approached by the practitioner with a certain degree of hesitation.

THE NATURE AND TREATMENT OF CANCER. Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer. By JOHN A. SHAW-MACKENZIE, M.D., Lond. Third Edition. Revised and Enlarged. New York: William Wood and Company, 1906.

THIS little work is devoted to a consideration of the treatment of cancer by means of the hypodermic injection of various substances—Chian turpentine, sodium oleate (soap), and trypsin, in conjunction with the internal administration of ox-gall. The theory upon which this treatment is based, or by which the results are explained, is that propounded by Mr. J. H. Webb of Melbourne that "cancer is uncontrolled cell-proliferation due to the deposition of cholesterin from the cell, either locally from injury or dependent on some chemical change in the liver secretion, associated with deficiency of the bile salts which normally hold cholesterin in solution." The argument is supported by numerous case reports. That cancer, malignant as is its usual course, is not the inevitably fatal disease it is generally supposed to be, is gradually becoming recognized. The not so very rare cases of spontaneous recovery in man and in mice and recovery under treatment by the *x*-ray, radium thuya, and the injection of various substances seem to show that it is possible to arrest the abnormal cell-growth, and raise the hope that we may yet discover in what this process of arrest consists. As an aid to this discovery the study of books of this sort is not to be despised, and with however much scepticism the study may be approached it is worth while making it; the seemingly most improbable theory may contain the spark which will furnish the light to illuminate this dark problem.

HEART DISEASE AND ANEURYSM OF THE AORTA. With Special Reference to Prognosis and Treatment. By SIR WILLIAM H. BROADBENT, Bart., K.C.V.O., M.D.Lond., F.R.S., D.Sc.Leeds, LL.D.Edin. and St. Andrews, F.R.C.P., Physician in Ordinary to H M. the King, and to H. R. H. the Prince of Wales; Commander de la Legion d'Honneur, etc., and JOHN F. H. BROADBENT, M.A., M.D., (Oxon.), F.R.C.P., Physician to Out-Patients, St. Mary's Hospital; Assistant Physician to the London Fever Hospital, etc. Fourth Edition. New York: William Wood and Company, 1906.

As was the case with the third edition of this well known treatise the preparation of the present revision has been entrusted to Dr. John F. H. Broadbent, son of the original author. The volume has been increased in size by the addition of chapters on the pulse, disease of the coronary arteries, bradycardia, and atheroma of the aorta which are by the junior author, while Sir William Broadbent has contributed new matter on angina pectoris and the functional affections of the heart. It is no longer necessary to expatiate on the value of the work or to point out its many features of excellence for it has long come to be regarded as one of the most authoritative expositions of the subject of heart disease and allied conditions, and is not likely soon to lose its eminent position. The additions to the present edition are well adapted to increase the utility of the work and in this instance to say that the book is one that should be in the hands of every practitioner really seems no exaggeration. The only criticism that suggests itself to the reviewer is that the subject of the clinical significance of variations in blood pressure is not accorded the attention it deserves in the light of modern investigations, and that the attitude assumed by the authors of discrediting the use of the sphygmomanometer is a step in the wrong direction. The statement in regard to the use of such instruments of precision: "nor is it essential for clinical purposes, as the finger can by practice be educated so that a trustworthy comparative estimate of the arterial tension can be made" is one that all clinicians, who have given themselves adequate opportunities for comparison between the blood pressure as "estimated" and as actually recorded by the manometer, will probably be inclined to consider ill advised, to say the least.

DAS HEUFIEBER; sein Wesen und sein Behandlung. Von Dr. ALFRED WOLFF-EISNER. Mit 10 Kurven und Abbildungen und 2 grossen Tabellen. Muenchen: J. F. Lehman's Verlag, 1906.

THE various chapter headings of this monograph are: History, theories of causation, clinical manifestations, differential diagnosis, relation of hay-fever to other maladies, tabulated summary of cases observed, therapy, including climate, hay-fever and temperament, organizations of hay-fever patients, and the relation of hay-fever to general medicine. Naturally considerable attention is given under the heading of therapy to the serum-treatment and to that by graminol, a congener of pollantin and a remedy with which we are in this country not at all familiar. The utility of the sera is recognized but they are not considered as likely to cure every case. A temperate tone runs through the book which, while containing nothing new, gives some interesting clinical experiences and will serve as an up-to-date exposition of the general hay-fever question.

PROGRESSIVE MEDICINE; A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia: Assisted by H. R. M. LANDIS, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. June 1, 1906. Philadelphia and New York: Lea Brothers & Co., 1906.

THE current number of this valuable quarterly contains articles on Hernia, by W. B. Coley; Surgery of the Abdomen, exclusive of Hernia, by E. M. Foote; Gynecology, by J. G. Clark; Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Spleen, Thyroid Gland and Lymphatic System, by A. Stengel, and Ophthalmology, by E. Jackson. The contributions are all up to the high standard which we have learned to look for in this publication. The section on Gynecology includes a lengthy review of tumors of the uterus, both carcinoma and fibroid. Progressive Medicine is a very useful publication.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, Held at Toronto, August 21, 22, 23, 24, and 25, 1906.

(Special Report to the MEDICAL RECORD.)

(*Continued from page* 356.)

SECTION ON SURGERY.

Second Day—Wednesday, August 22.

The Operative Treatment of Irreducible Luxations of the Semilunar Cartilages.—Dr. JAMES BELL of Montreal discussed the free opening of the knee joint in irreducible luxations of the semilunar cartilages, of considerable importance, because they occurred usually in young men. Operative treatment was usually called for if complete restoration of function was to be had. When the knee joint was opened, not only would one find a displacement of these cartilages, but very often they would be torn, and at times direct manipulation could not restore the parts; often complete removal of them would be demanded. The semilunar cartilages could be often removed without materially interfering with the function of the joint. In eighteen months he had operated upon four patients, through a free anterior opening of the joint, a transpatellar incision. This opening gave free access and a full view of all parts. These four cases he briefly reported, and in each there was a restoration of flexion of 120 degrees or more. One of the advantages of the operation was that there was no weakening of the joint, because a bony union resulted. Other advantages were, greater ease and accuracy in the removal of the torn and dislocated cartilages, less manipulation, less risk of infection, better results, better control of all the stages of treatment, and convalescence was but slightly prolonged because of the necessity of obtaining bony union of the patella.

Dr. FRED LEM. GRASETT of Toronto emphasized the importance of a good-sized incision, and said that the results obtained by Dr. Bell should give every confidence in doing this operation.

Dr. F. M. MARLOW of Toronto asked Dr. Bell regarding the after-treatment of these cases, and said that his experience was limited to only two cases, both successful. His greatest difficulty was with the after-treatment.

Dr. EVANS of Huntersville, Ont., asked for more information regarding the technique of the operation.

Dr. JAMES BELL, in answer to Dr Evans' question, said that the incision was made through the lower one-half of the patella, and the joint so opened that the whole end of the tibia could be seen. If the joint was freely opened, anything to be done could be done with ease. In answer to Dr. Marlow, the said the only after-treatment was what was usual in fractures of the patella, keeping the joint fixed for five or six weeks, then moderately fixed for two or three weeks more, and then the patients passed from observation with directions only to avoid undue strain on the joint. There was no special after-treatment at all.

Intestinal Resection for Tuberculous Enteritis.—Dr. FRANCIS J. SHEPHERD of Montreal reported the case of a patient, aged 34 years, who was supposed to be suffering from appendicitis when admitted to the hospital. He had been a hard drinker, suffering from gastritis and nervous prostration. Twenty-four hours before seen he suffered extreme pain in the right iliac fossa; the pain radiated to the testicle and perineum. On admission there was intense pain in the median line below the umbilicus, a great deal of abdominal distention, and tenderness, temperature 103° F., pulse 124, and other signs which pointed without any doubt to the existence of a peritonitis. When the abdomen was opened stinking pus escaped. The omentum was thickened and reddened. The ileum was much inflamed, and there were areas of ulceration found. Pulling a coil of intestines out, a perforation was noted from which feces escaped. There was a series of ulcerations extending along the intestines for several feet. A distance of over five feet had to be traversed before healthy intestine could be found. Nearly the whole of the small intestines were studded with dark areas, indicating ulceration. The bowel was divided and the ends brought together with a Murphy's button, altogether over five feet being removed at this time. A rubber drain was inserted. The next day the patient was better, and one week after operation a fecal fistula developed, which closed spontaneously. Then followed almost a continuous improvement until the end of the second week, when a high temperature developed, with pain at the site of the wound, where was found escaping feces. A hole was found at the ileocecal junction. The patient was too weak to permit of further operative interference, and left the hospital after two months with a fecal fistula in his right loin. The Murphy button never passed. The patient died from exhaustion four months after the operation. A post-mortem examination was not obtainable. This case was a splendid example of how patients suffering from severe forms of tuberculosis of the intestines could stand operations.

Dr. JOHN B. MURPHY of Chicago said there was no condition to be met with in the peritoneal cavity that he feared more than multiple ulcerations of the intestines, with adhesions of the third type, which meant organic lesions. In the analysis of such cases he considered the differential diagnosis; there was no condition or lesion of the intestines so obscure in clinical manifestations as tuberculosis of the intestines. A patient might have tuberculosis involving the duodenum, the jejunum, and the ileum, and have no hemorrhage, and only a slight elevation of temperature. He recently saw a case of tuberculosis in which the entire intestinal tract was involved with but slight fever and no hemorrhages. Such cases were not rare. He called attention to the symptomatology of these cases, that is, the relation between the pain, the temperature, and hemorrhage. In appendicitis the attacks were different; here there was pain, elevation of temperature, nausea, vomiting, but an absence of blood from the alimentary tract, as shown by an examination of the feces. While there were pain, fever, and the appearance of blood, it was almost pathognomonic of a tubercolous lesion, and also that the lesion was in close proximity to some vessel of considerable size. With an extensive lesion as great as in Dr. Shepherd's case, with the patient almost depleted, one could get union after excision. This, though, could not always be secured in that class of cases where the peritoneum was involved as well. In those cases of extensive tuberculosis, particularly of the large intestine or lower portion of the ileum, he believed the operation of exclusion was the best operation until the tuberculous process was far repaired by rest, enabling the patient to tide over the immediate danger, and at the same time placing the patient in a condition for permanent repair of the tuberculous process.

Dr. WM. J. MAYO of Rochester, Minn., congratulated Dr. Shepherd upon the results he had obtained, and said that nothing more tried a surgeon than to open an abdomen and find such a condition present; it introduced a certain element of doubt as to what should be done. Tuberculosis of the intestines was undoubtedly a primary lesion, and it was more common than thought to be. Multiple points of tuberculosis, as in pulmonary tuberculosis, were comparatively common. He recently saw a patient who died, not from the lesion itself, but from some general infection which was caused by this local focus; at the postmortem the lung tissues and other portions of the body showed such gross lesions as to obscure the primary source in the intestines. He called attention to those forms in which there was a single ulcer, followed by stricture in the small intestines, a number of such cases having been reported. There was another class of cases thrown in with malignant disease, the so-called conglomerate tuberculosis, most common in the cecum in which the tumor developed. These were not at all rare. The majority of these came to operation, not as cases of tuberculosis, but as cases of

malignant disease, the real diagnosis not being made until the tissues were examined by a competent pathologist. These conglomerate cases came with a history of tumor, with repeated attacks of colic; sometimes the tumor existed for a number of months with certain obstructive phenomena, sometimes pointing to trouble with the appendix. They could be treated by excision and get well. In the operation it was wise not to attempt to restore the lumen of the intestine, but to remove the ileocecal junction and make an anastomosis in healthy tissue. The results of this procedure had been exceedingly good. When dealing with tuberculosis it was unfortunate that drainage had to be instituted, for, as a rule, it would be followed by fecal fistula. Now we could take enormous chances in suturing the abdomen completely and leaving Nature to do the best she could.

Dr. Ochsner of Chicago admired the surgical judgment as shown by Dr. Shepherd in the treatment of his case. It was important to his success that he did not fear to remove a considerable portion of the intestine, inserting his sutures in healthy tissues. The tendency in such cases was to do the slightest possible amount of injury; this resulted frequently in removing too small a portion of the diseased intestine, using a portion of the intestine for suturing when it was still somewhat suspicious.

Dr. John Stewart of Halifax referred to a case of tuberculosis of the intestine that resembled malignant disease, the diagnosis not being made with certainty until a microscopical examination had been made.

Dr. Arthur T. Cabot of Boston said that an etiological factor that should give us courage in attacking these cases was that usually they were primary in nature, and that the infection came from the bovine bacillus.

Dr. Shepherd of Montreal thanked his "American cousins" for their valuable discussion of his paper and their gentle criticisms.

The Treatment of Ascites Secondary to Chronic Hepatitis.—Mr. Sinclair White of Sheffield, Eng., read this paper. The term "cirrhosis of the liver" was restricted to the pathological changes usually described under the heading of "vascular cirrhosis." Its most obvious symptoms were hemorrhages from the alimentary tract and ascites. Biliary cirrhosis, whether due to infection of the bile passages or to other causes, was excluded. He said that ascitic effusion was largely passive, and directly due to interference with the passage of blood through the hepatic terminals of the portal vein. Proliferation, with subsequent contraction of the tissues forming the framework of the liver, was the principal cause of the obstruction; it might be supplemented by thrombosis of the portal vein and by defects of the general circulation. Fifty per cent. of the cases of cirrhosis of the liver ran their course to a fatal issue without the appearance of ascites. Its absence was explained by (1) the enlargement of the normal anastomotic vessels connecting the systemic and portal veins; (2) the development of new anastomoses in adhesions formed between the viscera drained by the portal vein and the abdominal walls. The value of drainage as an adjunct to operation was beyond dispute. Epiplopexy was contraindicated where any of the important viscera of the body were defective. It should in all cases be preceded by one or more tappings. Details of the operation varied, but omental fixation was the most important step. The pathological changes in the liver were permanent, and therefore incurable, but the ascitic phenomenon was capable of being arrested, and the life of the patient prolonged by the operation. His personal experience with epiplopexy comprised five cases, full particulars of which were given. Four of the patients were engaged in the liquor trade, and there was a definite history of alcoholism extending over a period of many years in each. In the fifth, the evidence of alcoholism was less obvious, but the liver showed typical hobnail changes. This patient died on the twelfth day after operation. The remaining four patients recovered and were cured of the ascitic condition.

Dr. John Stewart of Halifax confined his remarks to the pathological aspects of the question. The phenomenon of ascites might be considered to be due to one of three causes, hydremia, pressure, or thrombosis. Thrombosis, as a pathological cause, was of ideal simplicity, but of no great frequency. A case was reported by Monroe of Glasgow, in which the patient had been the subject of hematemesis. In that case there was a local obstruction due to thrombosis; in such cases a spontaneous cure might be expected. In cirrhosis of the liver, he asked what was the common cause of the effusion of fluid. The contraction in the neighborhood of the portal vein caused a backward pressure, with engorgement of the spleen and intestinal mucous membrane, leading to melena and gastric hemorrhages and accompanying ascites. The cause of the increase in the connective tissue was obscure. As Dr. White pointed out, there was much to be said against the toxemic theory. The whole subject of dropsical effusion was much obscured. In about fifty per cent. of the cases of cirrhosis, from whatever cause, there was no ascites at all. Sometimes the natural anastomosis was sufficient to prevent it. He thought that this was the result not only of a passive, but at times of an active condition, going on in the cells; not alone a filtering of fluid, but an active secretion as well. He emphasized the fact that cases of hepatic cirrhosis went on without the appearance of ascites. Again, patients had been tapped and it had been noted that there was a gradual lessening of the amount of fluid until at last there was no more effusion at all.

Mr. George Gray Turner of Newcastle-on-Tyne said that his part in the discussion could only be that of an emissary from Dr. Rutherford Morison, who shared with Dr. Drummond the credit of bringing the operation before the English-speaking world. Since September, 1894, there had been sixteen cases operated on at Newcastle-on-Tyne. Of this number five died within a few days, three from pneumonia, one from uremia, and one from cholemia. In no case was there any septic complication. None of these fatal cases was properly selected. One was complicated by nephritis, and in three the fixation was merely carried out as the last stage of an exploratory operation. Of the eleven that survived, five had subsequently died. Of the sixteen cases, only six fulfilled the conditions insisted on by Drummond and Morison, namely, that the patients selected for this method of treatment should have alcoholic cirrhosis with ascites, not complicated by cardiac, pulmonary, or renal lesions, and should have survived one or more tappings. Among these properly selected cases, three patients were alive and well, seven years and five months, twelve months and seven months after operation, and two lived in good health for five years and two years, respectively. The indications were (1) that the ascites was due to portal obstruction, and not to the toxemia that was so often present. Rapid wasting, slight jaundice, and early edema of the legs were bad signs. (2) The patient should have survived several tappings; this in itself might cure the condition and it might help to develop adhesions. It also might give an indication as to whether the patient would or would not survive the operation. (3) There ought to be no pulmonary, cardiac, or renal complications. Among the nonalcoholic cases, those due to syphilis had done badly, and any patient suspected of having this disease should not be subjected to operation until thoroughly treated with mercury and potassium iodide.

Dr. Wm. J. Mayo of Rochester, Minn., said that the cases selected for this operation should distinctly be those without other lesions. The good results only followed where there were no cardiac, pulmonary, or renalcomplications. At the present, any patient who showed extensive edema of feet and legs, or trouble with the heart, or albumin and casts indicating kidney complications, should not be operated upon. The mortality was high in such cases, or else there was practically no benefit to the patient. There was a class of cases not due to alcohol which was seen in the younger subjects, especially young women, in which for

some cause ascites appeared, and these cases could be relieved by operation. He believed this whole subject must be cleared up by surgical and experimental physiologists. To-day we did not know exactly what the real function of the liver was. Adami showed that in all probability its function was to destroy bacteria taken in the portal circulation and carried to the liver. This was important, as it helped to explain why surgery of the stomach was followed by pulmonary troubles so often. Again, an etiological relationship existed between the liver and the spleen. Again, in Banti's disease, there seemed to be some intimate association with liver conditions. He made a plea that the large universities, with their large amount of material at hand, should take up this study from the standpoint of surgical physiology, and determine if possible why such conditions should exist.

Dr. OCHSNER of Chicago said that there seemed to be a physiological balance in cases of ascites due to hepatic disease; one class of cases that seemed to be benefited by operation was on one side of the balance, while those that were not benefited were on the other side. Personally, he had not been able to determine these classes.

Mr. CHARLES JOHN BOND, F.R.C.S., of Leicester said he had been struck with the difficulty in some cases of satisfactorily bringing the liver in accurate adaptation to the abdominal wall.

Dr. CARSON of London referred to the difficulty of choosing proper cases for operation. He had two girls, aged 20 and 22 years respectively, with no alcoholic history, on whom good results were obtained by operation.

Sir WILLIAM HINGSTON of Montreal said that they were dealing with the results of disease, and not with the disease itself. Ascites might or might not be present; in either case there seemed to be no tendency towards death or towards recovery.

Mr. LYNN THOMAS of Cardiff reported a case operated on two years ago.

Dr. FRANCIS J. SHEPHERD of Montreal referred to the case of a woman with ascites, and in whom he found cirrhosis of the liver. He questioned her friends about any alcoholic history, and was informed that such was impossible, because she was the president of a Woman's Christian Temperance Union. He learned afterwards that she had been a free partaker of patent medicines containing much alcohol, and this caused a true alcoholic cirrhosis.

Sir HECTOR CLARE CAMERON of Glasgow remarked how far simple drainage was capable of producing effects which they desired from operation. Five or six years ago, after tapping ascites due to alcoholic cirrhosis, he noted that the little wound would not heal, and for three or four weeks the patient had his bedclothes saturated with the ascitic fluid. That patient recovered. He abstained from alcoholic habits and remained well for three years, when he suddenly died from some cardiac condition. Later the speaker was asked to deal with a case of ascites due to alcoholic cirrhosis. Remembering this former experience, drainage was instituted. The patient was fifty-six years old and had had twelve tappings, and always with a rapid reaccumulation of the fluid. He introduced a large cannula and trocar. This patient died two and a half years after this method of treatment was instituted. There had been no return of the ascites. He believed if this patient had abstained from alcohol he would have lived longer. He died from hepatic cirrhosis.

Dr. JOHN B. ROBERTS of Philadelphia took exception to the age limit being placed at sixty years for this operation. It seemed to him that if they operated under local anesthesia, making an incision through the rectus muscle, then introducing the covered finger, catching hold of the omentum and making two or three folds in it, and stitching it from the exterior, they would be able to operate upon cases when in very bad condition and with little operative risk. It was practically a subcutaneous operation.

Dr. GARROW of Montreal also discussed the paper.

The Surgery of Banti's Disease.—Dr. GEORGE ARMSTRONG of Montreal detailed a case, and referred to an unusual complication that occurred after the operation. Twelve hours after operation tetany developed, which persisted for some time. The eyes became fixed and staring and the muscles of the back rigid, and other signs of the condition were present. The patient finally recovered. He had been able to collect from the literature 32 cases, with 23 recoveries and 9 deaths, a mortality of 28 per cent. Following operation, the patients were practically restored to health, the leucocytosis and oligocytosis disappearing rapidly, as well as the pigmentation. The hematemesis present seemed to be due to obstruction to the flow of blood through the vasa brevia. The three following facts appeared to him to have become established in dealing with Banti's disease: (1) The disease was essentially, and without exception, a progressive one, and tended to destroy life; (2) no treatment, save removal of the spleen, was effective; (3) splenectomy was followed by improvement, even in advanced cases.

Dr. A. B. ATHERTON of Fredericton, N. B., discussed the paper.

SECTION ON MEDICINE.

Second Day—Wednesday, August 22.

The second day was taken up by a joint discussion with the section of physiology on overnutrition and undernutrition, with special reference to proteid metabolism.

Quantity of Food Required.—Prof. RUSSELL H. CHITTENDEN of New Haven, Conn., opened the discussion by questioning the present knowledge of the medical scientists with regard to the amount of fats and proteids needed to maintain health. It was easy, he said, to decide in conspicuous cases of undernutrition that enough food was not being taken. Just as with regard to similar cases of overfeeding, there was no doubt. The dietary standards of the civilized world, however, were all founded on certain old notions, and supposed to be ruled by instinct. Recent investigation seemed to show that these standards were nearly twice as high as were needed to enable man to maintain the balance of nutrition. The extra material, instead of doing good, very probably did harm. His own experiments showed that men could maintain nutritional equilibrium on about one half, or even less, the proteid material that was ordinarily consumed. These experiments had been carried on for months at a time, and concerned various classes of individuals. The present dietary standard was founded on habit, and instinct was relied on as the guide. This was interesting, but not scientific or convincing. No dietary standard could be suggested as feasible that did not maintain nitrogen equilibrium. In Dr. Chittenden's cases, however, not only there had been no loss of nitrogenous material, though one of the men had continued the diet for over four years, but all of those concerned in the experiment had found that they were in better health, suffered less from pains and aches of various kinds, and were less subject to muscular fatigue. All this had been accomplished without any increase in the carbohydrates consumed. In the soldiers furnished by the United States Government for experimental purposes, there was an actual increase in muscular strength. No deterioration in the blood was noted, though this was carefully looked for. It had been maintained that dogs perish when not given abundant proteid diet, yet in Dr. Chittenden's laboratory this had not proved to be so. One dog had lived on a low proteid diet for over a year on less than one half of this material supposed to be necessary to maintain life. Too much had been argued from dogs in this matter, and the analogy with man did not hold. There was more suffering in the world from overeating than from overdrinking. It had been suggested that excess of proteids increased vital resistance, but of this there was no proof.

Proteid Limitations.—Prof. HALLIBURTON of London said, in opening the discussion, that he fully agreed with Dr. Chittenden. Excess in meat eating was more harmful than excess in almost any other line. Experiments on animals were useful to point the way in questions of metabolism, but were not conclusive. If it was argued that the dog with a high proteid intake was a strong animal, it could be said in reply that so was the ox with a low proteid intake; each animal had, as it were, its own coefficient in this matter. Too much must not be concluded from laboratory observations. Lafcadio Hearn, in his book on Japan, had stated that much of the Japanese initiative and enterprise had developed shortly after they became a meat-eating instead of an exclusively vegetarian nation. The open-air treatment of tuberculosis included in most cases the taking of large amounts of food. This undoubtedly increased resistive vitality. The subject, therefore, was still open for discussion. Dr. Halliburton said that a great change had come over physiologists' knowledge in recent years with regard to the absorption of albumin. It was now known not to be absorbed as peptone, but rather as crystalline substances, resembling leucin and tyrosin. The albumin in human bodies was a new manufacture for the purpose. Nature always provided much more of this than was necessary. Leeds had pointed out that it was physiological to take a maximal amount of proteid material since the child provided with food by nature takes ten times the necessary quantity of this material. To take only just enough would be as foolish as to take food with the idea of producing a minimal amount of fecal refuse. It was known that a large amount of material must be consumed, and much of it eliminated, in order to carry on vital processes properly. The speaker said that our knowledge of metabolic processes was extremely lacking. It was possible that a large amount of proteid material must be consumed in order to secure certain crystalline substances that existed in such material in only very small quantities, yet these substances might be absolutely necessary for life. A ton of pitchblende must be taken to secure a few grains of radium, and many truck loads of blue earth for a few carats of diamonds. Perhaps some such reason as this would be found to account for the universal impression that men must consume so much more proteid material than the laboratory finds it necessary for them to have. In this a frank confession of ignorance and the assumption of a waiting attitude was the most important consideration.

Arguments for Proteid Consumption.—Dr. OTTO FOLIN of Waverley, Mass., said that the only arguments for large consumption of proteid material were founded on habit, and the old naive believe that cooked muscle was good to provide muscular energy. The diet of prize fighters and athletes was somehow supposed to help ordinary people to eat properly. In this physicians had been blind leaders of the blind. There existed a belief that, because successful nations were eaters of meat, therefore meat eating was important, and indeed indispensable for great vital activity. The argument from habit might be applied to such harmful things as alcohol, or tea, coffee, and tobacco. There was an instinct for meat eating, but quite as strong an instinct against manual labor. This was no argument that this instinct had to be followed. Science regarded such an opinion with suspicion at least, if not utter disdain.

Medical Aspects of Proteid Consumption.—Dr. R. HUTCHISON of London said that the problem of proteid consumption could not be solved by the physiologists alone, nor by physicians alone. The proteid minimum, that is, the small quantity that could be consumed with the maintenance of health, was a physiological ideal, while the proteid optimum, that is the amount of proteid material necessary to secure good health and strength and maintain them, was the physician's ideal. According to the French expression, in order to have enough one must have too much. The test of the proteid minimum could not come from laboratory experiments of a few months, but must be made by the observation of how men who had for years taken such limited quantities of proteid material stood acute disease. It had been said that meat proteid was harmful, but meat contained more than proteids, and was it the extras that were harmful? It had been said that the paroxysmal neuroses, such as megrim, had been cured by a lessened amount of fats, or by a lessened amount of proteids, or by a purin free diet. All of these could not be true, and it was extremely difficult to decide which was the efficient agent in such cures. Individual idiosyncrasy was extremely important. Metabolism was very different in different individuals. The physician must have the explanation for these individual differences before he could make dietary decisions for individual patients.

Laboratory Experience Fallacious.—Dr. LAPIQUE said that he had studied the rations of peoples all over the world, and had found that all of them were consuming more than would be approved according to Dr. Chittenden's conclusions. It was evident that the experiences of the laboratory were not to be taken seriously for practice, since nothing was known as to what parts of the proteid material consumed were most useful for nutritional purposes. Perhaps large quantities must be taken just to secure very small amounts of absolutely indispensable substances. The speaker considered that the time was not yet ripe for the physiologists to give conclusions to physicians in this matter, and further investigations were necessary.

East Indian Vegetarianism.—Dr. RAMARAT of Madras said that he represented hundreds of thousands of his fellow countrymen who had never touched meat or eggs or fish in any form. Even on this trip of ten thousand miles, he had given vegetarianism of this absolute kind a fair trial. He had not found it wanting. He had carried on a very active professional life for twenty-four years, and was sure that all the ordinary activities could be exercised without meat or the abundance of proteids consumed in the West. On the voyage he had seen many pitying glances cast at him because of his abstemiousness. He thought that the pity should be bestowed rather on those who bothered themselves with eating so much. The experiment of limited proteid diet had been carried on in India for many thousands of years by a people noted for its intelligence and for all of life's activities.

State of Knowledge of Nutrition.—Sir JAMES GRANT of Ottawa said that nothing was more important than this question of nutrition. There was no doubt that more people died from overfeeding than from the overconsumption of alcohol. At the age of seventy-five, he looked back over his professional career, and felt that most of the ills of mankind came from overfeeding. Knowledge of metabolic processes was most lacking. The nervous system in digestion was particularly ignored, though the very source of digestive impulse came from the nervous centers. He felt that this discussion, by disclosing present day ignorance, was bound to be of the greatest possible service to medicine.

Meat Stimulation.—Sir THOMAS BARLOW said that while Dr. Chittenden's researches were of the greatest possible service to medicine, they served but to emphasize certain phases of medical ignorance. Great additions to our knowledge were needed. Why was the flagging child improved so much by having meat put in its diet? Why was overfeeding in phthisis and neurasthenia so beneficial? It was evident that the observations in the laboratory had to be rationalized before they could be applied to the practical problems that came from the physician. Meantime, no subject was more important, and the medical world was under great obligations to Dr. Chittenden for having opened it up.

Dr. Chittenden said that he did not consider that the last word had been said as to proteid nutrition. A few years ago men were sure that much greater quantities were

needed; now a state of doubt had been created. That was the real object of bringing his experiments before the medical profession. The lack of knowledge on this subject had become very clear. The question had been raised whether many ills of humanity were not due to overeating because of false dietary standards. Now the thought has been fostered that a closer approximation to the minimum proteid requirement might be perhaps the best curative agent for such ills and save much suffering. Extractives in meat were not absolutely condemned, because perhaps they were stimulants. Proteids were not all the same; vegetable proteid was supposed to be the same as meat proteid, yet chemical analysis showed that it was three times as rich in glutaminic acid. Evidently the two substances were very different. The future alone could bring sure knowledge on these points.

Aminoacids and Metabolism.—Dr. Llewelys F. Barker of Baltimore said that all progress in medicine was looked for a few years ago from bacteriology; now the tide had turned and physiological chemistry had the vogue. Analysis of albumin had shown that the proteid molecules were very complex, yet were composed of chains of rather simple substances. These simple substances were mainly the aminoacids. A dozen or more of these were found in egg albumin. These constituted the basis of albuminous metabolism. The most familiar of them were leucin and tyrosin. Aminoacids occurred in two forms, the monoaminoacids and the diaminoacids. Curiously enough, these two substances were found to exist in the same proportion in such different proteid materials as the white meat of chicken, fish, the proteids of vegetables, and all other meat sources of proteids. Investigation had shown that each animal had its own specific albumin. The albumin of one differed from that of any other species. Each animal manufactured its own kind of albumin in its intestines. The same simpler crystalline materials were used by all of them, but the end results were quite different. In the blood the aminoacids were almost constant. Evidently the intestines made what was necessary, and took this work from the body tissues. Even exudates were digested into aminoacids before absorption. It looked as though the problem why sugar could be made from proteid materials was soon to be solved from the standpoint of the physiological chemist.

Treatment of Typhoid Fever.—Dr. F. T. Thistle of Toronto said that purgatives were the most important part of the treatment of typhoid fever. The important indication in the disease was to remove the toxic material from the ulcers of the intestines and to lessen the number of the bacilli there congregated. For this, the important thing was to drain the ulcers by vigorous purgation. Most physicians hesitated, because they feared that it would hurt the already diseased intestines. For this there was no good ground in the experience of those who had tried purgation. Dr. Thistle had purged his patients for fifteen years, and considered that his mortality had been lower than that of most of his colleagues. He gave calomel in small doses at the beginning, followed by half an ounce of magnesium sulphate; after this the bowels were kept open freely.

Dangers of Purgation.—Dr. Calwill of Toronto said that purgation was a dangerous treatment in his opinion for typhoid fever. Of his cases, those suffering from constipation had a mortality of only 8 per cent. Those suffering from diarrhea had a mortality of 18 per cent. Whenever diarrhea occurred in typhoid fever he always gave a guarded prognosis, and, if it could not be checked, a grave prognosis. On the contrary, he always encouraged constipation, and felt secure of his patients when there was no looseness of the bowels. In his opinion there must be no purging in typhoid fever.

Typhoid Not an Intestinal Disease.—Dr. McCrea of Baltimore said that the question of purgation in typhoid depended on whether it was considered a general or a local disease. Now pathologists considered that the ulcers in typhoid fever were not the primary manifestation of the disease, but only secondary. Typhoid fever was a constitutional disease that usually, but not always, produced ulcers in the intestines. Antiseptics were of no use, because they could not be given in sufficient strength to produce the expected results. It was to no advantage to destroy the bacilli in the intestine since there were so many in other parts of the system. Even in Asiatic cholera, exclusively an intestinal disease, antiseptics had not filled expectations. The speaker considered that the proper eliminants in typhoid fever were the kidneys, and not the intestines. To encourage kidney elimination, the best method was the bath treatment, which stimulated kidney function. Purgation was harmful in all infections, even in those which had not intestinal lesions, as scarlet fever and pneumonia; diarrhea must not be encouraged. The best proof of the value of the water treatment of typhoid fever was furnished by recent statistics from Brisbane. There 1,800 cases had been treated without baths, with a mortality of 14 per cent. Afterwards, bathing had been introduced into the hospital, and an equal number of patients taken from the same class of people, treated in the same hospital in exactly the same environment, gave a mortality of only 7 per cent. Dr. McCrea had been an advocate of purgation, and became a convert to the good influence of constipation by seeing the results.

Dr. Neilson of Milwaukee, Wis., said that in a case recently under his charge, because of severe hemorrhage, he had locked up the bowels absolutely for ten days, yet the patient had done very well.

Results of Purgation.—Dr. McPhedran of Toronto said that in one hundred and ten cases treated by purgation methods at the Toronto Hospital, there had been eleven hemorrhages and three perforations. This showed the effect of disturbing the bowels. He disapproved entirely of the idea of purgation, and thought that intestinal antiseptics were so only in name.

Bacilli After Typhoid Fever.—Dr. Barker of Baltimore said that the best proof that the removal of the bacilli was not the proper indication in typhoid fever, was the fact that after the cure of typhoid many bacilli remained in the body. These were passed in the urine for months afterwards, and their presence must not be forgotten. How the tissues learned to live with these dangerous hosts of bacilli with impunity was the all-important question to be considered.

Dr. Hamilton said that some patients should be treated by purgation and some by antiseptics, but no general rule could be laid down.

SECTION ON SURGERY.

Third Day—Thursday, August 23.

Case of Banti's Disease.—Dr. John R. Williams of Rochester, N. Y., presented a man, twenty-seven years old, who sought advice because of sour stomach and distress in the upper abdomen. His family and previous history were negative. His trouble began in 1900, when he was sick for six months, acutely so during the last two weeks of that time. In 1905 he suffered severe attacks of similar nature. The stools were black and tarry, and the vomitus contained a small amount of blood. Now he suffered no pain except when he had diarrhea; he complained more of a feeling of distress in the epigastrium. He never had any bad habits. There was some pigmentation of the skin. The mucous membranes were pale, and the sclerotic was glistening. The most interesting feature of the case was the enlarged spleen, which practically filled the upper left quadrant of the abdomen. The liver was not enlarged. He had a functional systolic murmur. The leucocytes fell between 4,000 and 6,000. The red cells numbered 3,400,000, and the hemoglobin was 80 per cent. The differential count showed the small lymphocytes to be 11 per cent. and the

large 14 per cent., while the polynuclears were 75 per cent. Normoblasts and an occasional megaloblast were seen in the blood.

Case of Hip Joint Arthroplasty.—Dr. Dow of Regina, Sask., showed this patient.

The Surgical Treatment of Ulcerative Colitis.—Dr. Ingersoll Olmsted of Hamilton read this paper, referring to the various operative treatments that had been employed. Good results seemed to follow any operation which permitted free irrigation of the bowel. Appendicostomy had many supporters. He reported four cases in which colostomy was the operation.

Dr. Robert F. Weir of New York told of how he had devised the appendicostomy operation by accident. In the Philippines American surgeons had opened the colon, made an artificial anus, and irrigated the bowels in cases of colitis. But this left a very disagreeable complication to deal with. Dr. Weir's experience had been with seven cases, five being the ordinary ulcerative, and two the amebic form of dysentery. More difficulty was found in curing the amebic forms. So far there had been as many as eighty or ninety cases treated by this method, and the majority of them yielded promptly to treatment. Experience had shown that the mere flushing out of the colon with large quantities of physiological saline solution was followed by good results. He called attention to Dr. Tuttle's discovery that the ameba could not stand cold, and to his employment of injections of ice water into the bowel with good results.

Dr. Arnold of London and Dr. Price of Philadelphia discussed the paper.

Appendicitis; Some Points in Diagnosis and Treatment.—Dr. Herbert A. Bruce of Toronto in this paper said that the most important point in the treatment was that the appendix must be removed; in all cases of acute appendicitis the operation should be undertaken at the earliest possible moment. Therefore an early diagnosis was very important. A differential diagnosis should be made between appendicitis and acute purulent salpingitis, acute colitis, tuberculous peritonitis, acute indigestion, malignant disease of the cecum and of the stomach with peritonitis. Appendicitis usually began suddenly. He emphasized the point that temperature and pulse were not to be relied upon. In more than half the acute cases rigidity of the right rectus muscle was present, as well as vomiting. The sooner after the commencement of an attack that one operated, the better would be the results. No morphine should be administered until the diagnosis was made; when the diagnosis was made, a surgeon should be called at once. If pus was present and it was necessary to transport the patient in an ambulance, Fowler's position should be insisted upon. This position was also of value after the operation. He had had three fatal cases of ileus following the operation, a very dangerous sequela. One should differentiate between mechanical and septic ileus. Dr. Bruce reported cases in which he had operated, the youngest patient being six months, the oldest ninety-eight years.

Mr. H. W. Carson of London reported a series of 100 consecutive appendix cases. There were 62 males and 38 females. The clinical varieties he divided as follows: (1) Quiescent relapsing, 17 males, 13 females; total, 30. (2) Acute catarrhal (operation before abscess formation), 6 males, 2 females; total, 8. (3) Abscess, 23 males, 17 females; total, 40. (4) Abscess with general peritonitis, 16 males, 6 females; total, 22. With regard to the age factor, between four and fifteen years there were 38 cases, of which 35 were acute cases (92.2 per cent.). Above the age of fifteen there were 62 cases, of which 35 were acute cases (56.4 per cent.). In regard to the question of recurrence, it was shown that of the 70 patients operated upon during the attack, 55 (78.5 per cent.) were in their first attack, 12 (17 per cent.) were in their second, and 3 (4.5 per cent.) had had more than two attacks. With regard to the mortality, there was 1 death in 30 of the quiescent relapsing, or 3.3 per cent.; no deaths in 8 acute catarrhal; 2 deaths in 40 cases of abscess, or 5 per cent., and 14 deaths in 22 cases of general peritonitis, or 63.6 per cent. In considering the mortality in reference to the incidence of attack there were, during the first attack, 13 deaths in 65 cases, or 20 per cent.; during the second attack, 2 deaths in 18 cases, or 11 per cent.; over two attacks, 2 deaths in 17 cases, or 11.75 per cent. In considering the deaths from general peritonitis, between the ages of four and ten there were 4 deaths in 6 cases; between the ages of ten and fifteen there were 3 deaths in 5 cases; between the ages of fifteen and twenty there were 2 deaths in 2 cases; between the ages of twenty and thirty there were 3 deaths in 4 cases; in those over thirty there were 2 deaths in 5 cases. Of the complications, there was 1 case of intestinal obstruction in the quiescent relapsing cases. In the abscess cases, there were 6 cases of fecal fistula, 4 of intestinal obstruction, 4 of pneumonia, 3 of subdiaphragmatic abscess, and 1 each of pleurisy, empyema, phlebitis, parotitis, and delirium tremens.

Dr. Price of Philadelphia discussed the paper.

Ulcer of the Duodenum from a Surgical Standpoint.—Dr. William J. Mayo of Rochester, Minn., read this paper. He said that duodenal ulcer was a frequent disease and 40 per cent. of all gastric and duodenal ulcers were situated primarily in the duodenum, yet 90 per cent. of these were called gastric; 96 per cent. involved all of the coats of the intestine and could readily be demonstrated on opening the abdomen. The large majority of ulcers called pyloric were in reality duodenal in origin, as the terminal three-fourths inch of the pyloric end of the stomach was rarely the primary seat of an ulcer, and when involved was usually secondary to duodenal or prepyloric ulcer. The arrangement of blood-vessels was the best guide to the pylorus in accurate localization when adhesions and scar tissue obscured the field. There were 73 per cent. of duodenal ulcers in men and 27 per cent. in women. The duodenum embryologically was not a part of the small intestine but of the stomach, and was concerned in preparing the food for intestinal digestion and absorption. The involvement of the peritoneal coat gave localizing epigastric pain and tenderness, and muscular rigidity confined to the upper right rectus muscle. Chronic perforation and regional peritonitis were common. The thin coats easily permitted penetration, but the small and relatively sterile contents of the duodenum enabled adhesions to form with neighboring viscera. The differential diagnosis was difficult in certain cases between gastric and duodenal ulcer, and occasionally between ulcer and gallstone disease. Complications were numerous, especially obstruction, acute perforation, and recurring hemorrhages. Dr. Mayo then considered the surgical treatment, and said that in cases of acute perforation the transverse suture, with or without gastroenterostomy and pelvic drainage through suprapubic stab wound, the patient being maintained in a semisitting posture afterward for several days, was of value. In acute and dangerous bleeding he advised excision of the ulcer, or a mucous suture protected externally; and for chronic bleeding, excision or gastrojejunostomy, the latter being more beneficial in duodenal than in gastric ulcer. In cases of chronic ulcer, gastrojejunostomy, after posterior "no loop" method, was the operation of choice. Excision, with plastic or end-to-end closure, was occasionally indicated. He reported 188 operations on duodenal ulcer, 10 being acute, with four deaths. There were three acute recurring hemorrhages, with one death. There were 175 cases of chronic ulcers, with two deaths. Of 134 patients operated upon between January 9, 1904, and June 5, 1906, 103 had been traced; of them ninety-three were cured, or practically so, eight were unimproved, and two were worse than before the operation.

Mr. George Cooper Franklin of Leicester said that the diagnosis between gastric and duodenal ulcer was by no

means clear, and could not be made, as a rule, until the abdomen had been opened. Of the symptoms the one that had impressed him most was the intense, agonizing pain which was so prominent, especially in men about fifty years old. The rigidity of the abdomen was an important symptom. In cases of perforation in duodenal ulcer, the diagnosis was far more easy than when perforation had not taken place. A gastroenterostomy was the only operation that would give relief in these cases.

Dr. J. Rose Bradford of London wished to bring before the section three points: (1) He asked Dr. Mayo his opinion as to the truth of the recent views advanced in reference to the pathology of gastric and duodenal ulcer, namely, were they not really dependent upon the production of cell toxins and their absorption by the gastric cells. (2) In reference to the diagnosis, it was interesting to hear Dr. Mayo lay so much stress upon the presence of pain and rigidity to the right of the median line; this he considered to be one of the most valuable of the physical signs in attempting to differentiate between duodenal and gastric ulcer. (3) He asked Dr. Mayo what importance he attached to the presence of melena and the absence of hematemesis. He spoke of a type of case which gave much difficulty in diagnosis, that type occurring in young men under thirty years of age, who, without symptoms of gastric disorder, presented symptoms of marked anemia. These were very difficult cases to diagnose, and also difficult to treat. He also asked when was the best time to interfere surgically. It should be remembered that there were a number of cases of duodenal ulcer in which the patient was struck down suddenly, without any symptoms of gastric disorder, as the result of a copious hemorrhage. In the absence of rapidly ensuing anemia it was a question whether surgical intervention should be instituted at once or not.

Dr. John B. Murphy of Chicago said that Dr. Mayo had forced upon the world the recognition of the fact that duodenal ulcer was more common that was formerly believed, and too much credit could not be given him for this. In 1902 Dr. Murphy published a paper in which he stated that duodenal ulcer was a rare condition; now within four years he was compelled by Dr. Mayo to change his opinion. He contrasted the operative and the postmortem diagnosis. He quoted one author who stated that out of 12,806 autopsies the existence of duodenal ulcer was found in but three cases. To-day, in Rochester, Minn., one could see three cases every day in Mayo's clinic.

Dr. Robert F. Weir of New York said he had collected fifty-seven cases together, and it was shown that the operation would be successful if done within twelve hours after symptoms of perforation developed.

Dr. Teskey of Toronto said that some patients were operated upon for stenosis of the pylorus, so-called, when it was found that the trouble was really in the duodenum.

Dr. Ochsner of Chicago said his experience was not so great as that of Dr. Mayo by one-half. He had found in the lower portion of the duodenum, from 3 to 10 cm. below the entrance of the common duct, a very distinct collection or accumulation of circular muscle fibers. Attention was drawn to this by observing a number of phenomena. During the examination of a large number of cases in which there was vomiting after the use of an anesthetic, they found always present in the vomitus a certain amount of bile. For months the fact had been known that in ileus there was always bile in the vomitus. In cases of duodenal ulcer, he had observed many times that there was severe pain, mostly to the right of the median line, when the stomach was empty. Observations were made in many cases in operating for the relief of gastric ulcer and gallstones, that the lower end of the duodenum was considerably constricted, and the upper end of the duodenum and often the pylorus, was dilated. He then called attention to Cannon's well-known discoveries regarding the use of the duodenum in digestion, etc., and said that, putting all these things together, he was led to make a number of dissections. In his dissections he actually found existing at this point these circular muscular fibers, and when there was an accumulation of irritating substances at this point there was a lack of coordinating sphincter action above and between the circular muscle action below.

Dr. Thomas Callen of Baltimore called attention to the frequency of duodenal ulcer in England, having seen three persons operated on in one day at Leeds.

Dr. John C. Monro of Boston said that Dr. Mayo had brought order out of chaos. The landmarks for finding the pylorus as given by Dr. Mayo were new to him. Many patients had been operated upon for cancer, when in reality they were subjects of duodenal ulcer. With regard to the neurasthenic type of cases of stomach disease, he now refused to operate unless there were definite obstructions, or some lesion which interfered with the pylorus or duodenum. In the after-treatment he now did not limit the amount of liquids taken by the mouth, but at once gave the patients as much as they wished to take, and it seemed to him that they did better.

Dr. Mayo said that blood was found in the vomit in duodenal as it was in gastric ulcer. Since the publication of Dr. Weir's paper in 1900, the work in duodenal ulcer had been largely surgical.

Treatment of Congenital Club-Foot.—Dr. B. E. MacKenzie of Toronto read this paper, and offered the following conclusions: (1) The prognosis in ordinary nonparalytic cases of club-foot was good. (2) The time for active treatment was early in the second year. (3) The deformity of the foot *per se* should be fully corrected; afterward the abnormal relation of the foot to the leg. (4) Anything more than subcutaneous section of tendons, ligaments, and fascia was seldom or never required. (5) After-treatment consisted in the employment at night of a retentive apparatus and by day of a properly constructed leather boot. (6) The open incision and removal of bone was unnecessary and harmful. (7) Radical operations interfered materially with the natural growth and development of the foot. (8) Restrictive methods, either by braces or apparatus, were employed as little as possible. (9) Persistent manipulation improved the development and function of the foot. (10) Operative treatment must be thorough. (11) In persons under fifteen years congenital club-foot might be so perfectly cured as to give practically perfection of form and function. (12) In adults perfection of form might also be secured, but function was sometimes impaired owing to the fixity of habits previously acquired. (13) The time required for active surgical treatment need not be more than three months. (14) Age was no bar to successful treatment.

Dr. Stiles of Edinburgh preferred open operation and not subcutaneous work. He operated as soon as the child began to walk. He did not care how radical the operation was, so long as it corrected the deformity.

Dr. McKenzie closed the discussion.

SECTION ON MEDICINE.

Third Day—Thursday, August 23.

The special subject for discussion at this session was "Heart Block," especially in its pathological and clinical aspects.

Heart Degeneration.—Prof. Aschoff of Freiburg, Germany, opened the discussion on heart block by stating that usually it was considered that general degeneration of the heart muscle occurred as a consequence of most of the infectious fevers. It was taught that these febrile conditions caused inflammatory areas in the heart muscle, and that degeneration set in as a consequence. Careful investigation in Prof. Aschoff's laboratory had shown, however, that

these supposed general inflammatory conditions did not actually exist. In 112 hearts carefully examined in every part, only a small number of inflammatory changes were found. Only diphtheria produced constant inflammatory changes in the heart muscle, and only rheumatism produced characteristic specific nodules in the myocardium. These rheumatic nodules in the heart muscles occurred just underneath the heart covering and were very small, not more than of millet-seed size. They presented certain peculiar large cell elements and reminded the examiner forcibly in many respects of tubercles. There was a regular arrangement somewhat concentric, and giant cells or cells resembling giant cells were always present. Besides these rheumatic nodules the most characteristic pathological lesions were infarcts, the so-called anemic infarcts. These seemed always to be due to thrombosis of the coronary arteries. Most of these, however, were so small that no serious influence upon the heart muscle could be thought to be exercised by them. No progressive myocarditis could ever be found. It seemed, then, that some other reason besides that ordinarily accepted must be found for heart failure and for the hypertrophy and dilatation which occurred so often in heart cases. There had been too much assumption and too little investigation in this matter of degeneration of the heart.

There came the thought, then, that perhaps the occurrence of even minute changes in certain parts of the heart might have a very serious effect. Investigation showed that whenever one special bundle of muscle fibers was affected, then heart failure became a pronounced symptom and death from this ultimately ensued. This special bundle of muscle fibers was the muscle bundle of His, so called because first described by this German anatomist. It was a series of fibers which began near the coronary vein, ran through the auricle down, to be distributed on both the ventricular walls and on the septum. This bundle had been found in all animals, and was surrounded by a special connective tissue sheath which separated it from all others. The branch of it running to the right ventricle was very small, that to the left quite large. These bundles were first described by Durkinje in 1845, in the hearts of calves. They might be seen even with the naked eye in human hearts as a stripe of muscle whiter than the surrounding tissues; in the old, whose hearts had become brown, they could be seen most easily. Unfortunately the pale color they possessed caused them often to be thought the result of degeneration and they had been frequently described as such. In the dog this bundle of muscles sometimes had branches running across the cavity. Occasionally by anomaly such crossings of the cavity were seen in man. The muscle bundle was surrounded by a clear zone of nerve fibers. Any change in this special muscle bundle produced serious effects upon the heart. The stimulus for heart pulsations which arose in the auricle was conducted through these fibers to the ventricle. Any interference with this conduction, as could be easily understood, produced serious results. Section or compression of the bundle caused the auricles and ventricles of the heart to beat independent of one another. A beat that began in the auricle did not pass over into the ventricle, and this was the condition that had received the name of heart block.

This condition had been found to exist especially in what was known as the Stokes-Adams syndrome. It also occurred whenever Cheyne-Stokes breathing was present. In a number of cases actual degenerations of the bundle had been seen. In Prof. Aschoff's experience in one case there had been a distinct sclerosis of the arteries of this bundle of muscle fiber, and in another fatty infiltration had produced compression of it. The speaker declared that the presence of a gumma or tumor in this bundle seriously interfered with the heart action. Sudden death not infrequently took place because of pathological changes here. It was evident that the pathology of sudden death would have to be reinvestigated from the standpoint of more recent knowledge with regard to this part of the heart. Any inflammatory changes, however slight, produced a modification of the heart's rhythm. It seemed to be clear now that all irregular action of the heart must be studied with this fact in mind. In a word, a new chapter in heart pathology and in the study of clinical manifestations had been opened by these observations.

Clinical Heart Block.—Dr. J. McKenzie of Burnley, Eng., said that heart block was one of the most important chapters in the recent development of a knowledge of heart disease. While the German school had to be thanked for much knowledge in the matter, it must be borne in mind that the first hint of the significance of the heart muscle had come from the studies made by Romanes on the heart of *Medusa*. Romanes was a Canadian. Gaskill had further developed the subject. Heart block was now known to be due to a failure of the conduction of the stimulus originating in the auricle into the ventricle. This fact made it much easier to understand the significance of all heart irregularity. These occurred, in Dr. MacKenzie's experience, not so much from suppression or degeneration of the bundle of His as from irritation of it. Various forms of heart arhythmia could be distinguished and the indications for treatment were much clearer because of this discovery. Dr. MacKenzie said that studies of the phenomena of heart block enabled the physician to recognize that in certain cases digitalis could do no good, while in other cases it would be of great service. Instead of the blind groping in this matter that characterized therapeutics in the past and that made so many text-books disagree with one another, so that it was eminently unsatisfactory for the physician to look at more than one of them, definite knowledge would now be obtained. He illustrated by charts from certain cases just how heart block occurred and how the auricle might beat several times while the ventricle was beating but once, and how there might be serious delay in the conduction of the impulse from the auricle.

Physiology of Heart Block.—Dr. Erlanger of Baltimore, Md., said that there was a normal delay in the conveyance of the impulse from the auricle to the ventricle, but when this occupied more than one-fifth of a second the passage of impulses was considered interfered with and heart block developed. Dr. Erlanger had studied this by applying a clamp to the bundle of His in dogs and had obtained various disturbances of the heart rhythm and of the harmony of auricle and ventricle. Slight compression with the clamp produced only delay in the conduction of the impulses. Further compression produced great interference so that the auricles beat twice as frequently as the ventricles, or sometimes three or four times as often. In his study Erlanger found that the vagus seemed to act but very little upon the ventricle and often had no effect, though it had been taught that the vagus had a very serious influence upon the ventricle. The accelerator nerve affected the ventricle but did not influence the auricle so much. In the dog, section of the bundle of His led to the development of breathing of the Cheyne-Stokes type. Cerebral symptoms always occurred whenever there was stoppage of breathing, and the medulla seemed mainly affected. There was question, then, whether the brain or the heart was primary in producing the epileptic and comatose symptoms. It seemed, though, that the brain symptoms might be referred to brain anemia, due to the interference with the heart action. A small amount of both organic disturbances must be considered as present. Gumma seemed to be one of the things that produced heart block without serious complicating symptoms. It was the only hopeful form of the affection. In one case seen with Dr. Osler, complete heart block was cured entirely as the result of the administration of potassium iodide.

(*To be Continued.*)

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H Sanders, Montgomery.	Montgomery.	Oct.	1-6
Arizona*	Ancil Martin, Phoenix	Phoenix	October	1
Arkansas*	J. P Runyan, Little Rock	Little Rock	October	9
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D Van Meter, 1723 Tremont Street, Denver	Denver	October	2
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	Nov.	13
Delaware	P.W.Tomlinson, Wilmington.	Dover	Dec.	11
Dis. of Col'bia	W.C.Woodward, Washington.	Washington	October	11
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	October	17
Georgia	E. R. Anthony, Griffin	Atlanta	October	9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October	2
Illinois	J. A. Egan, Springfield	Chicago	October	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October	23
Iowa	J. F. Kennedy, Des Moines.	Des Moines	Sept.	11
Kansas	T. E. Raines, Concordia	Topeka	October	9
Kentucky*	J. N McCormack, Bowling Green	Louisville	October	23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October	19
Maine	Wm. J. Maybury, Saco	Portland	Nov.	13
Maryland	J. McP. Scott, Hagerstown.	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept.	11
Michigan	B. D Harison, 205 Whitney Building, Detroit	Lansing	October	9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October	2
Mississippi	J. F. Hunter, Jackson	Jackson	October	9
Missouri	J. A. B. Adcock, Warrensburg.	Kansas City	Nov.	26
Montana*	Wm. C. Riddell, Helena	Helena	October	2
Nebraska	Geo. H. Brash, Beatrice	Lincoln	Nov.	7
Nevada	S. L. Lee, Carson City	Carson City	Nov.	5
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch.	Trenton	October	16
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany Syracuse, Buffalo,	Sept.	25
N. Carolina*	G. T. Sikes, Grissom	Morehead City.	May	1907
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks.	October	2
Ohio	Geo. H. Matson, Columbus.	Columbus,	Dec.	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Sept.	25
Oregon*	B. E. Miller, Portland	Portland	January	1
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	Dec.	—
Rhode Island.	G. T. Swarts, Providence	Providence	October	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	1907
S. Dakota	H. E. McNutt, Aberdeen.	Sioux Falls.	January	9
Tennessee*	T. J. Happel, Trenton.	Memphis, Nashville, Knoxville,	May,	1907
Texas	T. T. Jackson, San Antonio.	Houston	October	16
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.	October	1
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant.	Clarksburg	Nov.	13
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne		

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

New York.—As a result of conferences between the States of New Jersey, Michigan, and Ohio, formal agreements for reciprocity in medical licensure have been entered into between those States and New York. The basis upon which reciprocity obtains is a license earned on examination in any one of them. The candidate for indorsement of a medical license must present credentials from the officials of the State Board of Medical Examiners which licensed him, showing that at the time of such application he is a reputable practitioner.

Ohio.—At the recent examination there were 217 applicants (204 physicians and 13 osteopaths); of this number 199 physicians and 11 osteopaths were successful. The percentage of failures of the physicians is thus about two per cent.—a rather remarkable showing.

West Virginia.—Of the forty-four physicians examined at the April meeting of the Board, only twelve were successful.

Colorado.—A new schedule of minimum educational requirements was adopted by this Board at its July meeting. This is a decided improvement, and those who are thinking of taking the Colorado examination will do well to write at once for the latest information.

Laxity in Medical Examinations.—Dr. C. M. Jackson of Columbia, Mo., advocates in the *Journal of the American Medical Association* a more practical examination than the State boards are in the habit of giving. At the same time he expresses his opinion about the style of questions and the general laxity in the methods of examination in many States. He says that "any young man with a good memory could in a few months memorize a set of quiz compends, and (if allowed to try) could pass the State board examinations in many States without ever having seen the inside of a medical college. And, furthermore, in some instances, if all reports be true, he need not even have a good memory, provided that he carry the quiz compend in his pocket!"

Medical Items

Electric Sleep. An Experimental Study with an Electric Current of Low Tension. Illustrated with Cardiac and Respiratory Tracings.—Louise G. Robinovitch declares that there are two ways of inducing electric sleep: by abruptly turning on the required potential at once, or by slowly turning on the current, beginning with a minimum potential and increasing it gradually. The slow method is preferable. The writer has conducted various experiments on rabbits, using an electric current of low tension. The preliminary contractions seem to be painless, for the animal does not cry out. There is always some motor and respiratory disturbance at the moment of closing the current; the animal falls on its side, stops breathing, and convulses. Breathing is soon resumed. The hind limbs are the first to stop convulsing, but the fore limbs may sometimes continue to show fine tremors during the entire experiment. This disturbance is often due to technical imperfections. General and special sensibility and consciousness are abolished in this order. The animal remains limp and senseless as long as the current is kept up. Sleep is at once interrupted by the opening of the circuit. The writer has observed no objectionable manifestations in any of the animals experimented upon. Both the writer and one of her colleagues have subjected themselves to experiments of this kind. The writer gives a description of her sensations during the experiments. The awakening is spontaneous without any uncomfortable sensations. Anesthesia is complete when a current of sufficient potential is used. Tracings showing the cardiac beats and respiration during "electric sleep" are given.—*Journal of Mental Pathology.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 1, 1906:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
New York, New York	Aug.	11–18	1	
Texas, Houston	Aug.	11–18	1	..
Washington, State	July	1–31	5	..
Spokane	Aug	11–18	1	Imported.
China, Niuchwang	July	7	1	..
France, Marseilles	July	1–31	..	5
Gibraltar	Aug.	5–12	1	..
Great Britain, Liverpool	Aug.	4–11	..	1
India, Bombay	July	17–24	..	3
Calcutta	July	7–14	..	3
Karachi	July	15–22	..	4
Madras	July	14–20	..	3
Rangoon	July	7–14	..	3
Italy, General	July	26–Aug 9	18	..
Nicaragua, Bluefields	Aug	2–9	1	..
Russia, Moscow	July	21–Aug. 4	7	4
Odessa	July	28–Aug. 4	2	..
Siberia, Vladivostock	July	5–14	3	1
Spain, Barcelona	Aug.	1–10	..	11
Cadiz	July	1–31	..	1

YELLOW FEVER.

Cuba, Habana	Aug.	25	1	..
Mexico, Merida	Aug.	5–11	8	3
Tierra Blanca	Aug.	5–11	1	1
Vera Cruz	Aug.	21	1	..

CHOLERA—INSULAR.

Philippines, Manila	June	30–July 14	268	243
Provinces	July	7–14	247	177

CHOLERA.

India, Bombay	July	17–24	..	97
Calcutta	July	7–14	..	8
Madras	July	14–20	..	9
Rangoon	June	30–July 7	..	1
Straits Settlements, Singapore	May	30–June 12	2	2

PLAGUE.

Australia, Adelaide	July	12	1	On steamship *Britania*
Fremantle	June	23–30	1	..
Sydney	June	23–30	2	1
Arabia, Djeddah	July	16–22	11	11
Brazil, Bahia	June	30–July 28	5	3
China, Amoy	July	24		Epidemic
Greece, Athens	July	21–28	..	2
India, Bombay	July	17–24	..	34
Calcutta	July	7–14	..	10
Karachi	July	15–22	17	16
Rangoon	June	30–July 14	..	319
Peru, Lima	July	2	3	..
Pollando	July	9	4	..
Paita	July	9	8	..
Trujillo	June	9	3	..

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Original Articles.

HOW MAY THE MEDICAL AND TEACHING PROFESSIONS COOPERATE TO IMPROVE THE MORAL, MENTAL, AND PHYSICAL CONDITION OF THE YOUNG?*

By S. A. KNOPF, M.D.,

NEW YORK.

I DESIRE first to express to the Academy my deep appreciation of the honor which has been conferred upon me by my having been selected to open the symposium on this important topic. In the short space of time allotted to me, it is of course out of the question to treat this theme as exhaustively and as thoroughly as it should be treated. All I may be able to do is to present some ideas concerning the respective duties of the two professions tending toward the desired end, namely, to attain a better type of American citizen, stronger in mind, higher in morals, and stronger in physique. However, at the outset I wish to say these two professions will be powerless to cope with the problem unless the government and our larged-minded, generous philanthropists cooperate with us in our labors.

To begin at the beginning, we should have the courage to state and to teach that the strength of the nation does not depend upon the number of its citizens, but on the kind; not upon quantity, but upon quality. In order that disease, crime, idiocy, mental and moral deficiency shall not be perpetuated through indiscriminate procreation, we must strike at the root of the evil. I am fully aware of the difficulty we are confronted with when trying to have laws enacted to prevent the syphilitic, the acute tuberculous, the chronic insane and chronic alcoholic, or even only the chronic criminal, or idiot from marrying, but a beginning has been made in some States in this direction, and we should continue our efforts and not be discouraged. In the meantime much can be done by us individually.

The family physician can often by gentle persuasion and convincing arguments accomplish as much or even more than the law, in the direction of preventing marriages when evident disastrous results are to be feared. If marriage cannot be prevented we should do all we can to teach the parents how not to procreate a diseased race. In tuberculosis, for instance, the physician has a divine mission to perform in preserving the life of the tuberculous mother, which is always endangered by pregnancy, and preventing the transmission of a tuberculous diathesis to an innocent child. I feel very strongly on this subject, but, as I have said on previous occasions, I know that there are many worthy men and women, inside and outside of the medical profession, who differ with me. However this may be, I am willing to take the responsibility before the law and my God for each time I have taught a consumptive husband and wife not to procreate a tuberculous child.

It is prevention to which we must look. In order that a child may grow up to as nearly perfect manhood or womanhood as possible its prenatal condition must not be less favorable than its postnatal life. How, for example, can the pregnant woman who is obliged to work in a factory or mill almost until the very hour of her confinement be the mother of a healthy child? From John Spargo's recent epoch-making book, "The Bitter Cry of the Children," I beg leave in relation to this subject to quote the following: "Cases in which women endure the agony of parturition amid the roar and whirl of machinery, and the bed of childbirth is the factory floor, are by no means uncommon. From a large mill, less than twenty miles from New York City, four such cases were reported to me in less than three months. Careful personal investigation in each case revealed the fact that the unfortunate woman had begged in vain that she might be allowed to go home. One such case occurred on the morning of June 27 of last year (1905) and was reported to me that same evening by letter. The writer of the letter is well known to me and his testimony unimpeachable. A poor Slav woman, little more than a child in years, begged for permission to go home because she felt ill and unable to stand. Notwithstanding her condition was perfectly evident, her appeal was denied with most brutal oaths. Cowering with fear, she shrank away back to her loom with tears of shame and physical agony. Soon afterward her shrieks were heard above the din of the mill, and there, in the presence of scores of workers of both sexes, many of whom were girls of fourteen years of age, her child was born." Commenting on this, Mr. Spargo continues: "At present the English law forbids the employment of a mother within four weeks after she has given birth to a child, and the trend of public opinion seems to be in favor of the extension of the period of exemption to the standard set by the Swiss law. So far as I am aware there exists no legislation of this kind in the United States, in which respect we stand alone among the great nations and behind the savages of all lands and ages."

As pathetic as the incident of cruelty to child-bearing mothers related by Mr. Spargo is the graphic description of the life of the married woman, in Mr. Upton Sinclair's recent book, "The Jungle." Here we have a highly sensitive woman with a child under her heart obliged to work from morning till night in unsanitary, depressing surroundings until the very hour of her confinement. The perpetual noise of machinery, the sickening odors, and the overstrain—what results must they produce on the mother and the child alike? Is it a wonder that the women working under such conditions in those stock-yards complain of frightful headaches,

*Opening address for a symposium on this subject presented before the American Academy of Medicine, at its annual meeting, held in Boston, June 4, 1906.

are subject to fits and aimless weeping? Mr. Sinclair is right when he makes the husband of such a woman say that "this work was killing her by inches, she was not fitted for it—no woman was fitted for it—no woman ought to be allowed to do such work —they ought not to marry to have children."

Eli Reclus tells us that among savages it is the universal custom to exempt their women from toil during stated periods prior to and follwing childbirth. In a number of European countries, and particularly in Switzerland, the employment of a mother is prohibited for two months before confinement, and the same period after.

Let us by all means strive to have similar laws enacted and have them rigorously enforced. At the same time let us not fail to impress upon our philanthropists the fact that a charity directed toward making it possible for the future mother to suspend work two months previous and two months after her confinement will be productive of healthier mothers and healthier children.

The newly born child should have its natural food from its mother's breast. Only in rare instances should it be necessary to substitute careful artificial feeding. The malnutrition of the infant, due either to the insufficiency of the mother's milk or ignorance regarding artificial feeding, is by no means confined to the poor alone. Prof. Holt, in his admirable book on "Diseases of Infancy and Childhood," very justly says: "One of the most striking things about children suffering from malnutrition is the vulnerability. They 'take' everything. Catarrhal processes in the nose (adenoids), pharynx, bronchi, are readily excited, and, once begun, tend to run a protracted course. There is but little resistance to any acute infectious disease which the child may contract."

My personal and somewhat extensive experience in tuberculosis has shown me that artificially fed children, and, when there are large families usually the late comers, fifth, sixth, or seventh child, contract tuberculosis more frequently than the first-born and the breastfed. This can be accounted for on the one hand by physiological reasons, on the other by economic ones. The father is older and less vigorous, the mother worn out by frequent pregnancies. The larger number of children to support do not permit the parents to give the late comers the same care and ample nutrition which it was the privilege of the first ones to receive. What can we do to have more breastfed and vigorous babies and thus a more vigorous race, a healthier type of American men and women strong enough to risist a tuberculous invasion, or for that matter any other infectious disease to which a weakened organism easily falls prey? No amount of wealth, no family prestige or social connection can give the child that inheritance which it receives when born of vigorous parents, nursed by its own mother, and tenderly cared for until able to care for itself.

Let the mothers who, for the sake of pleasure and convenience, abandon the divine privilege of nursing their own children change this unnatural practice. I feel certain that if they but knew the difference in the physical and intellectual make-up of their sons and daughters when tenderly nursed by themselves, or when handed over to strangers to become bottlefed babies, they surely would do differently. I know it will be said that not every mother can nurse her infant. This is true in some instances; but to the woman, the future mother of mothers, I like to say that it has been statistically demonstrated that if one generation of mothers fail to give their infants, and particularly female infants, food from the source which Nature has designed, the next generation of mothers will have great difficulty in the natural feeding of their infants. The reverse has also been demonstrated, and it has even been shown that when mothers not fully able to supply the infant with food have supplemented the artificial feeding as best they could with their own breast, their daughters have been able to fulfill the divine duty of nursing their infants, if not always entirely, at least in a much greater degree than the preceding generation. Let us draw a lesson from this scientific fact which is corroborated by Nature's own laws. This lesson once learned, the coming generation of American men and women may yet surpass all other nations in physical beauty, intellectual attainments, and moral strength.

The artificial feeding of a baby should not be left to the discretion of the mother or midwife, but should be taught to well-to-do people by the family physician, and to the poor by physicians designated for that purpose by the Board of Health.

We are all familiar with the excellent work that is done by the Health Department's physicians in many of our cities in teaching the poor how to feed their babies, particularly in summer. This work, often supplemented by philanthropic enterprises, pure milk depots, ice stations, and outings given to mothers and children, has reduced the mortality from summer diarrhea and similar infectious diseases to a considerable degree, but much is yet to be done in this direction. There are so many mothers among our laboring population who have had, owing to early struggles, little opportunity to get even a primary notion of how to keep a house clean, or how to cook plain but good substantial meals with modest means. Cooking lessons in our public schools will, I presume, in time do away with ignorance in the coming generation. But there is many a young mother to-day living in our crowded tenements who would be grateful if she could be taught the lesson of good and economic housekeeping and cooking. Here is a field of the greatest usefulness in which the noble- minded, cultured and educated women may help their less fortunate sisters.*

We are now coming to the point where the cooperation of pedagogics and medicine begins. At what age, and for how long a day, and for how many years should a child go to kindergarten? What sanitary precautions should be taken to prevent the contraction and propagation of disease in such institutions? To every public and private kindergarten a physician should be attached whose duty shold be to examine every child before it is admitted as a pupil. Furthermore, the physician should visit the kindergarten daily so as to discover if any child present is afflicted with an infectious, communicable or contagious disease. If there is one its exclusion with a note to the parents should at once be effected. I do believe that common colds, bronchitis, coryza (which mean often nothing less than a grippe), should be included in this list.

A kindergarten can be in operation throughout the year, and in mild weather the sessions should be held in the open air, on roof gardens or playgrounds. A child can never have too much play of the right kind. The sessions should, of course, not be long and always with frequent recesses. Two hours of kindergarten instruction should suffice between the

* Miss Lillian D. Wald, of the Nurses' Settlement, has equipped for this purpose a flat in the midst of the crowded districts, where model housekeeping is taught and prizes given for the best work.

ages of four and seven. With a few exceptions no child is physically and mentally sufficiently equipped to enter the public or private school for regular instruction before the age of seven. In this conviction I do not stand alone—many authorities in pedagogics and medicine share this opinion, among them the Nestor of New York physicians, my venerable friend, Prof. A. Jacobi.

When the child enters the public or private school to begin its studies in the primary grades a new problem is presented. Its solution depends upon the satisfactory cooperation of the private physician representing the interests of the family; the school physician, representing the Board of Health; the teacher and superintendent, representing the Board of Education, and upon the philanthropist who voluntarily gives his aid to supplement the work of the authorities in their effort to avoid preventable diseases, and develop the minds and bodies of the children entrusted into their care.

In an audience of this type it would seem almost needless to point out the necessity of a thorough physical examination on entering school, a daily inspection and a periodical reexamination of all children, in order to eliminate preventable, contagious, and communicable diseases, and to develop a sound mind in a sound body. I am convinced that through careful daily inspection the morbidity and mortality from such children's diseases as measles, whooping-cough, scarlet fever, diphtheria, trachoma, pediculosis, chorea, etc., would be materially diminished, and has been diminished in communities where school inspection has been carried on with thoroughness. The first examination must, of course, always include an examination for defective vision, defective hearing, defective mastication, glandular growth, vegetations in the retropharynx, deformities, weak or diseased lungs, heart disease, or inferior mentality, etc. That the conditions just enumerated must impair the intellectual state and moral development of any child is obvious. I have no more striking evidence for this than a table kindly furnished to me by Dr. J. J. Cronin, Assistant Chief Medical Inspector of the Health Department of New York, which shows the number of defects found at a recent examination of Truant School No. 120: Eighty-eight boys were examined, and out of these seventy-seven were found defective; in sixty-two anterior glands were discovered; in forty-eight defective vision was discovered; thirty-four had bad teeth; nineteen had hypertrophied tonsils; seventeen had defective nasal breathing; thirteen had skin disease; nine were discovered as having bad mentality; eight had post-nasal growth; three suffered with cardiac disease; two had deformity of extremities; one had defective hearing, and one had a defective palate. It goes without saying that in many of the pupils there was association of defects; thus eight had defective vision and glands, seven defective vision, defective teeth and glands, and so on.

If we remember that truancy is the first stigma of criminality and mental depravity, does it not seem that prevention in this instance is indeed economy? But it is not only the truant who will be morally and mentally benefited by the careful medical examination of the school child and the removal of existing physical defects.

How many times has the deaf child been considered dull and put back in his studies until his defect had been discovered, and, by his removal to a front seat, where he could hear the teacher, he has been made bright and happy! How many times has the myopic or astigmatic child been scolded for not being able to see the drawings on the blackboards or read and write properly, when, with the use of proper glasses, all his unhappiness and seeming lack of intellect and interest had been cured as if by magic! How often has the dull, hard-of-hearing mouth breather been made bright and intelligent by the removal of the vegetations of the retropharynx! While the discovery of such defects as just mentioned lie primarily within the province of the examining physicians the cooperation of the teacher is, of course, inestimable. Both should work hand in hand. Spinal curvatures should be prevented by proper postures, proper desks, frequent change of position, and exercise.

The following table will show the frequency of the diseases, not in the truant child as in the above-mentioned statistics, but in the well-behaved one. For the following summarized report of 7,166 examinations from March 27, 1905, to April 28, 1905, I am again indebted to the courtesy of Dr. Cronin: Number of cases of bad nutrition, 632; of enlarged anterior glands, 1,221; enlarged posterior glands, 417; chorea, 85; cardiac disease, 133; pulmonary disease, 127; skin disease, 126; deformity of spine, 88; deformity of chest, 100; deformity of the extremities, 133; defective vision (objective), 1,273; defective vision (subjected), 517; defective hearing, 265; defective nasal breathing, 843; defective teeth, 1,946; deformed palate, 121; hypertrophied tonsil, 602; posterior nasal growths, 704; bad mentality, 650; requiring medical attention, 3,132.

To show the actual work accomplished by our department for the health of New York City's school children let me add to Dr. Cronin's special report a few figures from the general report made public by Health Commissioner Darlington since the reorganization of the system of medical school inspection of the Board of Health on March 29, 1905. The inspectors have examined 55,332 children, and have reported 18,182 cases of defective teeth, 16,394 cases of defective vision, and 6,182 cases of defective nasal breathing. Treatment was necessary in 33,551 cases. The conditions most frequently encountered were enlarged anterior cervical glands, visual defects, and imperfect teeth, of each of which more than 14,000 cases were recorded. During the last year 88,964 visits were made to the schools by medical inspectors, and 18,844 children were excluded for contagious diseases. Of this latter number 8,833 were for eye diseases, 4,692 for pediculosis, 2,018 for skin diseases, 312 for measles, and 74 for diphtheria. During 1903 65,294 children were excluded, and during 1904, 25,369. Much importance is attached to the work of the school nurses, through which many children that would formerly have been excluded are enabled to continue in attendance.

The curriculum of the school for all classes should be arranged so as not to tax the mind and nervous system to the detriment of the physical development. There should be sufficient physical exercise, particularly breathing exercises. I, personally, favor singing and recitation outdoors whenever the weather permits.

The reason why many of our school children do not sleep enough is, perhaps, in as many instances the fault of the parents as it may be the fault of the curriculum instituted by the Board of Education. Up to its fifteenth year a child attending school should have at least nine hours' sleep in the summer and nine and a half in winter. The overtaxing of the mind and nervous system of the girl at the age when she enters womanhood should be carefully

avoided. In every instance when the pupil feels tired, overworked, and inattentive inquiries should be made at the home of the child concerning its mode of life. In many cases it may be discovered that thoughtless parents impose upon the child the performance of so many household duties that its health becomes undermined. The child labor in the homes of many of our school children is as criminal and disastrous as it is in our factories.

I have known of homes in which the elder children, the boys and girls from ten to twelve years old, were made to do much more housework than many a servant would do, and this in addition to the child's school duties. There is a child-labor problem in far too many homes which, I believe, needs looking after. I have known of homes where the mother had died and the care of four younger children, ranging in age from one to eight years, was left to the oldest daughter, a girl of ten, truly a little mother, but a martyr at the same time. The father did not realize the condition until the child mother became ill and contracted tuberculosis. The child-labor problem confronts the physicians and educators who wish to improve the mental, moral, and physical conditions of the young, with all its perplexities.

I hold child labor the curse of our nation, responsible for the frequency of tuberculosis in childhood, and for the prevalence of nervous diseases in children, young men and women, and last, but not least, responsible for alcoholism in the young. How can we expect the delicate growing system of a child, wrecked often by eight or ten hours' day labor, and in some instances even by long hours of night work, to resist the temptation of drink? I cannot enter here into enumeration of the States in which, be it said to their shame, child labor is still permitted to exist.

Felix Adler, speaking in New York the other day, declared that child labor in the United States was steadily increasing. There are, he stated, 10,000 children working about the mines, 7,000 in the glass industry, and 60,000 in the Southern textile mills. There are many noble men and women endeavoring at this moment to combat this fearful practice by the enactment and enforcement of child-labor laws. No less a personage than our distinguished President has taken up this question, hoping to accomplish the suppression of child labor throughout the land. President Roosevelt, in his recent message at the opening of the last session of Congress, recommended in strong terms a model child-labor law, in order that Congress, by wise and discriminating legislation for the District of Columbia, might set a worthy example to the States in which it has no power to legislate on this subject. Permit me to read to you a few passages from an appeal regarding this bill issued recently by the National Child Labor Committee,* which, I think, speak for themselves: "We request the friends of the twenty-nine million children under sixteen years of age in the United States, for whose industrial guardianship, and for the protection of whose rights to healthy physical development, education, and leisure the National Committee is organized, to cooperate in recommending this bill to the favorable attention of their members in Congress. It will mean much for our cause in every State to have the National Capital a reasonably strong and fair law on the subject of child labor. Members and friends of local child-labor committees, of educational, charitable, and philanthropic societies, of women's clubs, and all other organizations interested in this movement, are earnestly requested to write to their respective senators and members of Congress, sending them, if possible, the inclosed copy of the bill to be presented, and urging the passage of this bill."

From Commissioner Darlington's report you must have noticed the large number of children (18,182 out of 55,332) who had defective teeth. I would not wish to recommend free dental service for all school children, but it would seem to me well to urge the parents who are able to have their children's teeth attended to at their own expense. The children of the absolute poor should be attended to by a dentist employed by the Department of Health or Board of Education.

We have found it advantageous in New York to treat trachoma in a room fitted for that purpose in the school building. The children treated thus did not lose one-tenth part of the time that was formerly consumed by having them go to a distant dispensary, where they often had to wait for hours until their turn came. If we do wish to look after the teeth of our school children, some such arrangement will have to be made unless a dental clinic is located near the school.

Of much greater importance than the care of the teeth in school children is, of course, the care of the eyes and ears. In an authoritative article ("The Eyes and Ears of School Children," *Medicine,* April, 1906) Dr. Frank Allport of Chicago, Ill., says that of the 20,000,000 school children in the United States about 16,000,000, or 80 per cent., are suffering from some eye, ear, nose, or throat disease, which can easily be detected, and generally cured, if the public health and educational authorities will only agree that this work shall be done. Further on he says: "It may also interest students of sociology to know that there are in the United States over 300,000 blind people, many of whom would not have become blind if their disabilities had been detected during school life, and that it costs the public in the neighborhood of $15,000,000 to care for these unfortunates. Reducing the question, then, to the mere sordid standard of money, is it a matter of public economy to neglect the eyes of school children?"

The number of pupils which should be assigned to one teacher should never exceed fifty in the primary grades, and, as far as practicable, the mentally defective should be weeded out and placed either separately or in lower grades, where they can keep up with the work done by the others. This should be done, not only in the interests of the pupils, but in the interest of the teacher as well. A class, in which there are placed indiscriminately the mentally defective and the mentally bright, cannot make the progress the curriculum prescribes, and when the work is forced a nervous strain is put upon teachers and pupils alike.

There should be opportunity for appropriate training of the mentally deficient as well as of the especially talented pupils. Special schools for the unusually gifted have been recently suggested in Germany, "to care for the neglected genius whose labor if properly directed might be of inestimable value to civilization." *

In our anxiety to relieve the condition detrimental to the physical, moral, and mental development of the children let us not forget the teachers, who have also a nervous system. Those of us who have the

*This appeal was accompanied by a copy of a most excellent bill proposed to regulate the employment of child labor in the District of Columbia.

* *American Medicine,* June, 1906.

fortune to come in contact with them should know how often their devotion to duty is the cause of a physical breakdown. Here, as in all such matters, prevention is better than the uncertainty of cure.

I have seen a good number of young ladies who, after they had passed the teachers' examination, became nervous wrecks, a condition which some were not able to overcome for the rest of their lives. They would lose contol of their nerves at the slightest provocation, and, as a result, in spite of their splendid intellectual training, they made poor teachers.

A somewhat more judicious management on the part of the examining board to spread the examination over a greater number of days is all that is necessary to remedy this condition.

I now come to a part of our subject which has been of deep concern to me for a number of years. I refer to the underfeeding of the pupils of many of the public schools who come from homes of the poor. In investigating the causes of tuberculous and scrofulous diseases of childhood, particularly among our tenement dwellers, I came to the conclusion that underfeeding and improper feeding was the primary and even more frequent cause than bad housing and unsanitary conditions in general. Many observers in this and other lands have arrived at the same conclusion. Although in America the investigations along this line have not been carried on as thoroughly as in other countries, enough work has been done by such men as Mr. Hunter, Mr. Spargo, and others, to show the seriousness of the situation. Let me quote again from Mr. Spargo's book ("The Bitter Cry of the Children"): "When it was suggested that 60,000 or 70,000 children go to school in our greatest city in an underfed condition, and when Dr. W. H. Maxwell, superintendent of the Board of Education of New York City, declares in a public address that there are hundreds of thousands of children in the public schools of the nation unable to study or learn because of their hunger, something of a sensation was caused from one end of the land to the other."

Investigations in this matter are not easy, for, be it said to the honor of the average American child of the poor, and of the poorest of the poor, relatively few are willing to acknowledge the poverty of their parents. Here is a story told by a principal of a school to Mr. Spargo. I will give it in the principal's own words. It relates to a little boy called Tony X.: "I went into a classroom and asked: 'How many children had no breakfast to-day? Show hands.' Not a single hand went up. Then the teacher said, 'Why, I am sure that boy, Tony, looks as if he were half starved.' And he really did, so I told him to stand up, and I questioned him. 'Did you have any breakfast this morning, Tony?' I asked. He hung his head for a minute, and then said, 'No, mum.' 'Now, Tony, wouldn't you like to have a good breakfast every morning, some hot coffee and nice rolls?' 'Yes, mum.' 'Well, do you know the Salvation Army, where they give breakfast to little boys who need them?' 'Yes, mum.' 'Well, if I give you a ticket, won't you go there tomorrow and get your breakfast?' The little boy's eyes flashed, and he looked straight at me and said, 'No, mum; I don't want it.' Really, I admired his spirit. Poor as he was, he did not want charity."

Dr. Cronin's investigation shows that about 9 per cent. of children suffer from bad nutrition. Mr. Spargo privately examined in sixteen New York schools 12,800 children, and out of that number 987, or 7.01 per cent., were reported as having had no breakfast at all, and 963—that is to say, 15.32 per cent.—had had a totally inadequate breakfast. But the underfeeding of these children is not only due to "no breakfast," or the inadequate breakfast, but also due to the hasty luncheon, consisting in many instances of a cracker, an apple, a slice of bread, or some cake bought for a few pennies, and sometimes candy instead.

Many countries, particularly France, Germany, England, Italy, and Switzerland, and in our own country a number of cities, have realized that such lunches are not enough for growing girls or boys, and have undertaken to provide children with warm, substantial, and nutritious midday meals, either free or at cost price. Where this has been done it was demonstrated that the pupils have been able to do better work, that there was less disease, that the children increased in weight, and were made happier in every respect. I do not believe in pauperizing, and would always encourage the payment of a few pennies for the luncheon, but I would not be too strict in this matter. I would rather give lunch to ten children whose parents could pay than to have one innocent little fellow suffer from starvation. Where boards of education and boards of health cannot agree on this, let philanthropists come forward to the rescue.

There is one feature in our present system of education and care for the physical development of our young which seems to be neglected in all our primary public educational institutions. I refer to the instructions in swimming and the incidental compulsory bath. Never was I more impressed with the necessity of such instruction than when duty called me to my service on North Brother's Island on the day of the fearful Slocum disaster. I am convinced to-day, as I was then, that hundreds of those little ones could have been saved from the untimely death to which greed, inhumanity to man, and laxity of law had condemned them had they known how to swim. Every well-equipped college has its swimming tank; why should a public school be behind in anything which may not only tend to the physical development of its pupils, but may be instrumental, in case of accident, to save their own lives or the lives of others? I am, furthermore, convinced that compulsory swimming lessons would give to many a pupil, coming from the overcrowded tenement districts, and often unsanitary homes, a cleansing bath which he otherwise would not get.

The playground of the roof garden, and, if possible, a gymnasium, are, of course, as essential, or even more so, than the swimming tank. The importance of gymnastics, the utility of judicious athletics for schoolboys and girls and college students of both sexes, no one familiar with college life, the exuberance of youth, the necessity of outdoor exercise after hours of confining study, would wish to deny. Only against hazing and such sports as experience has demonstrated to have in many instances proved disastrous to individual pupils would I protest. Overtraining, even for such innocent sports as running, boating, etc., has often proved likewise disastrous. Whenever I am called to examine for tuberculosis a college graduate who has distinguished himself in athletics, during his college course, I am always apprehensive, for the prognosis proves almost invariably more unfavorable in such a case than in the average individual.

Wherever the locality permits it, school farms will form a valuable adjuvant in the education of our children. I cannot speak too highly of the pioneer work done in this direction by my esteemed

friend, Mrs. Henry Parson, in New York, to whose untiring energy we are indebted for this beautiful philanthropy.

The First Children's School Farm in New York was conducted by Mrs. Parson on an unimproved site, condemned for a future park, at Fifty-third street and Eleventh avenue, and overlooking the Hudson river. It had been a dumping ground for years. The only available spot in the whole eight acres the first year was 114 feet by 84 feet. No plough in the Park Department was strong enough to break the ground, and a city contractor had to be resorted to for a heavy street-breaking plough. Then lime, rags, wire, bottles, tin cans, and stones were unearthed, but the conquering of difficulties is one of life's most exhilarating lessons. Here was a neighborhood where the rougher element considered they owned everything in sight. They called themselves the Sons of Rest. Going to prison for ten days or six months was simply an incident in their lives, which they spoke of as "Going to Larry Murphy's farm," or "A sail up the river." The city seemed to have forgotten this section. Only unlimited faith in the value to mankind of what one is endeavoring to accomplish can have caused Mrs. Parson to adhere to her work through the worst conditions, opposition, and criticism.

During the summer of 1904 the real work of construction in the park began. Fearing she might lose the ground already gained with these people, should the work be discontinued during the period of park construction, Mrs. Parsons, assisted by her son and daughter, braved the discomforts and continued the work on a smaller area than formerly. At this time the permanent location of the "farms" had been graded, and temporary structures for a toolhouse and a farmhouse had been completed. Mrs. Parsons and her helpers were to be found on the ground daily, from 9 A.M. to 6 P.M., patiently awaiting the arrival of the top soil needed, and receiving applications for the 4x11 plot. "Mrs. Parsons, may I have a farm?" was asked by more than five hundred children, more than half of whom were refused, owing to lack of space.

Mrs. Parson's work has attracted attention throughout the United States. The "farms" have been visited by thousands of persons representing educational institutions of this country and abroad. They are located in the De Witt Clinton Park, in the heart of the tenement districts from Fifty-second to Fifty-fourth streets, and from Eleventh to Twelfth avenues. It is several acres in extent, and now one of the most perfect parks in the country. School gardens have the high indorsement of the United States Department of Agriculture. The latter is constantly occupied in cooperative work with the school gardens in Washington and other cities of the United States.

It is in the study of nature, of plant and animal life, that coeducation can be most advantageously carried on for children. There are as many opponents to as advocates for coeducation, and I have some hesitation in expressing an opinion. In small communities coeducation throughout school life seems to be necessary for economic reasons. Personally, I do not see why partial coeducation at least should not be feasible, and even advisable at certain ages. Between the ages of twelve and seventeen it might be best to have separate classes, preferably separate schools and teachers and superintendents of the respective sexes, as it is during that time that the manliness in the boy and the womanly nature in the girl develop, perhaps, to a better advantage under different environments. In college and university life partial or even complete coeducation would, I think, be less objectionable. During the first two years of my college career I was in a small institution where coeducation was a feature. It always seemed to me that the presence of the ladies had rather an ennobling and restraining influence on the young men.

The teaching of popular hygiene and physiology should be made a part of the curriculum as soon as the age and understanding of the pupil will permit. Teaching the pupils how to prevent such diseases as tuberculosis by cleanliness is certainly a matter of importance. With the growth of intelligence and understanding, with the entrance of the girls and boys into the age of adolescence, the physiology of sexual life and embryology should be taught to them preferably, perhaps, by teachers of their own sex. I cannot too strongly recommend teaching older pupils all that is to be known of how to live a pure and moral life, sexually as in every other respect. They should know the existence of such contagious diseases as gonorrhea and syphilis, and their mode of prevention. Full knowledge in such matters is better than ignorance. Those afflicted with contagious diseases should be excluded until a cure is established.

For tuberculous and crippled children there should be school sanatoria on the seaside or island. There the teacher who contracted tuberculosis in the performance of her duty should be given an opportunity to get well. If the disease is too far advanced to make the continuation of teaching inadvisable, a pension should be provided for the tuberculous school teacher, so as to make her as comfortable and free from care as possible. Atypical children and the mentally defective should be treated in special schools by competent and specially trained instructors.

Private and public schools, college buildings and dormitories, gymnasiums, swimming tanks, etc., all should be models of sanitation, models of ideal lighting and perfect ventilation.

For a nation to look after its children's welfare from their prenatal state to their entrance upon man or womanhood requires the cooperation of intelligent parents, devoted teachers, competent family and school physicians, perfect harmony between health and school authorities, a wise and benevolent government, great-hearted, generous philanthropists; and, besides all this, large sums from the public funds. To the $100,000,000 invested in the public schools in this country to-day a like sum may have to be added for the destruction of unsanitary schoolhouses and the construction of new and better ones; for the employment of more teachers and more school physicians, and the establishment of special school sanatoria. But the money thus spent will be well spent. I, for one at least, could not see the surplus of our wealth better invested than in preparing a higher, stronger, and better type of citizens to take our place.

I know that in presenting to you in this fragmentary way what I think the children of this nation need in order to improve their mental, moral, and physical condition, and enable them to become ideal American citizens, I may be accused of having too vivid an imagination and of hunting unattainable ideals; but upon the type of men and women we make our children depends the destiny of our republic. The whole world looks upon us as the ideal country, and I am convinced that, if we can but make of our children the right type of citizens, we can

sustain this reputation and become the leader of nations. In defense of my (let me trust) pardonable optimism, I will close with words of one of America's greatest citizens, the late Carl Schurz, whose mortal remains we have just laid to rest:

"You may tell me that my views are visionary, that the destiny of this country is less exalted, that the American people are less great than I think they are or ought to be. I answer, ideals are like stars; you will not succeed in touching them with your hands; but, like the seafaring man on the desert of waters, you choose them as your guides, and, following them, you reach your destiny."

16 West Ninety-fifth Street

CLINICAL OBSERVATIONS CONCERNING THE NASAL PASSAGES AND THE RELATION THEY BEAR TO THE ORGANS OF SIGHT AND HEARING.*

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In a recent address before the British Medical Association, it was stated that "the health of the people, both bodily and mental, is the principal asset of the nation; without a vigorous and energetic population no nation can make progress, and coincident with the cessation of progress is the commencement of decadence." This ideal condition of the well-being of our fellows is never fully attained, yet is not the province and privilege of our calling such as to ever strive to respond in the highest sense to one's best endeavors in aiding the sufferings of mankind? And in the time we spend together this evening, if we are but led along the way of any new train of thought, our aim and object is accomplished.

This is the age of specialization, when there are subdivisions in specializing. Indeed, do we not grow weary of the term, when the self-styled specialist may be well described as one who may not develop beyond the germifying stage? The remark of Dr. Billings is obviously true, when he said, "there must be specialties and specialists, and the result will be good and evil, but the evils fall largely upon the specialists who attempt to construct the pyramid of their knowledge with the small end as a foundation." The great field of learning as it existed a few centuries ago must have been within the mental scope of one scholarly mind; but in recent years, with the vast progress in learning, far-reaching in all callings of life, note that the development of the specialist plays an all-important part in the advance of science. While medicine may be said to date from antiquity, its more recent offshoots of otology, rhinology, and laryngology have made rapid progress within our day and generation. To illustrate this point, let me call your attention to a remark made some time ago by a former teacher of mine, who is an aurist of world-wide fame. Some forty years ago he graduated in medicine, and decided to go abroad to pursue a course of studies on the ear. He confided his plans to one of his professors, a man of no mean reputation, who met his proposition in this wise, "why, man, there is nothing to do but syringe an ear." To-day we have multiplied and refined our methods of treatment, and, further, we have added score upon score of operations upon the ear, nose, and throat and their adnexa, until it might be thought that the limits of surgery had been reached.

Let us not, however, be too conservative in placing a limit upon the future possibilities of the surgeon in these special fields of research.

It seems to dwell in the minds of many that there is something mysterious and hidden in the study and treatment of the diseases of the ear, nose, and throat. Thus, do we not find at times a notably conspicuous lack of necessary importance attached to the proper methods and treatment of patients suffering from affections of these organs? It is only within the last decade and a half, and notably within the last decade, that the very great development in rhinology has been made, and a remarkable change is shown in the attitude of the specialist toward diseases depending directly and remotely upon the interference with the normal functions of the nose. As a result, the advances have been made not only in the knowledge of the physiological functions of the nose and its histology and pathological anatomy, but they have been followed by greater improvement in examination and treatment.

More careful study on the part of the rhinologist of the importance of nasal and nasopharyngeal obstructions, as the causal factor in producing cerebral symptoms and many diseases of the eye, ear, larynx, chest, as well as stomachic and intestinal disorders and more general disturbances and nervous and reflex conditions, makes it self-evident that the earlier symptoms should not be overlooked. Thus it is all-important and essential to arrest an advance of the disease before the condition has become serious and unalterable. Moreover, it ought now to be evident that treatment at this stage in the greater proporiton of cases is of decided value. Yet how little care is given to these first principles.

It is manifest that the advanced stages of disease are more easily recognized, but our treatment is often only palliative. Further, the earlier evidences of disease are less easily defined, requiring very careful attention, but the treatment is often of real value, accomplishing much for the patient. Would we observe and interpret the changes as seen with the rhinoscopic mirror and the nasal speculum, by the aid of electric and reflected light, probe, and cocaine, we must acquire great patience, time, continual practice, and supervision. However, if more thought were given to these first essentials, we should hear less of the terms catarrh, deafness, and neuralgia. Nor would they be referred to as if they were diseases, instead of pathological symptoms.

In this connection, let us hold to fundamental principles and at once raise the question: "Have we a case of rhinitis; if so, what form, and what has caused it; and, finally, how shall we best treat such a condition?" We should guard ourselves against falling into the too much routine practice of indiscriminately ordering washes, gargles, sprays, nasal douches, and inhalations, and prolonging their use indefinitely. Thus, such treatment at first may be soothing, but later will rather do harm than good. The function of the nasal tissue may be seriously irritated; moreover, it may be injured by such unscientific methods of treatment. Would we think for a moment of syringing a patient's ear, because deafness was complained of, blindly hoping to remove cerumen, unless we had previously examined the ear by ocular inspection and submitted the patient to subject questioning?

Further, I think sometimes the general impression prevails that deafness is also due to a closure of the Eustachian tube. However, such an offhand diag-

*Read before the Women's Medical Association of New York City, January 17, 1906.

nosis has been frequently given when there was no obstructive lesion. But our diagnosis would not be complete until we had carefully examined the patient.

Let us for a few moments, in a brief way, limit our attention to a general description of the anatomy and functions of the upper air tract. We may say that the nasal cavity proper includes the space limited by the nostrils in front and the posterior nares behind. Anatomists divide this cavity into two parts having a septum vertically placed in the middle line. On the outer sides of the nasal cavities are found three, and even sometimes four, horizontal, scroll-like bones called the turbinated bodies or bones. These scroll-like bones, with irregular and somewhat tortuous surfaces, divide the nasal cavities into corresponding meatuses or passages. In each of these passages, except the lower, some one or more of the accessory nasal sinuses or cells open, and in the lower meatus the lacrymal duct has its exit. Moreover, the nasal cavities and their accessory sinuses and cells are everywhere lined with mucous membrane, that extends from the nares in front to the cribriform plate of the roof above, to the pharynx behind, and to the middle ear, antrum, and mastoid cells by means of the Eustachian tube; also to the conjunctiva by way of the lacrymal duct; and note that beneath the mucous membrane in the turbinated bones is a large supply of blood-vessels. We are further told that the epithelium covering the mucous membrane is for the greater part of the columnar ciliated variety, but we meet the exception near the orifice of the nose and in the olfactory region, where we find non-ciliated epithelium, depending upon the functions these various parts have to fulfill.

The nasal cavities serve a fourfold purpose, mainly vocalization, olfaction, respiration, and drainage. Let our interest center upon the functions of respiration and drainage. By means of the former the nasal tract may be supplied with a requisite amount of air, and moreover the air may be sufficiently warmed, moistened, and filtered. The nasal cavities may serve for the passage of currents of air to and from the lungs. These same passages also play an all-important part in acting as a drain for the nose and for the nasal sinuses and cells and lacrymal ducts that have their exits in the various nasal passages or meatuses.

We will now deal with the normal nasal secretion. We are told that about 350 gm. of this thin fluid, with a specific gravity of 1015, is given off in twenty-four hours. Even though the nasal sinuses have some part in the secreting process, it is at first glance difficult for us to realize how such an amount of fluid as a whole can be poured out from the mucous membranes. It is therefore desirable that we should have some definite knowledge of the source and character of this fluid. Of late years much has been written of the nasal mucous membranes. Particularly noteworthy this last year have been the investigations made by Dr. Goodale concerning "The Secretory Mechanism of the Nose." The great value of such studies lies in the fact that we are able to study and to treat in a more scientific way diseases of the upper respiratory tract, now that we more fully understand its secretory mechanism and its histological and pathological conditions. Such studies are not only interesting, but, above all, of paramount importance. It will certainly help in doing away with empirical methods of treatment, as well as many of the multitudinous varieties of agencies which the laryngologists have called to their aid in the past.

It is stated that the nasal mucous membrane is supplied with a small number of serous glands and a supply of mucous glands. But we are told that neither of these serves except in a minor degree as an apparatus for the secretion of aqueous vapor. In addition to these we have a special mechanism by which the greater part of the fluid present in the passages and on the irregular surfaces in the nasal cavities is transuded, namely, through "the canaliculi of the basement membrane and interspaces in the columnar epithelium." "The other component parts of the nasal fluid consist of a varying amount of mucus, derived from degeneration of the epithelial cells, together with migratory leucocytes and cellular detritus. Finally, under certain conditions of external cold, there is added, by condensation, a varying amount of water exhaled from the lower respiratory passages."

One of the important functions of the respiratory tract is to secrete fluid in an amount to keep it moist, soft, and pliable; a lessened amount or excess in quantity would be considered an abnormal secretion. What is more, the secreting function of the mucous membranes might seem in a way to conform to the existing atmospheric condition, to all changes of the day, however varied or however momentary. We shall refer to this point in a later statement. It is essential that as we breathe, the air should pass to the lower respiratory tract in such a way as not to have a harmful effect on the mucous membranes of these air passages.

In this connection let us make notes of a few physiological data as tersely expressed by Dr. Goodale in the paper previously referred to: "First, with regard to the function of the nose in supplying moisture to the inspired air, we know that a very large amount of aqueous vapor is being constantly exhaled under normal conditions, approximately 500 gr. in twenty-four hours. The greater portion of this comes from the nasal mucous membrane. It is found that inspired air, after leaving the nose, on its way to the lower air passages, is practically saturated, so far as its own temperature is concerned, irrespective of external atmospheric conditions, whether these be cold and dry or warm and moist. Although the nose is capable thus of nearly saturating the inspired air, it must not be forgotten that the air, after passing the nose, attains a higher temperature in its course lower down in the lungs. We find that expired air is under all circumstances practically saturated with moisture. It is thus evident that the passages below the nose contribute this difference in moisture." "The amount of moisture which air is capable of holding depends upon the temperature of the air itself, increasing in direct proportion to increase in temperature."

It is desirable to have some definite idea of a normal nose. The question is sometimes asked, "Do you ever see a healthy nasal tract?" We answer, "Yes," for now and again a patient will be referred to us for some possible nasal reflex disturbance when the nasal passages prove to be normal.

A few moments ago we reviewed the anatomy of the nose. Moreover, the passages should be approximately of equal size. We should, however, recall to mind that normally the nasal passage of the right side is a trifle larger than the passage of the left side. Further, we know that a turbinate and septum, or a turbinate and turbinate, should not be in contact at any time, as, for instance, no intermittent touching or touching even when the turbinates are acutely inflamed. The air should be permitted to pass to all points of the nasal tract, and what is more, to reach it at any time. This is necessary for proper ventilation, evaporation, drainage, vocaliza-

tion, respiration, olfaction, and that "the watery nasal secretion be properly humidified." Many of these points have been ably dwelt upon in a number of papers written by Dr. Pynchon.

It is a significant fact that these ideal conditions may not be present; we may have an obstruction, partial or complete, in the nasal passages; then what follows? "The air required by the organism passes with undue force and speed during the act of inspiration, and there eixsts abnormal variation in the nose and nasopharynx and Eustachian tubes and other parts structurally connected with the respiratory tract; and, if obstructions were sufficiently far forward, even in the lachrymal duct, this amounts to a dry-cupping of the mucosa. The membrane becomes congested, edematous, waterlogged, and ultimately hyperplastic, a condition impairing the circulation and vitality of the tissues."

From the above it may be clearly shown that it prepares the way for inflammation and infection that might extend to parts beyond, as, for instance, bringing about pharyngitis, tonsillitis, laryngitis, bronchitis, asthma, pleurisy, or pneumonia, and also preparing a field suitable for the development of tuberculosis. At this point let us mention some of the various causes of interference with normal nasal breathing: Deflected septum (cartilaginous and bony); hypertrophies of the turbinates; hypertrophies of the vomer; hyperemias of the turbinates; intermittent congestions; abnormal growths; foreign bodies; nasal polypi; distortion of vertebral column; retropharyngeal abscess; enlargement of retropharyngeal glands (acute or chronic); hereditary deficiency, causing abnormal approximation of parts; diminutive nasopharynx; hypertrophy of septal mucous membrane; arrest of development of bony frame of nose; paresis of soft palate and pharynx; synechiæ, nasal and postnasal (either fibrous, osseous, or cartilaginous); intranasal deformities from injuries; adenoids; ridges running along sectional lines; septum abnormally thick; perforation of septum with thickened edges; exostoses; ecchondroses; displacement of columnar cartilage; cysts of floor of nose; anterior soft hypertrophies of nasal septum; posterior white hypertrophies of vomer and turbinates; congenitally narrow nose; alæ nasi failing to lift on inspiration; collapse of alæ nasi against septum on inspiration; abnormal plane of the anterior openings of the nose; abnormal contour of pharyngeal vault; or we may have one or more of these conditions coexisting.

At this juncture, permit me to point out in detail certain clinical facts in everyday rhinological practice of general interest to you, dealing, moreover, with timely topics as the cause and effect of nasal obstructions.

We notice, as a clinical fact, that while essentially abnormalities of the turbinates and septum and mucous membrane are most common in adults, in children the glandular organs, as the adenoid and tonsil, are most subject to pathological changes. It is pretty clearly shown that the nasal tracts should not be over-roomy, for the air is not sufficiently warmed, moistened, and filtered, and the mucous membrane becomes dry.

We have an example of the above in cases of atrophic rhinitis. Hence has been explained the benefit derived in such cases from the injection of paraffin in the anterior part of the nose. By causing a partial obstruction, a rarefaction of air takes place and fluid is poured out over the nasal surfaces. What applies to the whole nasal tract being over-roomy, applies to one nostril being more patulous than the other. The work of respiration is unevenly distributed; that is, one side is overworked and the incoming air is not sufficiently warmed, filtered, and moistened. By far the greater room is found in the interior of the nose, and therefore nasal obstruction at either end would be very troublesome.

It is a matter of interest and importance for us to know that the lower turbinate, especially the anterior portion, is the most erectile of all the turbinates, and the posterior part is abundantly supplied with blood-vessels. From the foregoing statements, we judge that more space is needed in the anterior portion to give room for the air currents. One author states that "the anterior extremities of the inferior turbinates are the regions I like best to accuse in an asthmatic."

An important point to bear in mind in normal nasal breathing is that the "breathway" in inspiration and expiration describes very nearly a semicircular curve, including in its tract the region round and about the middle and superior turbinated bodies and corresponding meatuses as it passes to and from the attic of the nose. The inferior turbinated body is not included directly in the paths of the ingoing and outgoing currents of air except in its posterior parts, although it has much to do in contributing moisture to these same currents of air as they sweep along the "breathway."

Suppose there should be obstruction to the air current along the normal path to the attic of the nose from any of the numerous causes enumerated above, would harmful results ensue? Let us consider for a moment the posterior ethmoidal cells and the sphenoidal sinus. We have noted that these both have exits in the upper portion of the nose. It is a matter of great importance that these cells and the sinus should be ventilated and drained at all times, for, if their exits should become obstructed, a sinusitis might follow, and, as a later result, we might have an autoinfection from retained secretions. Suppose the secretion should find its way to the postnasal region, we should have the so-called "postnasal catarrh," more rightly named "a postnasal discharge."

We may have the normal air currents forced to the lower part of the nose, due to a stenosis or occlusion in the normal "breathway." Such a state of affairs might bring about a congestion of the lower turbinate, followed in due time by increase in size and at a later stage by hypertrophy.

Let us be careful not to use the term "postnasal catarrh" or "postnasal discharge" in too careless a sense. Always trace such discharges to their source. We may have affected the aural, ophthalmic, and cerebral regions, the digestive and intestinal tracts, or even a septic pleurisy or pneumonia may follow and the whole system may be included in the vicious chain. Let us now turn our attention to the middle meatus, where, as we have seen, open the frontal sinus, anterior ethmoidal cells, and antrum. The exit for these "air-cells" may be obstructed by the middle turbinate pressing upon the lower turbinated body, or by various other conditions as outlined above as the cause of nasal obstruction or nasal stenosis. Thus we have another source of a "postnasal discharge."

Similar results, as outlined above, may follow from impacted secretions in the "air-cells" or from secretions traveling to the postnasal region. Perhaps in neither of these cases will the secretions be found in the anterior part of the nose, and thus we would resort to the postnasal mirror, or by subject questioning and by other means find the presence, nature, and source of all such nasal secretions. We have seen patients who gave symptoms of their noses being blocked when they assumed the recum-

bent position. It has been called "nocturnal obstruction." It may bring about a restless condition, sometimes insomnia, and, as a later sequence, asthmatic symptoms may follow. An interesting clinical fact is noticed in adult patients. They may have good nasal breathing for all practical purposes, and yet they feel that they are not receiving their full quota of air. A sense of feeling a little smothered exists, and from nasal examination we find the lower nasal tract free, but the upper nasal region slightly obstructed. As evident a clinical fact is to be found in children. Do we not know that a small adenoid may also be in the path of the air current as it impinges upon one or more of the meatuses posteriorly? Have we not found that eczemas of the face are often due to nasal discharges? This occurs frequently in children. It is needless to add that attention directed to the eczematous condition alone would not be attended with the successful results that would accrue from meeting the abnormal nasal conditions.

Further, as a sequence of attic occlusion, we may have an interference with the sense of smell. It is noticeable in cases of ozena. A deep-seated pathological condition may be the cause, but often the other occlusion may be due to some middle turbinate hypertrophy or to some one or more of the numerous causes recently mentioned as a factor in obstructing the normal "breathway." We have mentioned insomnia as one of the results of imperfect nasal respiration; among others, we would note headache, transient or persistent, neurasthenia, melancholia, loss of memory and ambition, giddiness, aprosexia —these may be found in middle turbinate hypertrophy. It has been claimed that epileptic attacks have been sometimes relieved by attending to an obstructing lesion or stenosis in the nasal passages.

One author states that a large percentage of cases of asthma or hay fever is due to some nasal pathological condition, either a sinusitis or nasal deformity, or obstruction, while another author asserts, "I have seen no case subject to hay fever with a normal nasal tract." The singing voice may be impaired by attic occlusion as well as by obstructions in the upper pharyngeal region, and in the first condition we may have the high register impaired. It happens when patients are referred for ear troubles we examine the nose and nasopharyngeal tract, and find sometimes insufficient nasal breathing, although the patients claim that they never had any difficulty in this direction. We, however, direct our attention to the treatment of the nose and the patients soon acknowledge that they must have had in the past some marked nasal obstruction. Let us refer once more to the middle turbinate. We may find it pressing upon the septum, bringing about a local congestion, or erythema, or acne of the nose and face, and even a swollen upper lip; or, from excessive swelling anteriorly, alone or in conjunction with lower turbinate enlargement, producing eye troubles. The lachrymal duct may be occluded or obstructed, or inflammation may extend up the duct to the eye. We may have reflex symptoms brought about in the same way as above, for example as sneezing, coughing, also headache and various so-called neuralgias, while chorea, epilepsy, giddiness, dizziness, and vertigo may also be due to some pressure within the nose.

A prominent laryngologist claims that three-quarters of pulmonary patients have some nasal stenosis, while another laryngologist states that 75 per cent. of laryngeal growths are due to some form of nasal obstruction. As regards a laryngitis due to digestive causes or climatic surroundings, ocular inspection alone might make it difficult for one to decide at once between a laryngitis in its early stage brought about by above causes or one growing out of a tuberculous condition.

We have dwelt at length upon the middle turbinate; we may now pass to a consideration of the lower turbinate. We have previously noted that the lower turbinate, and especially its anterior portion, is the most erectile of all the turbinates, while the posterior part is richly supplied with blood-vessels. We may have a temporary enlargement from inhaling overheated air or breathing in very cold air. An example of the latter condition is seen in numberless cases on cold wintry mornings in our climate. Likewise irritating vapors will bring about a similar condition of this turbinated tissue. Another kind of aftereffect is produced by cold air or cold substances coming in contact with the surface of the body. Normal physiological causes may be productive of swelling of the turbinates. It has been frequently noted that "sudden swelling and sudden collapse of the bodies have been observed to occur under the influence of mental impressions, fright, etc." We again lay special emphasis upon the importance of attending to imperfect nasal respiration.

Reference may be made here to disorders of the aural tract. The influence of impaired nasal breathing, due to obstructive lesions, is the most prolific cause of aural troubles, for the reason that marked variations of air tension thus exist in the nasal and nasopharyngeal tract. "In the very act of swallowing under such conditions the Eustachian tube and middle ear may be robbed of an undue amount of air, that is, a suction process is going on, and transitory or permanent swelling will sooner or later follow."

Ear statistics tell us that 60 per cent. of all ear diseases are due to a faulty condition in the nose or throat. Again, the importance of caring for the nasal and nasopharyngeal tract, having catarrhal troubles attended to, enlarged tonsils and adenoids removed.

Is there a village, town, or city in this country that does not contain a large percentage of persons affected with impaired hearing or permanent deafness, or some serious aural disease? Suffice it to say that only a small proportion have ever sought advice or submitted themselves to systematic treatment. What is more, they seem absolutely indifferent about their condition, and as to a "running ear," they consider it of no importance, or it may be looked upon as "a constitutional error that ought not to be rashly checked."

May we seek to avoid the recurrent and persistent injuries to hearing, and, above all, live our allotted lives and partake of our full share of the beautiful notes that have been so lavishly showered upon us!

The close and most direct connection between the eye and nose is by means of the lachrymal duct that enters the nasal cavity in the lower meatus. This duct is lined with mucous membrane that extends above, where it joins the conjunctiva, and continues below to the nasal mucous membrane. Further, there exists a reflex condition that is normal between the eye and nose. How often we have noticed lacrymation when the probe comes in contact with the nasal mucosa, or we may have an exaggerated condition amounting to a diffuse hyperemia of the conjunctiva when the actual or chemical cautery is used.

There is a strong clinical evidence of an association in children between adenoids and granular lids. It will also be seen that there is even a closer relation between trachoma and adenoids. Clinically, the best, speediest, and most lasting results in such cases

have been due to attention paid to nasal obstruction and the removal of adenoid growths. Should the ocular disturbance alone receive our attention, there will be, in all probability, one or more recurrences of eye trouble and a tedious process of ocular treatment. The foregoing irresistibly leads to the conclusion that a causal connection of some kind exists between the two, and a lymphoid diathesis is found in such cases. Time will not permit me to go into an analysis of cases that might be enumerated almost indefinitely.

In looking over the literature of the subject in the standard text-books of the day upon the eye and nose, it must be universally admitted that they are inadequate in showing the relations that one organ may bear to another in producing various conditions or reflex disturbances.

Among the ocular disturbances arising from nasal affections, we may enumerate the following: Ephiphora; edema of the lids; dacryocystitis; blepharospasm; strabismus; myopia; asthenopia; lacrymation; photophobia; scintillating scotoma; narrowing of visual fields; exophthalmos; diplopia, lacrymal abscess; persistent pain in eyeball; ophthalmia; corneal ulcer; catarrhal conjunctivitis; phlyctenular conjunctivitis; eczematous keratitis; diseases of the optic nerve (neuritis or atrophy); retrobulbar neuritis.

What relation do the eye and lacrymal duct bear to the nasal passages and their accessory cavities and cells? Anatomically the maxillary antrum forms the floor of the orbit, the frontal sinus partly aids in forming the roof, and the ethmoidal cells are closely associated with the lacrymal duct, and have been known to surround the duct. The sphenoidal cavity—or the sphenoidal cavity plus the posterior ethmoidal cells—is in relation with the optic nerve and the ophthalmic artery. We are entering here upon one of the most interesting and attractive of subjects connected with the eye and nose.

The field of research along these lines will develop new problems and new conditions laden with great possibilities and promising rich findings, and there is probably no field wherein the reward will be greater.

The disturbances of vision and development of blindness produced by diseases of the accessory nasal cavities and cells are of grave import. The ophthalmologist and the rhinologist will be more closely associated in the future in their united endeavors to solve these weighty problems.

The statement is heard frequently that "it is nothing but a cold," or "such a child or adult is subject to colds," but can we afford to ignore or consider of no moment "a common cold in the head?" There is a mischievous mistaken idea that it is of no consequence, but it is a grave fault to assume such an attitude. As a matter of fact, as we well know, it may be of short duration, brought about by the merest climatic exposure, or it may be due to some infectious disease, or syphilis or a gouty diathesis may be responsible for the disturbance. What may be the outcome of these neglected, ignored, repeated or continual colds? Innumerable instances might be cited where functional or organic changes of the eye, and more commonly the ear, have been associated with such nasal disturbances. This statement likewise is as applicable when applied to organs far distant from the original seat of trouble. In the management of such cases, as we care for the local condition, let us not be unmindful of more general treatment dealing with hygienic environment and climatic conditions, as well as the employment of medicinal measures; and, last but not least, let us have a proper regard for the "habits of life." The idea that pervades this paper emphasizes the fact that all these questions are of fundamental importance and merit the closest attention, and let us not forget that "each organ is interdependent and correlated with all the other organs of the body, and, moreover, each part has its special function and must be maintained in definite relations to all of the other parts of the system."

An important inference from what has gone before prepares us to make the assertion that no examination of a child should be considered complete until the eye, ear, nose, and throat have been thoroughly examined.

The golden rule in dealing with cases of nasal obstruction is that each case is to be studied by itself and not accepted as belonging to a great class to be treated according to a prescribed rule. And let us give a little credit to Nature, who often cures many diseases. The day is not far distant when the rhinologist will hold as close a relation to the whole system as any other practiser of general medicine.

The foregoing facts irresistibly lead to the conclusion that a clinical connection exists between the oropharyngeal, nasopharyngeal, and aural tracts, as well as between the nasopharyngeal and ophthalmic tracts.

Thus, in the paper of this evening, I have touched only upon generalities, and may they prove to be sufficiently suggestive to further the studies of the general practiser! With these plain truths, founded on a scientific basis, I have attempted to point out the importance of being ever on the alert in detecting abnormal conditions of the respiratory, aural, and ophthalmic tracts, and submitting the same to judicious treatment.

416 Marlborough Street.

A NEW AXIS-TRACTION APPARATUS.*

By ARTHUR C. JACOBSON, M.D.,

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This device represents an attempt to place the forceps operation on a more scientific plane in that it enables us to employ measured, steady, and precise axis-traction, accomplishing delivery in appropriate cases with a minimum of force and with no expenditure of physical energy on the part of the accoucheur. The power applied is multiplied by a simple mechanical device twenty-five times and hence the instrument is a labor saver, something which we would often welcome in forceps work. At the same time this implies no damage factor, for one cannot pull more with it than eighty-five pounds, a safe and conservative limit. It is true that keeping up the tractions too long and not properly intermitting them, as well as failure to direct properly the line of traction, might and probably would result in damage, but these statements apply equally to manual traction as well. They are not intrinsic faults of mechanical traction.

I shall endeavor to explain briefly and clearly the mechanism and *modus operandi* of the instrument, besides stating some general conclusions. In regard to the last, I may as well say that the whole matter is in an experimental stage as yet and that the conclusions stated represent merely my personal attitude, which has thus far found justification only in the experience afforded by three cases, no one else having employed the instrument.

* Read, by invitation, before the Obstetric and Gynecologic Section of the Eastern Medical Society of the City of New York, May 25, 1906.

First as to the mechanism. (See Fig. 1.) The apparatus is composed of a clamp, which attaches to the edge of a table; an outer case, enclosing a worm and gear (which multiply the power); two rods, the lower one telescoping, joined to the clamp by universal joints; a crank-handle for operating the power-producing mechanism; a hand-wheel at the outer end of the telescoping rod for controlling the transit of the outer end of the apparatus through the orbit which it must describe, when in operation, around the universal joints as pivotal points; a steel tape, which may be replaced by another if kinked without taking things apart, and which winds up on a drum upon which it is held and around which it is guided by a metal case containing an aperture into which the tape passes and which does not itself revolve; a small axle upon which the gear revolves, and a dynamometer (Fig. 2), one of the needles of which is pushed along an as index by the needle proper, remaining at the maximum point reached during the operation for later reference. This dynamometer can be read down to one pound and the needle is absolutely true to scale, whether

Revolution of the hand-wheel to the left raises, to the right lowers, the tractor, the telescoping of the lower rod permitting of this. During tractions the instrument will not rise unless this wheel is turned to the left, which is done whenever the forceps advances and the traction rods cease to remain parallel with the forceps handles.

The steel tape twists upon itself, which, with the lateral freedom of motion through the universal joints, permits of adaptation of the instrument to a reasonable degree of rotation on the part of the forceps.

It is not necessary nor desirable to effect an advance of the head with the first two or three tractions. Run up a moderate amount of traction slowly for a number of times. Tractions should last about one minute only when at their optimum, and one should take at least twenty minutes to bring the head down to the pelvic floor. The occiput must be anterior, the head well flexed, the bladder and rectum empty, the cervix fully dilated, the membranes ruptured, the forceps operation clearly indicated, the diagnosis of position and posture positive, and the

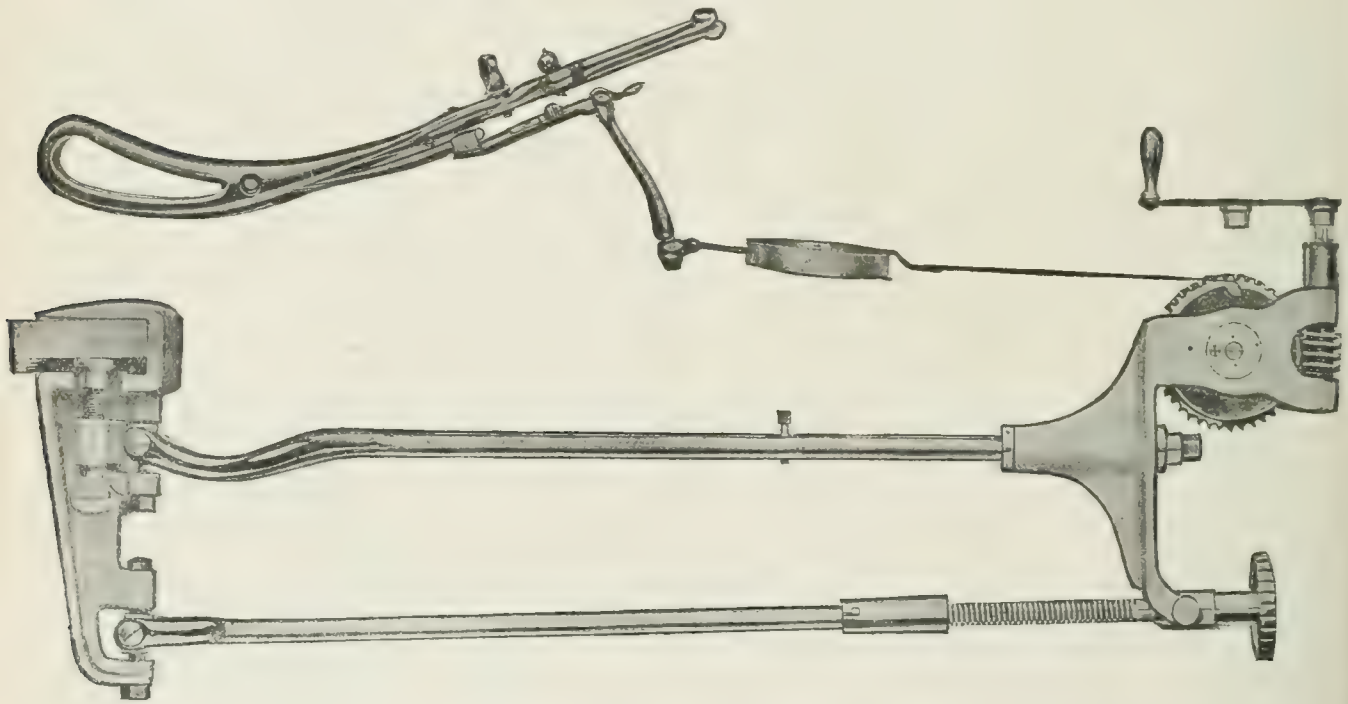

Fig. 1.—Jacobson's axis-tractor

traveling up or down. The apparatus is constructed chiefly of an aluminum composition, weighs about five pounds, and may be taken apart for carrying about.

The Tarnier instrument being applied in a high or median case in which some difficulty in delivery is anticipated, attach the dynamometer to the traction rods of the forceps, connect the tape with the dynamometer, as seen in the illustration, lower or raise the apparatus to the proper point by means of the hand-wheel, *i.e.* until the traction rods are parallel with the forceps handles, align the tractor in its longitudinal axis with the forceps handles; have the patient held in the usual position by two assistants, the buttocks projecting somewhat over the edge of the table with the median line of the body, the vulva and the clamp kept in the same plane, and then, after taking up any "slack" in the tape, begin to apply the traction by means of the crank-handle, the long axis of the instrument being kept always in the same plane as the forceps handles, according as the latter deviate from the median line.

diameters, such as are considered not prohibitive, of axis traction.

In actual practice sterilize the crank handle by boiling, cover the hand-wheel with sterilized gauze, and pin a sterilized towel over the rods and clamp.

The instrument offers certain advantages, some of which are as follows:

1. Accurate measurement of traction.
2. Perfectly steady "pull."
3. Optimum traction at any given stage of delivery capable of being uniformly sustained for a reasonable time; no variation. If it is fifty pounds it remains fifty pounds so long as one wishes.
4. Traction being steady and precise, a minimum degree suffices to accomplish delivery, and thus the damage factor is reduced; hence the method makes for greater safety and conservatism in forceps work, for the degree of compression exerted on the fetal head, we must remember, has been estimated to be about one-half the traction force in pounds, and excessive, jerky, and uneven tractions are certainly causative of maternal and fetal damage; with the

axis tractor not a pound more of power than is actually needed is employed, and all the power utilized is applied with steadiness and precision.

6. Physical exertion on the part of the obstetrician practically obviated; all forceps deliveries rendered easy, and the terrors of the high-forceps operation greatly mitigated.

7. Manipulation of instrument easy; mechanism simple.

8. Slipping of forceps fraught with no danger, as in the case of manual traction, since the power-producing mechanism is at once automatically compromised, so to speak, and traction ceases.

9. Exerts no directive influence of itself, taking its cue entirely from the forceps handles as indicators of the proper line of traction.

10. Owing to control of the rate of advance of the forceps, *i.e.* if the patient is well anesthetized, the danger of bad perineal tears is considerably lessened in cases in which strong manual traction is so apt to eventuate in unexpectedly sudden advance, with consequent rupture of the perineum.

11. In selected cases in which the pelvis is contracted, and in which the forceps operation is elected as the one of choice or necessity, its use should improve the prognosis. Failure should be relatively

Fig. 2.—Dynamometer used with axis-tractor.

rare in the case of the axis tractor in comparison with manual traction under identical conditions.

12. Owing to the gentle, steady, and precise application of the power, the latter, so to speak, being "harnessed," shock should be much lessened in what would ordinarily be severe cases, and, should the forceps fail, one's patient would be in better shape for other procedures. We are, perhaps, all familiar with the disastrous results sometimes consequent upon difficult forceps operations conducted manually.

13. None of the well-known advantages of the axis-traction forceps is abrogated, for the method really represents a logical extension of the principle of axis traction.

I have been asked, What about the patient coming out of the anesthetic suddenly and drawing up on the table, or perhaps rolling over? I can only say that if she be properly anesthetized and properly held this need not happen. As a matter of fact, probably no harm would be done.

You may discern certain disadvantges in the apparatus; some of you may regard it as an obstetric monstrosity. These attitudes may be more or less well founded, though experience will count for more than merely academic opinion as a basis for them. Let us not forget that the Paris Obstetrical Society condemned Tarnier's forceps, and that in America its use was long denounced as gross malpractice. The ordinary, primitive forceps was absolutely condemned in many quarters during the eighteenth century, and I suppose that no instrument has left such a bloody trail of damage in its wake nor a more beneficent and life-saving record behind it either, which seems a paradox, but merely expresses the difference between the human fallibility, ignorance, and prejudice that sometimes sought to guide it, and, on the other hand, the acquired skill, enlightenment, and wise comprehension of its principles that were also displayed. So we must be cautious even in passing upon practical results.

An eminent obstetrician has said: "If experts are to use the axis tractor they ought to prefer accuracy, even though some complexity be necessary to secure it."

In the *American Journal of Obstetrics* for March, 1905, and March, 1906, will be found comprehensive articles by the speaker, fully covering this subject and reporting the results of its use in two cases, one, delivered in a tenement house on East Forty-seventh street, Manhattan, and presenting extraordinary difficulties, the other, delivered at St. Mary's Maternity in Brooklyn. Certain suggestions with respect to interesting research work which the instrument renders possible will also be found in these papers.

I shall here briefly report one additional private case:

Mrs. D., aged twenty-six, native of Scotland, was delivered by forceps of her first child on August 14, 1903, by a Brooklyn physician. Extensive lacerations of perineum, vagina, and cervix. Child lost. Second delivery by the speaker August 16, 1904. Difficult high forceps, position r. o. a. Child saved. Third delivery by axis tractor May 21, 1906, at 4 P. M. No lacerations of mother, and no traumatism to cranial vault of child. Maximum traction, fifty-five pounds. Position right occipito-posterior, which, failing to rotate after sixteen hours' good labor, was converted by internal manual rotation to r. o. a. Head at brim at beginning of forceps delivery. Ether anesthesia. Time of delivery about thirty-five minutes. Assisted by Dr. A. L. Reeve and two intelligent women. Pulse postpartum, 80.

Intercristal diameter, 11 inches; anterior interspinous diameter, 8; posterior interspinous diameter, 3¾; baudelocque, 6½. External oblique: R, 8¼; L, 8¼; total external circumference of pelvis, 31; conjugata diagonalis, 4½; conjugata vera, 3¾; sacropubic, 4½; pubococcygeal, 4; transverse, 4.

Diameters of fetal head: Biparietal, 3⅝; frontomental, 3½; occipitofrontal, 4⅝; suboccipitobregmatic, 3⅜; bitemporal, 3¼; bimastoid, 2¾; circumference, 14; bisacromial, 4¾; bitrochanteric, 3½.

Length of child, 20 inches; weight of child, 10 pounds. Postpartum examination on the tenth day found the uterus anteverted, involution satisfactory, old left-lateral tear of cervix.

It is interesting to note that Tarnier predicted that some sort of perfected mechanical traction would, at a future time, prove of great value in a clinical way. This belief of the master was shared by Guéniot and Pajot. It was declared by them that manual traction was bound to vary according to the muscular force of different individuals and their ability to apply it, and in mechanical traction, could it be properly applied, they saw great advantages. The feeling of these men on this subject cannot be

lightly dismissed on the score that they represent the obstetric thought of a past generation. We have not found them false prophets in other things.

Joulin showed, experimentally, that manual tractions with the forceps, instead of being regular and continuous, or uniformly sustained at their maximum, are abrupt and broken at short intervals, and never uniformly sustained, and certainly this fact has been confirmed by the personal experience and observation of each one of us in his every-day work many times over.

Delivery *per vias naturales,* whenever possible, should be our aim and object, provided that this can be accomplished with reasonable safety to the maternal and fetal structures involved and without material shock. This is nature's intention, and we know that about 70 per cent. of the cases in which the pelvis is contracted undergo spontaneous delivery (Williams). Just as the common law is forceful and authoritative enough for application to the conventional affairs of men, so is the forceps operation usually sufficient unto the demands of conventional obstetric practice. Let us, then, carry this main reliance of ours to its highest development and broadest application.

Just now, when there is such a strong feeling against the high forceps, and when we are running after strange gods as a consequence, it behooves the profession to examine carefully any project which promises a higher evolution in forceps work, which, after all, will always and necessarily constitute the largest phase of operative obstetrics.

NOTE.—Since the above paper was read the writer has delivered a fourth case at St. Mary's Maternity, in which the circumstances were, briefly, as follows:

M. W., apparently about forty years of age (date of birth unknown), primipara, nativity Ireland. Slight contraction in the obstetric conjugate. Examination during labor at full term on June 14 disclosed a face presentation, the position being left mentoposterior. Under ether anesthesia and with good dilatation this was converted into a left occipitoanterior by Dr. P. J. York, the visiting obstetrician. The Tarnier forceps was then applied and the axis tractor attached. Delivery was safely accomplished in about thirty-five minutes with a maximum traction of sixty-seven pounds. Perineum slightly torn. At beginning of delivery the head was slightly above brim. The forceps was reapplied twice during delivery. At this writing, June 15, mother and child are doing well. There was no postpartum shock.

The writer's acknowledgments are due to Drs. York and O'Connell, of the visiting staff, and to Dr. McCullum, of the house staff.

115 JOHNSON STREET.

THE RESULTS FROM THE BLOODLESS REDUCTION OF CONGENITAL HIP DISLOCATION.

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SINCE the fall of 1902, when "Lorenz came to America," the pendulum of public opinion in America concerning his operation has been swinging to and fro, but is at last coming to rest in the position of "success." The personal experience of the writer extends to fifteen individual hips operated upon by the bloodless method, which are briefly as follows:

1. Girl, age eleven; bilateral reduction successful. Final results, right hip redislocated, left hip anterior transposition to anterior superior spine; high shoe, walks somewhat better than before; result, failure.

2. Girl, four; reduction successful. Final result, perfect anatomical and functional replacement, impossible to tell on superficial examination which hip has been operated upon.

3. Boy, three; bilateral; reduction successful. Final result, right hip perfect anatomical replacement, left hip transposited to upper rim of acetabulum; perfect function.

4. Boy, six and one-half; bilateral; reduction successful. Final result, perfect anatomical and functional replacement of both hips.

5. Boy, nine; left. Failed to reduce.

6. Boy, twelve; left; reduction successful. Final result, anterior transposition, with excellent function.

7. Girl, twelve; left. Failed to reduce.

8. Girl, eleven; right. Failed to reduce.

9. Girl, nine; left. Reduction successful. Final result, anterior transposition, with some external rotation, no aftertreatment, good function.

10. Girl, eight; right. Reduction successful. Final result, anatomical reposition.

11. Girl, seven and one-half; left. Reduction successful. Final result, excellent anatomical and functional result.

12. Girl, four; left. Reduction successful; still under treatment.

In all twelve patients, presenting fifteen hips for reduction, of which I failed to reduce three. These failures were all in old and well-developed cases; all refused a second trial or a trial of Schlesinger's method. There was one total failure, a redislocation due to poor judgment in operating upon an unsuitable case; there were six anatomical cures, one ideal functional result, three transpositions with good function; one patient is still under treatment. The patients were: Male, 4; female, 8. The dislocations were: Unilateral, 9; right, 2; left, 7; bilateral, 3 patients, 6 hips. Final results: hips "suitable for statistics," 11; anatomical cures, 6; ideal functional results, 1; good functional results, 3; failure, 1.

The following is an explanation of the terms used to designate results:

Lorenz first attempted to classify his results in the terms of the anatomical conditions resulting from the course of treatment. Many other writers, including Ridlon, have done the same. It is well known that successful function does not entirely depend upon a successful anatomical outcome, and that many of the so-called transpositions may yield ideal functional results. One writer, Ghillini, denying *in toto* the possibility of ever getting a real anatomical *retitutio ad integrum*, classifies his results entirely as to the functional outcome, and others have followed his example. Any classification of the results of the Lorenz operation must, to be at all accurate, take cognizance of both of these interpretations; it is entirely incorrect to recognize only the anatomical successes as good results and to designate all the others as failures.

The writer's classification of the final results:

Repositiones completæ, ideal results: Anatomical restitutions, perfect functional and cosmetic results.

Very good, good, and fair functional results: Good functional results from anterior transpositions and lateral appositions of all kinds.

Bad results: Bad functional results from anterior transpositions, etc. Bad anterior redislocations.

Redislocations, posterior: Relapses.

Unsuccessful operations: Inability to reduce the

dislocation or to hold it reduced in primary position.

Untoward results: Fracture, paralysis, gangrene, rupture of perineum, etc.

Ideal Results.—By anatomical restitution we mean cases where the limbs are of equal length, the lordosis and waddling gait gone, the joint freely movable, the head of the femur entirely within the acetabulum both to palpation and to the *x*-ray, and where clinically such a hip does not differ at all from a normal joint; or where autopsy findings have revealed femur and acetabulum to stand in normal relation to each other and held in place by apparently normal soft parts. Perfect functional and cosmetic result means practically the same thing, only that clinical examination or the *x*-ray reveals some gross anatomical abnormality, due most likely to the fundamental nature of the primary dislocating forces. The percentage of such cases must, of course, vary with the nature of the cases treated and interpretation of the individual operator. Sherman and Ridlon in America have obtained only 10 per cent. of such results; Burgard in England only 3 per cent.; Lorenz, Lexer, Lange, Nove Jusserand, about 50 per cent.; E. Müller, 70 per cent. of unilateral cases; Hoffa, 75 per cent. of unilateral cases; Narath, 85 per cent. of bilateral cases; Heunser, 80 per cent. of all; Bradford, Lovett *et alli*, 80 per cent. in 1903, while Clark of England claims 100 per cent. in his second series. My own results, seven ideal restitutions in eleven hips, are possibly up to the average, but the advanced age of most of my patients precluded the possibility of a higher percentage of ideal results.

Very good and good results.—A large part of all cured cases fall under this heading. Lorenz, Ridlon, and others speak of anterior transpositions, subspinal positions, and lateral appositions. A description of the exact anatomical conditions referred to by these terms cannot be given in a short paper; suffice it that either from the nature of the parts, the incompleteness of the stretching of the anterior capsule, or the insufficient abduction and external rotation in the first cast, or subsequent instability of the head in the acetabulum, the head of the femur comes to lodge securely against the pelvis, either just anterior to the acetabulum, on its upper rim, or just beneath the anterior superior spine. In these cases the function of the hip joint, both as to stability, ability to walk long distances, and freedom from the disturbing Trendelenburg limp, may be all that can be desired. There remains, however, some external rotation of the limb, stiffness in the gait, and in some cases slight shortening. Undisturbed, a new joint—a nearthrosis—will develop, which insures permanent stability, as shown in one of E. Müller's cases. Lorenz and F. Mueller are not satisfied with these results, but attempt by a subsequent "depression of the head" to force it back into the acetabulum. Results designated as good or fair are of the same character, but on account of contractures or excessive external rotation the function is not as good.

Bad results are seen when the anterior redislocation is excessive, as upon the ramus of the pubes or into the obdurator foramen, etc., or when any of the previously mentioned positions have given bad functional results. These cases should not be allowed to remain as bad cases and an ideal statistic ought not to contain many of them. They should be subjected to repeated secondary operations, and finally —as to be advised for the next group—the bloody operation.

Posterior redislocation and relapses cannot be avoided. Many may be due to faulty technique, but most are due to some natural anatomical obstruction, shallow acetabulum, large head, excessive ligamentum teres, etc. These cases should be repeatedly subjected to the bloodless reduction, and where this finally fails the bloody operation should be done.

Unsuccessful operations are also due to two causes, the most important being the advanced age or excessive muscular development of the patient; this is to be avoided by a more careful selection of our patients; four to six years of age for bilateral cases and seven to ten for unilateral cases should be the upper age limits. Schlesinger's method has, however, advanced the age for successful operations in unilateral cases to about thirteen. Where the malformation of the parts is the chief obstruction to successful reduction, as, for instance, an hour-glass constriction of the capsule, arthrotomy, as advocated by Bradford, allows of perfect exploration and removal of this obstruction. The constant tendency for a reduced joint to redislocate may be overcome by the use of Werndorff's axillary abduction for a number of weeks, followed by the ordinary primary position.

Untoward results, such as paralysis, fractures, gangrene, etc., cannot always be avoided, but are vastly less common than they were before the year 1900, when the use of traction instruments, machines, screws, pulleys, etc., was entirely given up by the best operators. Most untoward results have followed unjustifiable attempts at forcing a reduction in an unsuitable case by the use of excessive force. Since operators have learned that there are many cases which it were better to have left alone and now use only manual force in attempting a reduction, these untoward results are much less common.

Statistics.—In collecting the statistics of the past five years the writer was struck by glaring inaccuracies and discrepancies of all descriptions, and, while it may not be the place of a reviewer to cull the figures, it was absolutely necessary to do so before most of them could be used. In compiling the appended list of 2,600 hips successfully operated upon, I have closely followed the method advocated by Braun, who, in reporting about 180 hips operated on by Prof. Lexer in v. Bergman's clinic, culls out all cases upon whom the operation itself, for various reasons, did not succeed, all cases where there were technical faults, where the aftertreatment was not properly carried out, and all cases where the final results were unknown, leaving him 117 hips "available for statistics." Bilateral cases have been counted as two individual hips, after the practice of Ghillini, Lorenz, and Hoffa. Many instances were presented where the figures did not tally and where the percentages, after given to two decimal places, figured out a fraction of a patient. Figures such as Truel's would often be met, reporting, for instance, fifty cases, "more than half of which were eminently successful." Anterior transpositions are mentioned as in Ridlon's report, without any accurate description of the resulting function. Failures and redislocations were often not enumerated and could only be arrived at by computation. The greatest inaccuracy was, however, the tendency of many writers to figure out their percentages on the basis of all cases seen or operated upon, and not upon the basis of "hips available for statistics." An example of this would be the report of Bradford, Lovett, and others, at the Boston Children's Hospital, for the years 1896-1902. Twenty cases: 1 anatomically successful, 7 unsuccessful, 12 unknown results. In using these figures the writer believes himself justified in so editing the report as to read: 1896-1902: 8 cases

suitable for statistics, 1 successful, 7 unsuccessful. After all, the old saying concerning the four different kinds of lies, "The first is plain lies, the second damned lies, and the other two are statistics," is still quite true.

Authority or Operator	Joints Successfully Operated Upon.	Ideal Results. Anatomical Restitution.	Good R'lts. Perfect Functional Results.	Good Functional Transposition.	Fair Function.	Bad Results. Relapses and Failure to Obtain Good Function	Secondary Operations. Joints.	Good.	Bad.
Bade	24	?	?	24		..	..	..	..
Braun-Lexer	117	57	15	?	?	12	..	..	..
Bradford, Lovett *et alii*, 1896 to 1902	8	1	..	..	..	7	..	..	..
Idem 1902	18	8	..	7	..	3	..	..	..
Idem 1903	28	22	..	..	6	..	..	..	..
Burgard	30	1	..	29?	..	?	..	..	
Chrysospathis	11	?	11	..	.	..	..	..	.
Clark	12	..	9	1	.	2	..	.	.
	13	13	.	..	..	.	..	..	..
Codivilla	35	?	?	19	..	16	.	..	..
Davis	5	3	2	.	..	..	..	..	.
Drehman	103	55	14	30	.	2	.	..	.
Ghillini	308	?	40	259	.	.	..	..	..
Gourdon	5	1	4	..	.	..	..	..	.
Heusner	50	42	..	1	..	7	..	..	..
Hoffa	380	95	?	174	..	101	?	..	..
Horvath	44	14	..	21	.	9	.	.	.
Joachimsthal	23	?	17	..	..	6	6	4	2
Kirmisson	50	3 (?)	.	42	..	14	..	..	
Lange	20	?	?	20?	..	?	..	..	..
Lange B	50	21	..	24	.	5	.	..	.
Lorenz	680	401	?	251	.	28	?	..	.
Menciere	8	8	..	.	.	..	..	..	..
Muller	82	40	..	?	.	30–25?			.
Mueller-Lorenz	34	21	.	12	.	1		.	.
Napier	7	3	.	.	2	..	.	..	..
Narath	132?	81	16?	22 ?	3 ?	2	.	..	..
Nove Josserand	115	57		34		24	.	..	..
Same	1	Aut'p'y 1	.	..	..	..	.	..	..
Ochsner	2	Aut'p'y 2	.	..	..	..	.	..	..
Packard	6	3	.	3		..	.		.
Reiner; Schlesinger's Mod	14	.	.	14					.
Redard	57	19	2	35		1		..	..
Ridlon	..	..	.	..		.	..	..	..
Sherman	13	2	.	1	.	10	.	.	..
Sloman	9	?	9	?	.	.	.	..	..
Stern	11	5	1	4	..	1			.
Strube	9	?	9	?		..			
Truel	50	?	25	?		25	..		.
Thienhaus	2	.	2	?		..			
Veau & Cathala	1	Aut'p'y 1	.	.		..	.	.	.
Wernlorff	4	2	2	.		..	.	.	..
Willis	7	4	.	2	1	..	.	..	.

Conclusions.—The number of hips reported as successfully operated upon since 1900, 2,593. Ideal results, restitutiones completæ, 48.98 per cent.; anatomical restitutions, 41.76 per cent., 1,084; excellent functional results, 7.22 per cent., 187. Good function from transpositions, 39.98 per cent., 1,036. Failure, redislocation, bad function, 12.10 per cent., 314. Discrepancy between failures and good results (about 1 per cent.) is due to inaccuracy of many of the reports.

These figures, gathered from operators scattered all over the world from Athens to San Francisco, are about the same as first given out by Lorenz as his own experience. They come from opponents as well as from adherents to the bloodless method, and consequently fall—as Davis said of his figures—far below the actual experience of individual operators.

Looking at the results from a "functional" standpoint alone and letting them speak either for good or bad results, we have 2,593 cases, with 2,307, or 88.96 per cent., of good resulting function.

Of the individual operators obtaining better functional results are: Ghillini, 308 cases, with 100 per cent. of good results; Narath, 132 cases, 98 per cent. good results; Heusner, 50 cases, 84 per cent. good results; Bradford *et al* in 1903, 28 cases, 100 per cent. good results; Drehman, 95 cases, 97 per cent. good results; B. Lange, 50 cases, 90 per cent. good results; Clark, 25 cases, 92 per cent. good results.

These latter figures are the results that all operators are striving to obtain and which they will and must attain through careful and painstaking work, combined with increasing experience and advanced methods.

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AN UNRECOGNIZED ETIOLOGICAL FACTOR IN THE SUMMER DIARRHEAS OF INFANTS.

By JAMES LAWSON WALSH, M.D.,

CASEVILLE, MICH.

From May to October is the dreaded season for bottle-fed babies, depending on cow's milk as their main food supply, on account of the prevalence of diarrheas during these months. Many causes have been ascribed for this condition, but the one most universally held at the present time is that it is of an infectious nature.

Living in the country and observing the milch cows, their feed and their condition during the months on pasture, I am convinced that nine-tenths of the diarrheas of the cow's milk-fed babies are due to a laxative property, contained in the grasses, grains, and weeds on which the cows feed in the pasture during the summer season, and which is secreted in their milk.

The mortality curve keeps pace with the growing grasses, beginning in May and gradually increasing until it reaches its maximum when these grasses are matured in July; then the mortality curve gradually declines with drying and dying of the grasses during August, September, and October. During these later months the pasture is not so plentiful as in the two months previous. The stock are turned in on the stubble of the wheat, oats, barley, cornstalks, etc., also the recently threshed straw stacks, which contain an abundance of new grain which is likewise, in the new state, very cathartic.

The babies most affected with the summer complaint are in the first two years of life and their main food supply is cow's milk. They get the full physiological and often the toxic effect of the aperient properties in the milk from these grass-fed cows.

The lesion is an inflammation of the intestinal mucosa, set up by these poisons, first manifested by indigestion, and increasing either gradually or very rapidly to the severest form of diarrhea and systemic intoxication. The natural functions of digestion and assimilation are at first much impaired, and as the condition continues they are lost altogether until the diarrhea or source of irritation quits or death intervenes.

The consequence of this is that the milk containing these poisons goes through the child, the coagula acting as foreign bodies passing through the whole length of the intestinal tract in this form instead of being digested, irritating as it goes, and is found in the napkin as curds.

The class of patients most susceptible are recently weaned babies, those suffering from marasmus, malnutrition, syphilis, rickets, tuberculosis, dentition, and any predisposing factors to weaken the infant. The high atmospheric temperature will add to the constitutional depression already caused by the laxative properties contained in the milk from

grass-fed milch cows. Neither the barometric pressure nor humidity appears to have any influence.

Another evidence that this is not in nine-tenths of the cases a bacterial disease is that of the etiological factors mentioned in the text none stand good for the whole year, even in the diseases named above. From October to May the diarrheal tendency is either absent altogether or noted only in scattering cases, not in epidemic form such as is found year after year over the whole of the United States and elsewhere from May to October.

Another proof that summer complaint is not due, in nine-tenths of the cases, to bacteria in the milk, is that by sterilization the poison is not destroyed as we would expect it to be if it were due to the streptococcus, staphylococcus and other forms of bacteria, which are readily destroyed by sterilization. It is not a bacterial but a chemical poison, and is not affected by heat, unless perhaps its virulence is thereby increased.

The fact that it happens year after year, beginning with the time the cows are turned out on pasture in April and May (the southern countries being earlier than the northern) and ceasing when the cattle are again stall fed, on dry feed, beginning in October and continuing until May, goes strongly to show that it is due to some poison or aperient contained in the pasture and is eliminated in their milk.

To substantiate what I have said above, let us observe the cows and see how they are fed and what condition they are in when on pasture and when stall fed. In Michigan the grasses are just coming in May, the stock are turned on the new pasture and kept out night and day until September or October. They are ravenous for the new grass (their natural food) and eat greedily of the rich, juicy grasses and clover. The first thing noticed is that they are "scouring," the stools running from them like water, and this condition of their stools lasts until they are taken off the pasture in the fall, yet they get fat. They are again dry fed all winter, when the looseness stops, and they get poor on this feed. The stools are grass green in color and watery, the same color and constituency being found in the summer diarrheas of babies. The color is derived from the coloring matter in the grasses, chlorophyl, and not, as supposed, from the bile.

I inquired from some of my farmer patients whether sucking calves and colts were ever subject to diarrheas while the mothers are on pasture, and was informed that it was a very frequent occurrence and in some it lasted all summer, feces of a grass green color running away from them like water. It frequently happens in those only a few weeks old, and they eat no grass at this early age, depending entirely on the nurse for their maintenance, while with the cows and mares stall fed the calves and colts are more inclined to be constipated and are frequently given castor oil. This latter condition disappears in a few days on pasture.

All this goes to show that there is some cathartic properties in the grasses, which is lost when the grass is dried in the form of hay. These aperient properties of the grasses are conveyed through the milk to the infants, and is in such quantities that there is either an accumulation or an overdose for its years and they are not long in showing the toxic symptoms. Late in the summer a favorite place to pasture the stock is in the orchard, where they can get the wind-falls, which only adds fuel to the fire. I know of a case in which a child had a violent diarrhea, its milk being obtained from a cow that had eaten a great number of apples the day before. In some parts of the country new corn, corn stalks, and green alfalfa will cause ruminants to bloat and will make them pretty loose; milk from these cows will produce a diarrhea in infants almost invariably.

Another convincing point is that new clover imparts the odor and taste to the milk, also leeks, onions, garlic, turnips, and many drugs are readily detected by their odor and taste in the milk of cows eating these products, showing that their active principles are secreted in the milk. It is a well recognized fact that many drugs and some of the above-named vegetables taken by a nursing woman will impart their taste and odor to the milk, affecting the infant on her breast.

I have often observed in my practice that bottle-fed infants' stools in the summertime had a greenish cast to them right along, though the children were not often sick otherwise than a colic and being irritable at times.

A word might be said as to why the prepared foods are not a good substitute for cow's milk during the summer months; it is because they are made from cow's milk largely during the summertime, when the milk is most abundant and because they are prepared for the infant's use with the addition of milk. Also, as they are in part made from the new grains as well as some of the last season's, they carry the same objection as set forth above. My experience with several of these preparations has been most satisfactory during the winter months.

Let me remind you that most all new fruits, vegetables, and grains contain a laxative principle that will set up more or less of a violent diarrhea both in the adult and the young, the severity depending on the susceptibility, the quantity, and the strength of the poison ingested.

The remedy is simple enough: For those children depending exclusively on cow's milk for their maintenance the cow should be kept off of pasture, stall fed as in the winter, being given old hay or well cured new hay. Then, with the proper dilution, according to the infant's ability to digest and assimilate the milk, and attention to cleanliness, the summer mortality of babies will be no higher than that in the winter, and for the same reason.

As to the grasses, their chemistry has not been studied to any great extent, and no aperient properties have been discovered as yet; later research will bring them to light.

Massage in Phlebitis.—Marchais says that the usefulness of massage in the treatment of phlebitis is no longer disputed. He sums up the first part of his discussion by stating that the affected member should be immobilized as long as there is fever, and for fifteen days after the temperature has fallen. When the temperature has been absolutely normal for fifteen days massage and movements may be begun. The veins should not be massaged. For the first four days passive movements of the toes and of the foot are made. Very gentle effleurage is applied to the foot, to the leg, and to the external part of the thigh. During this treatment great care should be taken not to move the affected member from the plane of the bed. No pressure should be made over the saphenous or femoral veins. On the fifth day the patient may himself attempt certain movements, and he may exercise the muscles of his leg. On the tenth day the patient may be able to sit up in bed. Compression is useless and harmful. There will be marked edema, but this will gradually disappear. The writer declares that he has never had any accident in using this treatment.—*Révue Française de Médecine et de Chirurgie.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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REFORM IN THE MANAGEMENT OF THE AMERICAN MEDICAL ASSOCIATION.

ALL loyal members of the American Medical Association will read with interest and satisfaction, in the issue of the *Journal* of September 8, the announcement that in future the editor and his fellow officials will obey the mandate of the members, as voiced by the MEDICAL RECORD and other independent journals, that the policy of secrecy in the management of the Association be done away with. Grudgingly indeed, and with abuse of the independent journals, the editor, speaking apparently for the trustees, says that, while "there has been nothing to conceal in the past" and "there is nothing to conceal now," and while "full and complete publicity has always been made regarding everything concerning the Association," nevertheless they will henceforth heed the demand of the members for more light, and will "discuss in the immediate future the various phases of the work of the Association and the reasons for the opposition to it." This we understand to mean that in future the members will be kept informed of what is being done and what the management purposes doing, and how the money of the Association is being spent. The officials could not, of course, admit that they had been forced to yield to the demands of those whom Dr. Happel of Trenton, Tenn., chairman of the Board of Trustees, calls, with subtle humor and a keen appreciation of the dignity of his office, "kickers" and men "with a sore toe," so they have surrendered to Dr. Carstens of Detroit, who published a letter in the *Journal* of September 1, repeating in substance, but mildly and in form of protest, what the MEDICAL RECORD has so often said in criticism of the management.

Apropos of this letter, however, the title, which we assume the editor and not Dr. Carstens affixed to it, is misleading; it reads: "The Attacks on the American Medical Association." We have heard in private, have read in our exchanges, and have ourselves made many criticisms of the management of the American Medical Association, but we have never heard, read in any medical journal, or made an attack on the Association. It is entirely characteristic of the men who have lately been in control, and whose acts have been so severely criticized, that they assert and pretend to believe that such criticism is directed against the Association. It is not, and these men ought to know it is not. The Association is a magnificent body, and should be, and will be when properly managed, the representative of the entire medical profession of the country. No one who is loyal to the profession, and has its interests at heart, can oppose or attack the Association, but he can and does criticize its management, which is so very far from being the Association. This same spirit of *l'état, c'est moi* actuates the reply of one of the trustees to Dr. Carstens' letter, and also this editorial of submission to the will of the members; indeed, it is the substance of the only answer which any one of the officials, when his acts are criticized, ever makes. The best refutation of this false assumption is that the Association—the great body of earnest and honest members—has forced the officers to heed its voice and bring their works into the light. The Association has not been the attacked, but the attacker, and it is slowly but surely reclaiming its rights.

The MEDICAL RECORD has believed, and has repeatedly declared its belief, in the personal honesty of the officials of the Association, but it recognized the fact that the refusal of the management to take the members into its confidence had aroused a feeling of suspicious unrest which not only should be intolerable to the objects of this suspicion, but will seriously impair the usefulness of the Association if not speedily allayed. In these days of the unmasking of corrupt corporation officials every honest man who holds a position of trust should court investigation, rather than seek to suppress it. As Dr. Carstens says: "When such a resolution [to investigate the accounts of the treasurer and secretary-editor] is objected to, it makes men suspicious, and they ask why should anybody object to that? The Good Book says you must not only avoid evil, but the very appearance of evil. This is good doctrine."

We are rejoiced to learn that those in control of the Association have at last been brought to our way of thinking, and if they carry out loyally the promise of reform which they have now made, they will have the cordial support of all the members whose servants they are. There may still be criticism of their acts, but if they accept this criticism in the spirit in which it is made, not resenting it, but meeting it fairly and with good temper, they will learn that it is a tonic, and not an irritant; their task will be lightened, and the Association will enter upon a new era of peace and prosperity. Dr. Carstens says the trustees are lacking in tact. The writer of the editorial of submission, to which we have referred, has not displayed overmuch of this virtue, but he has made a beginning which is full of promise.

THE URINE IN NORMAL PREGNANCY.

PREGNANCY, a physiological process which affects the entire organism of the mother, may logically be supposed to exert a marked influence upon metabolism as expressed by the composition of the urine. This influence is best studied by the careful examination of a large number of specimens of urine from normal pregnant women, and in this light we must welcome a recent article of F. S. Mathews, in the *American Journal of the Medical Sciences* for June, 1906. In this article are recorded the results of an examination of several hundred specimens of urine from normal pregnant women. As a rule, the specimens were taken between the fourth and the eighth months of pregnancy, *i. e.* during the months when the pregnant woman is most apt to consult the phy-

sician for various disorders incident to her state, and when routine urinary analyses are most needed. The author's conclusions, briefly stated, were that "the urine of a pregnant woman, normally and with great constancy, has a specific gravity considerably lower than that of a nonpregnant." This loss of specific gravity Mathews attributes to an increased amount of urine secreted by pregnant women, and to a diminished excretion of urea. The average specific gravity was 1.013—the average amount was 1,500 to 1,800 c.c. (50 to 60 ounces) in the cases in which it was measured, and the average excretion of urea was only 16.20 grams (250 grains) in twenty-four hours.

While the conclusions of Mathews are undoubtedly correct, and tally with those of previous investigators, it is a pity that his research was conducted with the rough technique of the practitioner, instead of the accurate methods of the physiological or pathological chemist. The problem which he attacks requires the most exact methods for a correct solution. Thus his specific gravities were in most instances admittedly taken in specimens which did not represent the twenty-four hours' urine, so that but little store can be set by these determinations. The amount excreted, again, was determined only "at times," and the number of cases in which this was done is not stated; finally the urea determinations were made by Knop's approximate method, which serves well enough clinically, but cannot be regarded as trustworthy in a physiological investigation. Besides, the amount of urea excreted is but an uncertain and variable portion of the total nitrogen eliminated, which alone is a true measure of nitrogenous metabolism. A determination of the total nitrogen in these cases would more justly permit the author's conclusion that some of the nitrogen is retained in the body of the mother to feed the fetus.

Barring the sources of error indicated, however, Dr. Mathews' conclusions are in accordance with accepted views on the subject. Thus, as the normal standard amount of urine excreted by women is lower than in men (according to Yvon and Berlioz 1,100 c.c. in twenty-four hours, instead of 1,500 c.c.), the pregnant women examined by Mathews with their 1,500 to 1,800 c.c. showed markedly increased amount of urine in twenty-four hours. As to the decreased elimination of urea, this point is spoken of in the standard text-books (Ogden, p. 45; Saxe, p. 121, table), where 20 grams is given as the average amount for twenty-four hours in cases of normal pregnancy. This corresponds to the lower limit of normal urea excretion as usually given in the books where the average is stated to be 33 grams (Purdy, Crofton, Ogden), and the range from 20 to 45 grams (von Jaksch, Neubauer and Vogel, etc.), Mathews' figure, 16.20 grams (250 grains), as the average urea excretion of pregnancy, is lower than the figures given by Ogden and by Saxe. Ogden mentions the absorption of nitrogenous material by the fetus as the cause of the diminished urea in pregnancy.

Dr. Mathews has called attention to an important subject. Clinically, it is vital to know that a specific gravity of 1.013, or lower, and a diminished urea percentage in pregnancy do not necessarily mean the presence of renal lesions. The absence of casts, albumin, renal epithelia, etc., will also be in favor of normal kidneys, and if we bear in mind these important characteristics of the urine of pregnant women, fewer errors are apt to occur in our diagnosis and prognosis of renal involvement in pregnancy.

THE EFFECT OF NIGHT WORK ON THE BLOOD.

It is quite universally admitted that light and, conversely, its absence exert a well-marked effect on the animal organism, and that this effect is primarily manifested on the blood. Observers are by no means agreed, however, as to the exact nature and importance of this process, and an examination of the literature on the subject gives one the impression that the effect is a matter of conjecture rather than of actual proof. In view of this uncertainty and of the importance of a definite knowledge of the subject, an extensive experimental investigation was instituted by Gardenghi (*Wiener klinisch-therapeutische Wochenschrift*, Nos. 27 and 28, 1906), in which a considerable number of rabbits and guinea pigs were deprived of light for varying periods and careful observations were made with reference to the changes in the body weight of the animals, in the relative number of the red and white blood cells, and in the hemoglobin and iron contents of the blood. In many cases the morphological changes in the elements were also studied. It was thought advisable to determine the iron in addition to the hemoglobin content, because it has been shown that the relation between these two elements is by no means constant under either normal or pathological conditions.

The results as regards the changes in the body weight are rather interesting; some of the animals gained, other lost in this respect, and the writer accounts for this by assuming that in certain cases the withdrawal of the light resulted in diminished assimilation, in others it produced a slowing of the processes of oxidation. The alterations in the number of red and white cells were so inconstant that no conclusions were possible. A moderate diminution in the amount of the hemoglobin and iron as compared with that in the blood of the control animals was noticeable, however, although the decrease of the iron content was usually less than that of the hemoglobin. The writer is inclined to the belief that this phenomenon is brought about by the decrease in the amount of iron absorbed and in the retarded hemoglobin formation, rather than by a destruction of the previously formed hemoglobin. The reduction varied in both elements from 15 to 22 per cent., a demonstration of the fact that light must have an important bearing on the production of the blood coloring matter in animals as it does on chlorophyl production in plants.

These observations in animals have also been confirmed by the writer in the human subject, and he has found that bakers, among others, show this same constant diminution in the hemoglobin percentage; this can be demonstrated within a short time after night work is taken up, and it soon becomes a chronic complaint. No doubt the same phenomenon could be demonstrated among those engaged in other night occupations, and such workers should

be instructed to remain in the open air during the day, when they are not sleeping, in order to counteract the influence of the absence of this sunlight when at work.

Affections of the Coronary Arteries During Infectious Diseases.

It is a commonly accepted axiom that the behavior of the heart constitutes one of the most important elements in the prognosis of many of the contagious diseases. The failure of this organ has been attributed to several causes, but from certain observations recently made it would appear that changes in the cardiac vessels constitute an important etiological factor. A determination of the existence of such lesions will probably do much to clear up some of the hitherto unsatisfactorily explained cases of "heart failure" occurring during the course of many infectious processes. This subject has been carefully studied by Wiesel (*Wiener klinische Wochenschrift,* June 14, 1906), who found these arteries were almost universally the seat of degenerative changes in the various acute infectious diseases. The preponderance of the muscular tissue in these vessels tends to make this the principal seat of the lesions, although the other coats are also involved; but one of the main points in his investigation deals with the fact that the degenerative changes which occur form a basis for future sclerotic processes and their attending complications. A confirmation of these observations is contributed by Wiesner in the same journal, who also found that the lesions occurring in the vessel walls during the course of the acute exanthemata in children were likely to lead to the development of other processes in later life. In addition to these Wiesner also found similar changes taking place in eclampsia, endocarditis, pyemia, and in cases of acquired syphilis. Here likewise there is to be found an edema of the interstitial connective tissue, as well as an increase of the latter and the elastic tissue. The otherwise closely approximated bundles of muscle cells are thus forced apart and present alterations which can be attributed to pressure atrophy. These observations are of considerable interest, for, as already noted, they aid in accounting for certain cases of sudden death in the course of the diseases referred to, which have often been attributed, for lack of a better reason, to the action of the toxins produced by the particular disease.

Chloroform in Pertussis.

With the advent of the whooping-cough season, certain observations on the treatment of this obstinate and annoying condition recently published by Rothschild and Brunier should prove of interest. A child under treatment for congenital dislocation of the hip and a subject at the same time of an attack of whooping cough, was anesthetized with chloroform preliminary to reduction of the dislocation. It was noted after the operation that the cough had completely disappeared. In another case of pertussis the chloroform was administered with this especial purpose in view, and a similarly favorable result was obtained. In three other instances the sleeplessness and vomiting ceased at once after the anesthesia, but the cough lasted for several days; while in a number of others a cure did not follow the treatment until the end of one or two weeks. The chloroform was given until complete muscular relaxation was obtained, but without the corneal reflex being lost. The narcosis was kept up for from five to ten minutes, and in no cases did any unpleasant sequelæ supervene. The writers believe that the good effects of the chloroform in these cases depend primarily on its antispasmodic action. The cough of pertussis is reflex, and proceeds from an irritation along the interarytenoid region, the nose, or the tonsils. The stimulus finds its way to the centers in the medulla, which have already been brought to a condition of extreme irritability by the toxins of the disease. The chloroform not only exerts a sedative action on these centers, but during its passage along the respiratory passages it also acts as a local antiseptic. A few other observations of a like character are to be found in the literature, but this is probably the most extensive series of cases in which the drug has been used and the favorable results obtained. The simplicity of the treatment renders this therapeutic suggestion worthy of further trial.

News of the Week.

International Tuberculosis Conference.—The International Conference on Tuberculosis was opened at The Hague on September 6 in the presence of Prince Henry of the Netherlands. The French Foreign Minister, M. Bourgeois, was made president. At the session held on September 7 the matter of organizing popular sanatoria was discussed. Among other speakers, Dr. Lawrence F. Flick of Philadelphia urged the foundation of more dispensaries for consumptives, and Dr. Fisher of Berlin insisted that it was absolutely necessary to remove all consumptives from the various military services.

A Tuberculosis Exhibition in Cincinnati.—At a meeting of physicians and others interested in the crusade against tuberculosis in Cincinnati a few days ago, a committee was appointed to arrange to bring to that city the tuberculosis exhibit which has already been shown in New York, Cleveland, Detroit, and other cities.

Abating the Smoke Nuisance.—With the assistance of the Antismoke League, the officials of the Board of Health have for the last two months been waging a vigorous campaign for the suppression of the smoke evil. A great number of arrests have been made in all parts of the city, and offenders have been uniformly held for trial in the Court of Special Sessions early in October. This method of frequent daily arrests has had its effect, and there are now few chimneys giving forth black smoke, except those of the electric power houses of the Rapid Transit Company and the Edison company. The repeated conviction and fining of the engineers of these companies has had no effect, but the arrest of some of the executive officers might avail to stop the nuisance.

Medical Opposition to a Health Board.—The Newburyport, Mass., Medical Club recently invited the State Board of Health to send an inspector to investigate the condition of certain ice-cream establishments, which it was claimed one of the members of the local health board had licensed improperly. The club also presented a petition to the Mayor of the city praying for the removal of the offending member. This man, not a physician, had, it was alleged, spoken contemptuously of the work of sanitarians, and held that cleanliness was not necessary to health. In support of this view he said that the Jewish quarter of the city of New York was the most densely populated and also the most filthy in every respect, and with the very poorest sanitary ar-

rangements of all, yet its death rate was lower than that of any other part of the city. He is also credited with saying that sewer traps are useless and that every honest physician would have to confess that there was no danger in omitting them, and with other heterodox expressions most unbecoming in a health officer.

Doctors and Newspapers.—The Jefferson County (Ky.) Medical Association, the membership of which is composed chiefly of Louisville physicians, at its monthly meeting on August 26, unanimously adopted a resolution in condemnation of the practices of the "newspaper doctors." The resolution made it obligatory on all the two hundred members of the association to refuse to give details to reporters in relation to any medical subject unless the reporters would agree to suppress the name of the informant. The secretary was directed to take note of every newspaper notice in which a physician's name was mentioned, and the newspapers were notified of the passage of the resolution and were requested to assist in enforcing the rule. The morning after the meeting the local papers published an account of it and mentioned the reading of two interesting papers, printing the names of the authors, thus implying that they would not aid in the enforcement of the new rule.

Antivaccination as a Political Issue.—The Pennsylvania Antivaccination League has issued a call for a State conference to be held next week in Philadelphia to consider the advisability of carrying the question of compulsory vaccination into the coming political campaign. The league gave out a letter from a Pittsburgh doctor, who wrote that over fifty physicians in that city had announced their support of the proposed federation of all the antivaccination societies in Pennsylvania, the members of which will be urged to pledge themselves to support only the candidates who will promise to work for the repeal of the compulsory vaccination law.

A Prolific Race.—In spite of extreme poverty, the fertility of the Irish peasantry more than keeps the death rate in check. The annual report of the Registrar-General of Ireland, recently issued, shows an excess of births over deaths of 27,761. The loss by emigration was 30,676, leaving an apparent decrease of population of 2,915. It is estimated, however, that this is offset by immigration, of which no official record is obtainable. The population of Ireland in the middle of 1905 was 4,391,565.

A Quack Imitator of Dr. Lorenz.—The police of a New Jersey town are looking for a swindler who has been operating among the poorer classes, representing himself as a pupil of Dr. Lorenz and offering to cure deformed children for a small fee, payable in advance, of course. After a few manipulations of the affected member he would leave a bottle of liniment and promise to come again, which he never did, however.

Fraudulent Taking of Subscriptions.—The publishers of *Surgery, Gynecology, and Obstetrics* warn members of the profession against the operations of a man who has victimized many doctors by fraudulently taking subscriptions to that journal.

Typhoid Epidemic Due to Infected Milk Supply.—The New Jersey State Board of Health has traced the recent outbreak of typhoid fever in Trenton to the milk supply, and has announced that several dealers are to be prosecuted.

An Experimental Septic Tank.—Recently a conference was held between the secretary and the assistant secretary of the State Board of Health, as a result of which Urbana (Illinois) will probably have in a short time a modern septic tank for the purpose of demonstrating to the officials of the various municipalities the advantages of that method of sewage disposal.

The Enno Sanders Prize.—At the meeting of the Association of Military Surgeons, held in Buffalo this week, it was announced that the Enno Sanders prize had been awarded to Major Pilcher for an essay on "The Training of the Medical Officer of the State Forces to Best Qualify Him for Local Service and for Mobilization with National Troops."

A Shower of Degrees.—On the occasion of the meeting of the British Medical Association in Toronto, the Senate of Toronto University conferred the degree of LL.D. on the following members of the association and foreign guests: Dr. T. Clifford Allbutt, Dr. A. H. Freeland Barbour, Sir Thomas Barlow, Sir James Barr, Sir William H. Broadbent, Dr. H. W. Langley Browne, chairman of the Council of the British Medical Association, Mr. George Cooper Franklin, president of the association, Dr. William D. Halliburton, Sir Victor Horsley, Dr. Donald McAlister, president of the Medical Council of Great Britain, Dr. William J. Mickle, Dr. Louis Lapicque of Paris, Dr. L. Aschoff of Freiburg, Germany, and Dr. William J. Mayo, president of the American Medical Association. Four of the above were also recommended by the Board of Governors of McGill University for the degree of LL.D., these being Dr. T. C. Allbutt, Sir Thomas Barlow, Sir William Broadbent, and Sir Victor Horsley. Several of the recipients of the honor have already been similarly doctored by one or more other universities.

International Homeopathic Congress.—The seventh quinquennial International Homeopathic Congress convened at Atlantic City on September 10, in conjunction with the American Institute of Homeopathy, under the presidency of Dr. W. E. Green of Little Rock, Ark.

St. Louis Medical Society Auditorium.—The dedication exercises of the new medical auditorium of the St. Louis Medical Society of Missouri will be held on September 15, at 8 P. M. The president of the society is Dr. George Homan and the corresponding secretary is Dr. Emund A. Babler.

Hampdon District, Mass., Medical Society.—The members of this society were the guests on August 30 of the Noble Hospital, Westfield, the occasion being the formal dedication of the new surgical building. An address was made by Dr. Edward L. Keyes of this city.

In Honor of Dr. Pozzi.—Professor Pozzi of Paris has been presented with a gold medallion portrait by the sculptor Chaplain and a memorial volume of researches by his former students, on the occasion of the twentieth anniversary of his work at the Broca Hospital.

Dr. Alexander Hugh Ferguson of Chicago has had conferred on him by the King of Portugal a Commandership in the Order of Christ of Portugal, in recognition of his contributions to surgery.

The College of Physicians and Surgeons of San Francisco is to be rebuilt by the board of trustees on the site of the structure burned during the big fire, on Fourteenth street, between Woodward avenue and Jessie street. The building when completed will cost in the neighborhood of $50,000. The trustees hope to be able to construct the first story of their building so as to have sufficient lecture-rooms to begin their course in the autumn.

New East Side School for Cripples.—Plans have been filed at the Building Department for the

five-story school building to be built at 643 and 645 Water street, for the Crippled Children's East Side Free School Society. The structure is to be of brick and ornamental stone, 50 feet front, and 101 feet deep, and will have a roof garden. It is to cost $75,000.

Hospital News.— *Cooper Hospital, Camden.*— It is proposed to add a four-story and basement addition to this hospital, the new wing to contain a children's ward, an operating room, a dining room, and dormitories.

New Hospital in Grand Rapids.—The Board of Public Works of that city has approved the plans for a new city hospital for the care of those suffering from contagious diseases, and called for bids for its construction. The hospital will be three stories in height, and it is hoped to have it completed before winter.

Hospital for the Insane at Fort Smith.—The authorities at Fort Smith, Ark., have purchased a tract of twenty-five acres on the outskirts of the city, and will erect thereon a hospital for the insane.

Season of the Sea Breeze Home Extended.— The New York Association for Improving the Condition of the Poor announces that it has provided so far for about 4,000 outings of ten days each to women and children, and in addition over 18,000 outings of one day. Junior Sea Breeze, the open-air camp for sick babies at Sixty-fifth street and the East River, has been closed for the season, but the home at Sea Breeze, Coney Island, will be kept open until October 1.

A Tuberculosis Sanatorium for Kansas.—The next legislature in Kansas will be asked to appropriate a sufficient sum for the erection in one of the western counties of a State sanatorium for the care of those suffering from tuberculosis. Dr. S. J. Crumbine, secretary of the State Board of Health, has shown by statistics that in Kansas, as elsewhere, there are more deaths from consumption than from any other disease. In July of the present year the reports from the several counties to the State Board of Health show that there were 110 cases of tuberculosis and 63 deaths. In July of last year there were 123 cases and 54 deaths.

Hospital at Taylorville, Ill.—The new St. Vincent's Hospital at Taylorville, Ill., was dedicated with appropriate ceremonies on August 22. The hospital is four stories in height and was erected at a cost of $25,000.

A National Leper Hospital.—It is reported from Washington that Dr. Wyman, Surgeon-General of the Public Health and Marine Hospital Service, will renew his efforts when Congress meets in December to secure authority and an appropriation for the establishment of a leper hospital at some point in the United States. A bill appropriating $250,000 for that purpose passed the Senate in the last Congress, and was favorably reported in the House, but failed of passage because of the opposition of a delegate from New Mexico, who is said to have opposed it under the impression that the Government authorities intended to locate the hospital in New Mexico.

A Railroad Hospital at Temple, Texas.—The Atchison, Topeka & Santa Fe Railroad has adopted plans, and within a few days the contract will be let, for the erection of a new railway employees' hospital at Temple, Texas, which is expected to cost approximately $65,000.

Bequests to Brooklyn Hospitals.—By the will of the late Lewis Luckenbach, the Seney Hospital receives $10,000, and the German Hospital $5,000.

Obituary Notes.—Dr. Henri T. Gaboury of Taunton, Mass., died suddenly on August 28 of disease of the heart, at the age of thirty-five years. He was a French Canadian by birth, and was a graduate of the Medical Department of Laval University, Quebec, in the class of 1892. He had practised in Taunton about twelve years.

Dr. George Mackie of Attleboro, Mass., died August 31 at the age of fifty-six years. He was born in New Bedford, and was graduated from the Long Island College Hospital in 1874.

Dr. E. M. Donaldson of Cedarvale, Kan., died August 28 at the age of sixty years. He was a graduate of the Cincinnati College of Medicine and Surgery in the class of 1877.

Dr. John Theodore Heard of Boston died at his summer home, in Magnolia, Mass., aged seventy. He was a graduate of the class of 1859, Harvard College, and attended the Harvard Medical School. He served with distinction in the medical corps of the Union army during the civil war.

Dr. Edward T. Comegys, a retired surgeon of the U. S. Army, died at Los Angeles on August 31 at the age of fifty-seven years. He was born in Cincinnati, his father being a well-known physician of that city.

Dr. Harriet S. French died at Philadelphia on September 5 at the age of eighty-two years. She was graduated from the Hahnemann Medical College of Philadelphia in the class of 1865, being the second woman in Philadelphia to secure the degree of M.D. She was for many years president of the Pennsylvania branch of the Woman's Christian Temperance Union, and she was keenly interested in the work of the Society for the Prevention of Cruelty to Children.

Dr. C. G. Slagle of Minneapolis died suddenly on August 27. He was born in Ohio, and was graduated from the Medical Department of the University of Louisville in 1861. He practised for a time in Ohio, but about twenty years ago removed to Minneapolis.

Dr. R. C. Carlisle of Newberry, S. C., died on August 21 at the age of seventy years. He was a graduate of the New York University Medical School in the class of 1862. Dr. Carlisle was a practising physician and a successful farmer as well, being one of the largest land owners in the county.

Dr. W. T. Cody of Detroit died of apoplexy in Toronto, where he had gone with a patient, on August 28. He was graduated from the Rush Medical College, Chicago, in 1886.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

FALLING BIRTHRATE—INFANT MORTALITY—DELIRIUM TREMENS AND WORKHOUSE ACCOMMODATION — TROPICAL SCHOOL — ABERDEEN UNIVERSITY—OBITUARY.

London, August 24, 1906.

The Registrar-General's quarterly report (April, May, June) repeats the story of a decline in the birthrate. The subject is perhaps welcome to some of the newspapers in this dead season. There are still a few followers of Malthus among us who regard the returns with satisfaction, but the vast majority look upon the record as disquieting. For this second quarter of the year the rate per 1,000 of persons living was 27.5. Two years ago the rate was 27.9. The decline began in 1877, after a slow upward movement, with considerable fluctuations. The decline has gone on regularly and steadily. The difference between birth and death rate when the change set in left a net increase of population of 15.4. Two years ago it was only 11.7. It is sug-

gested that an earnest determination to prevent the excessive infant mortality would compensate for the decline which seems so strangely persistent. On the other hand, while preventing the preventable, there is no necessity for diverting attention from the phenomenon which is puzzling statisticians.

The subject of excessive infant mortality above referred to is constantly recurring, and its causes and prevention have been discussed time out of mind. At the recent historical conference on the subject the same statements were made that have been made by previous observers, but the national conscience is still undisturbed. Fresh statistics reinforce the conclusion that maternal factory employment coincides with high infantile mortality. The percentage of married and widowed factory workers to the whole population in five different towns was twelve, and the infantile mortality 193. In thirteen other towns, with percentage of 6 to 12, the mortality was 156. In eight towns with female factory workers, percentage of 6 or under, the infant mortality was 149. In some other parts statistics are even less favorable, but the foregoing are sufficient to justify the movement towards restricting work by these women. The question has been before Parliament, and although the evil is generally recognized, an attempt to meet it is postponed for the consideration of party politics. It is suggested that pregnant women should not be allowed to engage in factory work, and that the disqualification should be extended for three or more months after delivery. To medical men the propriety of such a measure needs no advocacy. The plan of carrying it out is another question. Among an ignorant and careless population, accustomed to no interference with so-called freedom, it would be difficult to formulate a method which would be acceptable. The idea of restricting pregnant women from one class of work would be resented and other forms of labor no doubt substituted. It would be easier to restrict the suckling mother, or rather the mother who ought to be suckling, because the fact of delivery is registered and factories could be forbidden to employ a woman for a definite period after the birth of a child. This would be good for mother and child too, and would probably bring abut a decrease in the death rate of infants. Numerous proposals have been made while awaiting legislation. Piles of papers have been printed advocating this, that, and the other method of meeting the evil, but none seem to go to the root of the matter. They hint that education will extend, and the dense ignorance of the poorer mothers will be dispelled, and that then they will return to a more natural mode of life. Our publicists do not tell these mothers that it is their first duty to suckle their children, and if they did, the example of the upper and middle classes would be the answer. For these classes are guilty of the same injustice to the children they bear. Bringing up on the bottle gives the mother so much more liberty that too many follow the pernicious practice, to the great detriment of their offspring. With these classes it is possible for medical opinion to have some influence. But there is a great countervailing influence in the press, which is crowded with advertisements and recommendations of all sorts of substitutes for breast milk. The question of a pure milk supply thus often takes the place of prominence in these discussions, and is in itself of great importance for infants, for invalids, and for the general consumer But for infants it is necessary to insist that the purest supply and the most perfect artificial foods are only substitutes for breast milk, useful indeed when that fails from any cause, or even needs supplementing. But every healthy mother should regard it as her first duty to give her offspring the nourishment provided by nature.

With regard to the laboring classes there is something worse to consider. When 20 per cent. of a man's wages goes to the public house, the wife has little chance of keeping a comfortable home for a family. Knowing no other way of increasing her resources she goes to the factory to get a little ready money for the new demand. Education, hygienic homes, etc., have numerous advocates. The labor members of Parliament are in favor of all, provided they are free, for the boasted independent elector seems to have discarded his independence and asks for everything that may benefit him, on the sole condition that it shall cost him nothing.

One of the problems of the Poor Law guardians relates to the maintenance of cases of delirium tremens It is said that the number of such troublesome cases is much greater than people are aware of. In some instances injuries have been inflicted on the attendants, and there seems no redress. The patients are legally temporarily insane, and so irresponsible. The guardians cannot recover the cost of their maintenance. A medical officer lately declared that if children were taken to the wards and shown these drink lunatics they would never get drunk themselves. That may be doubtful, but those who can ought to be made to refund the cost they have incurred. One board has decided to have these patients brought before them before discharge and censured, in the hope that shame may prevent some of them repeating their misconduct. As a further help to such the board will print their names and addresses on the agenda of the next meeting. This will confer on the offenders a little unenviable publicity in their own neighborhood.

King Leopold yesterday received Sir A. Jones and representatives of the Liverpool School of Tropical Medicine, and expressed satisfaction at the results of their investigations into sleeping sickness. His Majesty decorated Professors Boyce, Ross, and Todd.

In connection with the quartercentenary of Aberdeen University, the Lord Rector, Sir F. Treves, has received the honorary membership of the University of St. Petersburg.

Dr. John Cameron, consulting physician to the Royal Southern Hospital, and formerly lecturer on medicine at the Liverpool Royal Infirmary, has died at the age of 88. His first diploma was dated 1839, his M.D., Glasgow, 1843. In 1859 he took M.R.C.P., London and was elected a fellow in 1873. He contributed to the journals occasionally, and to the Liverpool Medical Institute, of which he had been president. In 1884 he reported the successful treatment of bronchocele by hydrofluoric acid, and further cases in 1888.

Dr. James P. Drinkwater died yesterday, in his 78th year, at Llangollen, where he had been medical officer to the Town Council for above forty years. He held other offices in the county. In early days he had served as surgeon on the North American Mail S. S. Co. He took his M.B.C.S. in 1852.

Dr. Charles E. Dumbleton, formerly Health Officer at Singapore, and surgeon at Dolby Hospital, Queensland, was a patient at St. Thomas' Home, suffering from gout. On Wednesday morning he was missed from his bed and found hanging from a rope, dead. He was 46 years of age. A Cambridge graduate, M.A. 1884, M.D., 1891. He had been Assistant Medical Officer in the Coton Hill Asylum, and also House Surgeon to the London Temperance Hospital.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

THE BRITISH MEDICAL ASSOCIATION MEETING—CANADIAN ASSOCIATIONS—A GOVERNMENT LUNCHEON—FIRE AT QUEENS MEDICAL DEPARTMENT—AMERICAN ORTHOPEDIC ASSOCIATION MEETING—INFANT MORTALITY PLAINLY DISCUSSED.

THE attendance at the recent meeting of the British Medical Association at Toronto surpassed all expectations. The fact that in the number of members registered it was the second largest meeting in seventy-four years of the Association's existence, is satisfactory evidence that the Canadian organization left nothing undone to make the meeting a success. The number of Canadian medical men who registered their membership and attendance was 1,103. The total registration of medical men at the meeting was 1,938. To this number may be added nearly three hundred Canadian medical students. The papers and discussions in all the sections were of a high order, and from a scientific point of view the Association has never had a more satisfactory meeting. The large attendance of medical men from the United States, who were warmly welcomed as visitors, was most gratifying. There were over three hundred ladies among the visitors. The local committees did their work well, and to the complete organization must be attributed a large measure of the success of the meeting. The financial management must have been excellent for the executives are now able to report that notwithstanding the large expenditure in connection with the local arrangements, there was still a small surplus left.

The annual meetings of the Canadian and Ontario Medical Association were held at Toronto the day preceding the opening of the British Medical Association. No business was transacted, and the officers of each Association remain the same as for the past year. The Canadian Medical Association will meet in Montreal next year, and the Ontario Association in Toronto.

One of the many pleasant entertainments at Toronto

during the recent meeting of the British Medical Association was a luncheon given by the Government of Ontario to the members of the section in psychology. This section was largely attended by medical men from Great Britain, United States, and Canada, specially engaged in the care and treatment of the insane. The luncheon was given at the Toronto Hospital for Insane. Among the speakers on the occasion was the Hon. W. J. Hanna, Provincial Secretary for Ontario, with whose department are associated all the hospitals and public charities of the Province.

The Medical College building in connection with Queens University, Kingston, was destroyed by fire recently. Although there was an insurance of only $22,000, steps were immediately taken to erect a new building, which it is expected will be ready for use early in October. The fire, it is thought, originated from a gas jet kept burning in an oven where paraffine molds were made. This fire is the first to visit Queens in its history on the present grounds. Four years ago an extra story was added to the building, at a cost of $11,000. The destruction of the bacteriological and public health laboratories in connection with the college, will for the present cause considerable inconvenience.

The annual meeting of the American Orthopedic Association in Toronto on August 20 to 23, was well attended. Afternoon and evening sessions were held for the discussion of scientific papers. An interesting feature of the meeting was the exhibition of apparatus and the presentation of clinical cases. Several pleasant social functions were held in honor of the visiting guests.

The question of infant mortality in Canada has been attracting considerable attention lately, and a recent statement, made by the Secretary of the Provincial Board of Health of Ontario, has excited much comment. In Canada, as in the United States, there are doubtless thousands of women whose sole aim in life is to have a good time socially, and to avoid maternity. If they do become pregnant they make the most desperate efforts to rid themselves of the products of conception. Failing in this they do not nurse their babies, and these, therefore, have reached a high death rate. The Provincial Board of Health is generally commended for preparing and issuing instructions for use of mothers. The vigor shown in some of these instructions may be illustrated by the following quotation from the Secretary's report: "It is time we reverted to the old-time idea, that the destruction of the young life, at no matter what stage in its development, except for well-grounded reasons, results disastrously to the mother, and is as criminal on the part of those who participate in it as it is demoralizing to our social life. If our Canadian race of women were rickety and destitute, as are many of the women found in the crowded and poor centers of Europe, there might be some excuse for this silent slaughter of the innocents, but in my opinion such extenuating circumstances cannot be generally advanced. Hence, it is with feeling of regret I direct the attention of this Board to the facts just submitted—with the hope, however, that in directing public notice thereto something may be done to correct this evil, which works with a malignance as subtle and yet as certain in its results and as fatal as any disease known to the physician or surgeon, and what is still worse, is demoralizing to the State."

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

DECREASE IN THE NUMBER OF CHOLERA CASES—INFECTION THROUGH VEGETABLES—SPREAD OF THE DISEASE TO OTHER SEAPORTS—ARMY MEDICAL BOARD FOR THE STUDY OF TROPICAL DISEASES—PERSONAL NOTES.

MANILA, P. I., July 31, 1906.

DURING the past three weeks cholera in Manila has been steadily diminishing. In view of the fact that this is the season of the year at which, in former times, the disease prevailed to a greater extent than at any other period, the fact that it has not been increasing, and that during the middle of the month it was at a standstill, and that it is now actually decreasing, makes the outlook for the cholera situation in Manila very encouraging. During the month of July there were 394 cases with 349 deaths in Manila, and 2,199 cases with 1,591 deaths in the provinces. The largest number of cases reported for any one day in Manila, during July, was on the third, when 32 cases were reported. On the Fourth of July there were 28 cases. The nearest approach to this number occurred on the ninth of July, when there were 24 cases, and since that time there has been a steady decline. Upon the twenty-ninth of the month there were no cases reported; however, the next day, July 30, eight cases occurred in the district of Tondo.

As the epidemic advances, it is becoming more and more apparent that the major portion of the infection is, in all probability, in that class of vegetables which are ordinarily eaten raw, and which have been fertilized with human excrement to which has been added some cholera stools. The police, the detective department, and the force of the Bureau of Health are all cooperating in an endeavor to locate the places where these vegetables are grown, in order that the guilty parties may be prosecuted and the nuisance abated. They have, however, been fined so often in the past on account of this practice that they have become extremely wary, and detection has become extremely difficult.

Within the last ten days the disease has spread to the province of Tayabas by the road which has recently been opened from Bay, Laguna, to Lucena. The seaports of Pagbilao and Lucena are infected. This feature of the situation is rather discouraging, because it will be impossible to maintain as efficient an outgoing maritime quarantine at the foregoing ports as it has been possible to maintain at the port of Manila during the past year, hence there is great danger of the disease spreading to the southern islands. On this account the Bureau of Health is making extraordinary efforts to stamp out the disease in the seaports and gradually drive it back to the territory which it has heretofore occupied. If the cholera should be conveyed to some of the nearby islands, it will, in all probability, spread throughout the Philippines, and the experience of the epidemic of 1902 will be repeated. The health officials feel that if the disease can be confined to the island of Luzon, at points which are readily accessible from Manila, that the chances of eradicating it within a year are good; on the other hand, if the disease must be combated in many different islands, to which access is exceedingly difficult, it may be a number of years before the Philippines can be finally freed of this disease.

During the month cholera again made its appearance in Bilibid prison, but the vigorous disinfecting measures which were instituted by the Bureau of Health stamped out the disease in a few days.

The Army Medical Board for the study of tropical diseases, which is composed of Assistant Surgeons James L. Craig and Percy M. Ashburn, is now undertaking the study of the etiology of dengue. In addition to this work, they will also proceed in a few days to Iloilo, for the purpose of ascertaining whether surra can be conveyed from carabaos to horses by artificial means.

The plague at Hongkong, which during the month of May reached the high number of 116 cases per week, is now steadily declining. For the week ended July 21 there were 7 cases reported. Since January 1 there have been a total of 875 cases, with 818 deaths. Of these, 854 cases with 803 deaths occurred in Chinese persons; 6 cases with 3 deaths among Europeans, and 15 cases with 12 deaths among other Asiatics, who were principally Japanese.

Dr. Harry T. Marshall, who was formerly connected with the pathological laboratory of the Johns Hopkins Laboratory, has arrived recently in Manila and accepted the position of pathologist with the Bureau of Science.

Dr. C. T. Hibbett, surgeon of the U. S. Navy, who has been in command of the Naval Hospital at Canacao, Cavité, during the past two years, has completed his tour of duty in the Philippines and has been ordered to return to the United States. Surgeon Nash, who was on duty on the *Rainbow*, the flagship of the Philippine squadron, has succeeded Dr. Hibbett in command of the hospital.

Progress of Medical Science.

New York Medical Journal, September 1, 1906.

Typhoid Infections of the Appendix.—Maynard A. Austin says that a simple appendectomy is usually all that is necessary in early typhoid cases, and when death occurs it is usually due to some later complication of the typhoid fever, and not from any immediate result of operation. He reports two cases in which there arose the question of diagnosis of typhoid fever and appendicitis which might seem easy to solve from the usual source of infection, until one had had the experience of being called in to distinguish such conditions.

Electrolysis in the Treatment of Deafness Due to Stricture of the Eustachian Tubes.—David G. Yates states that two symptoms are prominent in stenosis of the Eustachian tube, deafness and tinnitus. He reports four cases in which the indication was plain, to render pervious the Eustachian tube, and with one exception this was done with the bougie. After a brief description of the technique of the procedure, he states

that the main elements of success with this method are time and patience. The results are generally satisfactory and often brilliant.

Is Nervous Dyspepsia a Disease Sui Generis?—Achilles Rose believes that many cases diagnosticated as hysteria, neurasthenia, or nervous dyspepsia are nothing more than manifestations of atonia gastrica. The three flat abdominal muscles control to some extent the secretion, the circulation, and the innervation, as well as the position of the abdominal viscera. When the abdominal wall becomes atonic these organs sink, and such ptosis is conducive to many pathological conditions. In such cases abdominal plaster strapping relieves this relaxation. When abdominal support relieves the symptoms of so-called nervous dyspepsia, one has a scientific foundation for therapy. In numerous publications the abdominal belt for the relief of gastropsia and the mode of application are fully described.

Journal of the American Medical Association, September 8, 1906.

Postcritical Fever and Other Sequels of Pneumonia.—J. E. Talley reports cases of a number of conditions giving rise to febrile symptoms, after the crisis of croupous pneumonia, including among them empyema, abscess, endocarditis, and pericarditis, relapsing pneumonia, pleurisy, bronchitis, otitis media and meningitis, parotitis, hemorrhagic nephritis, thrombosis, neuritis, and colitis. The causes, therefore, he concludes, are manifold, and are often revealed only after careful and repeated examinations. Even if such examinations are apparently negative, one should be slow in attributing the fever to delayed resolution or to autolysis alone. More often, he thinks, a varying persistence of a purulent tendency, especially in the stage of gray hepatization, will explain the fever. Minute abscesses, hard to detect, or even a single one, may be responsible. The *x*-ray, he states, is of rather doubtful value in detecting such conditions; a thickened pleura embarrasses this means of diagnosis. The reported cases of cardiac complications in the paper hardly indicate the real importance that should be attached to this cause as a factor in many fatal cases. One should always be on the alert for this complication, especially in patients who have an old endocarditis or atheroma. The right side of the heart, as his cases show, is not always uninvolved. The development of a systolic murmur may be explained by anemia or muscular weakness, but the development also of a diastolic murmur usually means genuine endocarditis.

Incurable Eyestrain.—G. M. Gould remarks that there is little mention in the text-books of the important class of incurable eyestrain cases, and insists on the necessity of their recognition, for the information both of the patient as to his limitations and of the physician in his management of the cases. It is bad enough, he says, that thousands of patients should be gastrologized, laryngologized, gynecologized, etc., for easily curable eyestrain, but it is far worse when the eyestrain is incurable. He includes the causes of irremediable eyestrain under the following heads: congenital anomalies; high degree of ametropia; sequels of inflammatory disease, traumatism, amblyopia or other injury of ametropia, chronic heterotropia, cerebral or neural disease, systemic disease or diseases of interrelated special organs, injurious occupations, and unhygienic uses of the eyes. Under each of these heads the special causes are noted. The paper is an interesting one, and full of instructive details.

Internal Antiseptic Treatment of Tuberculosis.—H. H. Mahone proposes an antiseptic treatment of tuberculosis. The drugs he would employ are iodine and phenol, the latter lessening the irritating action of the former and permitting the use of larger doses. Both, he claims, also promote constructive metabolism under proper conditions. The formula which he has himself successfully used is given as follows: Phenol and tincture of iodine, each 160 minims; spirit of camphor, 3½ drams; glycerin, ½ ounce; and equal parts of cherry-laurel water, cinnamon water, chloroform water, and tar water to make 15 ounces. Mix and allow to stand until all free iodine disappears. Then make an emulsion by adding one ounce each of cod-liver oil and powdered acacia. Begin by giving one teaspoonful in ½ cup of water every four hours and gradually increase the dose to a tablespoonful at one hour intervals.

Femoral Herniotomy.—A. J. Ochsner claims that all that is required in treatment of femoral hernia with the normal circular opening of the femoral canal is to dissect out carefully the hernial sac quite up into the peritoneal cavity beyond the inner surface of the femoral ring, ligate it high up, cut it off, and permit the stump to withdraw within the peritoneal cavity. Removing all the fat contained in the femoral canal and simply closing the skin wound completes the operation. The method is based on the well-known fact that it is practically impossible to keep a circular opening in any part of the body from closing spontaneously unless it be lined with a mucous or serous membrane. In cases where the opening is congenitally not circular or is torn in traumatic hernia, or is cut in strangulated cases, this method is of course not indicated. He has used this method constantly for fourteen years and finds that, barring unusual accidents, recurrences do not happen. He tabulates the cases thus operated on from which he has been able to obtain definite reports, thirty in number, and in none of these was there a recurrence. He reviews the principal features of the more important methods used in femoral hernia, some of them in detail, and concludes that every one of them that does not utilize the principle here emphasized of leaving the femoral canal in the form of a circular opening, is faulty.

Filigree Reinforcement of Abdominal Scars.—W. Bartlett finds that a scar, no matter how thin, if kept from stretching by imbedded wires, forms a reliable integral portion of the abdominal wall, and that a ready-made filigree answers all the requirements. Since scars tend to stretch laterally, the filigree need be made up only of cross wires, held together in the middle by a single twisted strand following the line of the suture. His operative technic is described. He dissects away the old scar in postoperative hernia cases, opens up the sac, and with the hand inside dissects it away from the abdominal wall, separating the peritoneum and transveralis fascia from the posterior surface of the muscles, trimming it and closing it, and on the bed thus formed by fascia the filigree is placed and held by sutures at its extremities. It does not matter if, the defect being large, it is impossible to reunite the edges of any structure by the skin; all that is needed is that the edges of the network be covered for a short distance. He is convinced that a segment of the abdominal wall, consisting of peritoneum, filigree, and skin, is sufficient, provided the operation has been properly done. Cases are reported showing how well the contrivance works in various conditions; suppurating wounds, pregnancy, as a prophylactic arrangement, etc. He has had no failures to record in his five years' experience.

The Pathology of Bile.—W. Salant reviews the literature as to the changes observed in the bile in various pathologic conditions. It is decreased in febrile states, apparently more from functional derangement than from structural changes of the liver. It seems also to be diminished in malignant disease. The pigmentary changes have been considerably noticed and a wide range of variation in color has been observed in certain forms of disease. If the enterogenic origin of urobilin from bile pigment is accepted, its presence in large quantities in the urine in so many diseased conditions may serve as a proof of the increased formation of bile pigments in disease. Abnormal constituents of bile have been determined in various pathologic conditions, such as dextrose, urea, albumin, etc. Albuminocholia has been observed in cloudy swelling of the liver of pneumonia, tuberculosis, and sepsis, in various experimental intoxications, etc., but the subject does not appear to be fully cleared up as to the origin of the albumin, whether it is eliminated by the liver or due to inflammation or irritation of the gall bladder and passages. The toxicity of the bile in pathologic conditions is noticed. Pouchet claims to have isolated the poison of toxic bile in cholera and finding it in the nature of a pyridin base. Meltzer and Salant have found the toxicity of the bile increased after double nephrectomy, the exciting element predominating.

The Lancet, August 25, 1906.

Sterile Caseous Matter in the Treatment of Tuberculous Disease.—Peter Paterson makes a preliminary report of observations made on the effect produced in tuberculous lesions by the injection of some of the products of the tubercle bacillus as elaborated in the body, and reports five cases which, though by no means conclusive, are at least encouraging and justify further investigation. If tuberculous pus be kept in a refrigerator five or six months, but allowing it to thaw frequently during that time, the pus will not induce tuberculosis when injected into guinea-pigs. Having thus destroyed

the bacilli by this means, the serum is poured off and the sediment is then washed for three days in a continuous stream of cold sterilized water to remove all soluble toxins. Sterile normal salt solution is now added to the fine white sediment till each cubic centimeter of the emulsion contains five milligrams of solid substance, and the material is ready for use.

An Anti-Cholera Serum.—Allen Macfayden draws the following conclusions from his experiments: 1. That acutely toxic cell juices possessing active immunizing properties can be obtained from the cholera organism by the method employed. 2. That an antibody can be produced for that primary poison which exists as an integral constituent of the cholera bacillus—a matter upon which there have been considerable dispute and difference of opinion. 3. That the antiendotoxic power of the serum can be raised to a marked degree—a matter of equal importance. 4. That the serum in addition to its antiendotoxic possessed agglutinative and bacteriolytic properties. 5. That in the case of the cholera organism there exists an intimate relationship between its virulence and toxicity. 6. That the cholera endotoxin obtained under the conditions described is thermolabile, being readily destroyed at 55° and 60° C.

British Medical Journal, August 25, 1906.

Muscle Plasma; Its Opsonic Power and Function in Phagocytosis.—R. W. Allen writes that the action of opsonins being upon the bacilli and not upon the leucocytes, there is no objection to the employment of white blood cells of man in estimating the opsonic index of rabbit's blood serum or muscle plasma, the method of Wright being employed. In using rabbit's blood cells very few if any polymorphonuclear cells with bacilli inside were usually to be seen; such as were seen were in a very damaged condition, and the contained bacilli were undergoing solution, whereas the nonphagocytic white cells seemed perfectly healthy. It would appear that tissue plasma has a definite lytic action upon leucocytes which have taken up organisms, whereas it is without effect upon the normal white cells. The slow breaking down of leucocytes and their contained organisms would probably result in the formation at some period of powerful toxins, and it is possible that the rôle of this constituent of muscle plasma is to carry the process rapily past this period of danger.

Fissura Abdominalis and Double Genitalia.—Edwin Chill reports the case of an eight months fetus who lived for some hours after its birth. The whole of the abdominal wall was absent from about an inch below the point of the sternum to within an inch of the pubic bone, with the exception of a small irregular flap of skin which contained the umbilical cord. The viscera protruded and there was no great omentum. The external genitalia were duplicated and separated from one another by a clearly defined central space of skin. The urogenital and anal orifices on both sides were extremely rudimentary. There were present two shallow sinuses, with raised labia majora in each and two anal depressions below the perineum on either side. With the exception of these abnormalities the child was in every respect well formed, and cried lustily at birth.

Scleroma Neonatorum in Twins.— Bertram Addenbrooke reports these cases occurring in twins, a boy and girl with separate placentæ, who were apparently quite strong and healthy. Two days after birth he found the feet of the little girl very much swollen, hard, and waxy, pitting on pressure; the child was somewhat somnolent and refused the breast; the temperature was 97°, and the pulse 90. The swelling rapidly spread up the legs and thighs to the middle of the abdomen, and by the morning of the next day it involved the head and upper extremities. On this day the same condition was noted in the boy. The girl died on this, the third day after birth, and the boy three days later.

Berliner klinische Wochenschrift, August 20, 1906.

Syphiloma of the Internal Organs of the New Born.—Babes and Mironescu discuss this question with reference to its association with the *Spirochæta pallida*. From their studies on congenital syphilis the authors advance the claim that even in the newly born the internal organs become involved in the form of a nodular process and that there are cases in which the general diffuse lesions are absent while the neoplastic form of lesion is very well marked. It seems possible, therefore, to differentiate three forms of congenital syphilitic lesions: (1) a diffuse type, which either involves all the organs or only a few, (2) another in which circumscribed nodules in one or more organs appear and in which there are only slight generalized lesions, and (3) mixed forms in which both the circumscribed and diffuse lesions are present. Two cases are reported in which this nodular tissue proliferation occurred, including the parenchyma, and these processes seemed to be in intimate relation to the proliferation of the spirocheta. While this was well marked in the nodular form of the disease, it was absent in the diffuse type. When found it seemed that the number of bacilli was in direct proportion to the extent and severity of the syphilitic process, and in one of the cases they were localized in the hepatic capillaries.

Metastasis in Transplanted Sarcoma.—Haaland presents the results of his observations in mice. Ehrlich and Apolant have shown that a sarcomalike tumor is sometimes found developing on a transplanted carcinoma in the mouse which has all the characteristics of a true neoplasm. Haaland calls attention to the fact, however, that one of the principal characteristics of a malignant growth, namely the ability to produce metastatic deposits by cell embolism, has never been demonstrated. Accordingly, he studied the question from this standpoint and found that in a considerable number of cases (14 out of 23) pulmonary metastases could be shown without difficulty. They existed in the form of minute emboli of cells in the smallest pulmonary arterioles and in their later development showed the same tendency to infiltration of the surrounding region which is characteristic of the cells of the parent growth, the vessels being perforated and the parenchyma involved. This results in the formation of nodules of which the stroma is but little developed. Metastatic deposits in the lymphatic glands have also been noted, as well as in the liver, although in the latter it could not be demonstrated whether the emboli gained their way into the organ through the hepatic artery or the portal vein. This is to form the subject of a future investigation.

American Journal of the Medical Sciences, August, 1906.

Vascular Tension in Chronic Illness.—Hobart Amory Hare gives the following summary of the points which he emphasizes in his paper: Cardiovascular stimulants are often given when vascular relaxants are really needed. More attention to the protection of the heart from unnecessary labor is advisable. If the physician will direct his treatment to the vessels the heart will often be able to care for itself. A heart should not be stimulated to increased effort when the real object is to decrease its burden and to diminish the toxemia which is destroying its function.

A New Intestinal Parasite of Man: Paramœba Hominis.—Charles F. Craig describes this parasite, which he has observed in the feces of six natives of the Philippine Islands. The only symptom of importance in five of the cases was diarrhea. The stools were of watery consistence and in three instances contained a little blood and mucus. In only one case was *Entamœba dysenteriæ* present. Unlike any other ameba hitherto described as infecting man, this specimen undergoes a flagellate and an ameboid stage of development. The writer has not been able to demonstrate reproduction by longitudinal division during the flagellate stage of growth. However, he believes that such a method of reproduction probably occurs, and he thinks that this organism may be properly placed in the genus *Paramœba* described by Schaudinn. He is not prepared to speak concerning its pathogenicity. The parasite has thus far been found only in natives of the Philippine Islands.

The Relations of Chronic Villous Polyarthritis to the Dumbbell-Shaped Bacilli.—Max Schueller has demonstrated in one hundred and fifty out of two hundred and thirty cases of chronic villous polyarthritis the presence of dumbbell bacilli. Cultures were made from aseptic punctures of unopened joints with a special puncture needle and also from all of the writer's operated cases. He declares after repeated inspection of many microscopic preparations of slices, cultures, dry cover-glass specimens, taken from patients as well as preparations taken from joints, and blood-cultures from animals, that the name he has given to the bacillus causing polyarthritis chronica villosa in the joints, although not conspicuously adaptable to every specimen, characterizes undoubtedly in the greater majority of instances the form of the bacilli. He therefore believes that the name "dumbbell-shaped bacilli" should be retained exclusively for the bacilli of polyarthritis chronica villosa. He is convinced that this affection is caused by this bacillus alone, and that it has no near etiological relations to acute rheumatic arthritis.

Peptic Ulcer of the Esophagus.— Wilder Tileston states that in a large proportion of cases the ulcer has not been suspected during life. It is either entirely la-

tent or gives rise to no symptoms sufficiently characteristic for a diagnosis. The most prominent manifestations of the stage of ulceration are pain, dysphagia, vomiting, hematemesis, and perforation. The diagnosis of peptic ulcer of the esophagus is difficult and in many cases impossible. However, in some cases it may be made with considerable certainty. It is practically certain if other causes of ulceration can be excluded, and there are dysphagia, pain during or soon after deglutition, situated under the sternum or between the shoulder-blades, hematemesis or melena, and obstruction in the lower part of the esophagus. Symptoms of present or past ulcer of the stomach or duodenum offer valuable confirmatory evidence. The prognosis is grave. In the stage of ulceration the indications for treatment are the same as in the case of gastric ulcer.

A Case of Narcolepsy.—Albert N. Blodgett reports this case. The direct ancestor in the third generation antecedent to this patient was afflicted with an acquired infection of specific character. As far as is known the direct offspring of this ancestor all suffered from stigmata referable to direct inheritance. In these patients the disease appeared in the form of affections of the nervous system. The inherited taint appeared in the members who survived childhood only after full maturity. Narcolepsy is not often fatal. The writer presents a family chart and gives a brief history of the various members of this family.

An Unusual Case of Antitoxin Rash.—Ray Lyman Wilbur gives an account of this patient, who had a strain of Spanish blood. During childhood she was an asthmatic. There was also a history of occasional urticarias following the eating of strawberries or shellfish. As a member of the family was ill with diphtheria, this woman was given an injection of a thousand units of antitoxin. This was followed by an intense reaction almost immediately. The heart-beat became rapid, forcible, and inefficient. The mucous membranes became temporarily edematous. By much encouragement and the exertion of great will-power consciousness was retained. The patient thought that she was about to die. Hot black coffee improved the cardiac action. A severe asthmatic attack followed the first period of partial collapse. For thirty-six hours there was great anguish from the intense itching and burning of the skin over the entire body. Besides the hyperemia of the skin there developed immense white wheals. During the second day the rash rapidly subsided. The suddenness of the attack suggests that the effect of the antitoxin may have been upon the central nervous system, producing, perhaps, a peripheral vasomotor paralysis. Since this attack the patient has been quite well.

Hematogenous Albuminuria.—R. Hingston Fox, after referring to the history, nomenclature and causes, states that the three chief signs of hematogenous albuminuria are (1) the albumin is absent or at least lessened in the night urine; (2) it disappears after taking calcium lactate, and (3) the urinary sediment contains no casts or renal cells, but often crystals of uric acid or oxalates. Many years' experience is needed to decide with certainty whether these cases eventually become the subject of progressive kidney disease. So far the evidence suggests that we need not take a serious view of this disorder. Rest in bed, a milk diet, saline purgatives, iron and nux vomica—tonics for the blood and nervous system—were used long ago and cured the disorder. The direct use of calcium lactate gives a new and effectual means of altering the blood state on which the transudation of albumin depends. When the albuminuria is refractory to the calcium salt he advises trying the strontium lactate.

French and Italian Journals.

Pigmentary Mask.—Gilbert and Lereboullet have observed in chronic asystolics the pigmentary mask more or less accentuated. This discoloration is more marked on the forehead and on the temples. The mask is due to cholemia, a consequence of passive hepatic congestion. Reference is made to several cases. The first patient had passed through two pregnancies without such discoloration. The mask which appeared at the time of the attack of asystole became accentuated by the repetition of the crises. Cholemia was intense, urobilinuria marked. The mask grew lighter after the passing of the crises and the cholemia. The second patient had never been pregnant. The mask appeared on the occasion of a mitral asystole, with cholemia, urobilinuria, and objective liver symptoms. In an asystolic, the appearance of this mask points to the presence of hepatic congestion with cholemia.—*Le Progrès Médical*, June 30, 1906.

Aneurysms of Large Vessels: Etiology, Pathogenesis, and Treatment.—Lancereau states that the aneurysms of the large vessels, those of the aorta in particular, commonly result from the action of the microorganisms of the three diseases, tuberculosis, syphilis, and malaria. These microbes localizing in certain cases in the external coat of the arteries cause the formation of young connective tissue elements. Sometimes they penetrate to the middle coat, which they perforate. The lessened resistance of the arterial wall under the influence of blood pressure ends at times in a hemorrhage, sometimes in an aneurysm. Preventive treatment consists in combating the alteration of the blood-vessels. For this purpose the employment of mercurial and iodine preparations is indicated in syphilis. Such treatment is also useful in aortic sclerosis of malarial origin, at least in the beginning. When the aneurysm is once formed the physician can practise ligature of the vessel. Not only, however, is such a ligature dangerous, but it is impossible when the aneurysm involves a large vessel, the aorta in particular. In such cases coagulation of the blood should be favored in the aneurysmal pocket. Lancereau and Paulesco have had distinct success in a large number of cases with injections of gelatinized serum. Such preparations should be perfectly sterilized. In 1,200 injections Lancereau reports that there has not been one accident.—*La Tribune Médicale*, June 30, 1906.

Mechanism of the Action of Diuretics.—Giuseppe Matucci has made a study of the causation of diuretic phenomena in animals by section of the medulla at various levels and injections of glucose after the section. He believes that he is in a position to deny the existence of a center for the secretion of the urine in the medulla. The author then separated the kidney from all its nervous connections and made sections of the medulla. He denies the existence of a center between the third and fourth cervical vertebræ on which diuretic substances act. There is a constant relation between blood pressure and secretion of the urine; although he does not think that the secretion is entirely dependent on pressure and would not exclude a secretive action of the renal epithelium, still the main factor in secretion seems to be blood pressure. The composition of the urine supports this argument, because were the increase in quantity due to increased functioning of the epithelium the solids should be increased, while in fact the water is much more increased.—*Lo Sperimentale*, LX. year, Vol. III.

Repair of Nerve Fibers.—M. Segale, in order to establish the method of regeneration of the nerve fibers in an animal which has been paralyzed as a result of secretion of a nerve and has recovered from the injury, examined many cases of such recovered nerves. He believes that autoregeneration takes place of the nerve fibers. He found nerve fibers in the cut portions of nerves shaped like a key. There were also ramifications of nerve fibrillæ in the substance of the muscles about the cicatrix. The author has never been able to demonstrate new formed nerve fibers in the peripheral segment of the nerve, as long as it remained separated from the central fragment. The new nerve fibers in the peripheral segment arrive there by roundabout ways from the center.—*La Riforma Medica*, June 23, 1906.

Fatty Cyst of the Transverse Mesocolon.—G. D'Urse reports a case of fatty cyst of the mesocolon, an unusual location for such growths, which are usually connected with the small intestine. The cyst gave no symptoms, the ones for which the patient came to the author being those of an ordinary indigestion. A tumor was felt in the abdomen which was supposed to be connected with the stomach, and a laparotomy was advised with the diagnosis of myoma of the gastric wall. The tumor proved to be in the mesentery of the transverse colon instead of in the wall of the stomach. It consisted of a cyst with fibrous wall containing a thick fatty fluid, the microscopic examination of which showed it to be an emulsion of finely divided fat globules with no cellular elements. The histological examination of the cyst wall showed it to result from changes in a lymphatic gland of the mesentery. Such cysts may be serous, chylous, echinococcic, or epithelial in their nature. This one was evidently chylous. We cannot speak of true chylous cysts of the colon, but experiments on animals show that a certain amount of fat may be absorbed by the wall of the colon, and this probably arose in that way, the fats being carried by the lymphatics to this gland, where from occlusion of the lymphatic vessels the contents were retained and formed the cyst.—*Il Policlinico*, June, 1906.

Book Reviews.

PRACTICAL MEDICINE SERIES. Edited by Dr. GUSTAVUS P. HEAD, Chicago. Vol. III: Eye, Ear, Nose and Throat. Chicago: The Year Book Publishers, 1906.

THIS series of annual reviews has firmly established itself in the estimation of American practitioners. In this volume Dr. Casey A. Wood reviews the literature of the eye, D. Albert H. Andrews that of the ear, and Dr. Head that of the nose and throat. No attempt is made to collate all the articles of the year on each topic but careful analysis is made of all that are in any degree noteworthy. The wheat is thus winnowed from the chaff. The book is well printed and freely illustrated. The index is full and is accompanied by a list of authors quoted.

TRACHOMTHERAPIE IN DER VERSEUCHTESTEN GEGEND UNGARNS. Von Dr. MARCZEL FALTA, Augenarzt in Szeged. Redigiert von Sanitätsrat Dr. MAX OHLEMANN, Augenarzt in Wiesbaden. Berlin: S. Karger, 1906.

THIS brochure, which is one of 104 pages, with a few illustrations in the text, purports to be a presentation of all that is really known about trachoma as regards its various forms, the methods of treatment of the disease and the results of the disease. A description of the affection occupies four and one-half pages. The rest of the volume, with the exception of three or four pages which are devoted to a description of the examination of trachomatous patients, is taken up with the question of therapy. The subject is a trite one, but the author has handled it in such manner that he has produced a volume worthy of the perusal of those who are interested in the study of this disease.

THE DAMASK GIRL, and Other Stories. By MORRISON I. SWIFT. New York: The Morrison I. Swift Press, 1906.

THIS is a little volume of 144 pages, and contains nine short stories. The nerve specialist in the second story was certainly "A Very Rash Doctor," and if that story is a sample of the hero's powers as an expert witness, we can understand the disrepute in which that class is held. In "The Scientist's Wife" we see some of the possible complications, when a man is attached to science by one hand and to a jealous wife by both hands. The book will take but little room in the holiday seeker's valise, and will blend well with a hammock, a fan, a pipe, and a snooze on a warm afternoon.

NOMENCLATURE ANATOMIQUE EN QUATRE LANGUES, par le Dr. PAUL RODET. Paris: Masson et Cie., 1906.

THIS is a list of anatomical terms in Latin, French, English, and Esperanto. The Latin is that of the nomenclature adopted by the Congress of Basle; the French is that of France; the English is, usually and with an occasional hiatus, that of English-speaking anatomists; the Esperanto is, we assume, that of the Esperantists. The latter looks to the uninitiated easy enough, but ugly. The accessory thyroid glands may be called "gl. thireojdaj akcesoraj," if one wishes, but we think the Latin term will be more generally understood, and it certainly rolls off the tongue more easily. However, if one has the curiosity to know the Esperanto equivalents for the good old English, or the more solemn and international Latin terms, he will find them here. The vocabulary is especially valuable in supplying a list of the Basle anatomical terms and their equivalents in French and English, but its utility would have been increased by the inclusion of the Italian (which are not always the same as the Latin, even allowing for the regular modifications of termination) and the Greek terms.

MANUAL OF ANATOMY, Systematic and Practical, Including Embryology. By A. M. BUCHANAN, M.A., M.D., C.M., F.F.P.S. Glas., Professor of Anatomy in Anderson's College, Glasgow; Examiner in Anatomy for the Triple Qualification of the Scottish Licensing Bodies; Examiner in Anatomy and in Physiology for the Dental Diploma, and Examiner in Anatomy (Human and Comparative) for the Fellowship of the Faculty of Physicians and Surgeons of Glasgow; ex-Examiner to the University of Glasgow; formerly Senior Demonstrator of Anatomy in the University of Glasgow. Vol. I., Osteology; Upper Limb; Lower Limb. With 268 Illustrations, mostly Original and in Colors. Chicago: W. T. Keener & Co., 1906.

THIS is the first volume of a new work on Anatomy designed especially for the student. The author has had a long experience as an examiner in this subject, and in preparing the treatise has kept the examinational requirements of the candidates for the medical or surgical degree constantly in view. The result has been, as far as we can judge from this first volume, very satisfactory from the student's standpoint. The volume is handy in size, with limp covers, and so offers a convenient manual for dissection; the description of the various parts is succinct and clear, and the illustrations are in the main excellent. For the requirements of the student, in his student days, we should say Dr. Buchanan's work is perfectly adequate, but it has one fault—a virtue in most works, but not in anatomies—that, namely, of conciseness. A treatise on anatomy is an essential for the practitioner's library, one to which he must refer constantly (for who remembers the details of anatomy?), be he internist or surgeon, and in this reference he needs especially details rather than broad facts. Compared with the two standard works, Cunningham and Gray, this otherwise most commendable treatise is deficient in this very insistence upon minute and apparently unimportant details; it supplies fully and completely all that the student needs to enable him to pass a creditable examination, but it is inferior to the two books mentioned as a work of reference for the library of the practitioner who has to grapple with disease and needs all the aids that books can furnish to enable him to diagnose and treat with success all the ills that flesh is heir to. As a preliminary work, however, if one can conveniently add works of reference to the essential library of his student days, Dr. Buchanan's can be conscientiously recommended.

ABBOTT'S ALKALOIDAL DIGEST. A Brief Description of Some of the Principal Alkaloidal medicaments, with Suggestions for their Clinical Application, and Embodying Various Articles on Important Special Agents and Certain Great Phases of Alkaloidal Therapy that Have Been Developed in the Personal Practice of the Author and His Colleagues. By W. C. ABBOTT, M.D., Editor of *The American Journal of Clinical Medicine*.. Chicago: The Clinic Publishing Co., 1906.

THE scope of this little manual is fully described on the title page, and we can only say that the contents meet the description in every particular. The author is one of those cheerful souls—the therapeutic optimists—all too rare in the recent past, but now happily growing more numerous, who believe in the power of drugs, judiciously administered, to arrest or modify the course of morbid processes, even those of the so-called self-limited diseases. The book is frankly a missionary tract of the alkaloidal therapeutists, but it nevertheless contains much that will be found useful, even by the nonbeliever in this special form of medication.

LES EMBOLIES BRONCHIQUES TUBERCULEUSES. Etudes Cliniques, par le Dr. CH. SABOURIN, Directeur du Sanatorium de Durtol (Puy de Dome). Paris: Felix Alcan, 1906.

IN this treatise the author has for his object the distinction between primary tuberculous lesions of the lung, and secondary lesions of the same organ having their origin elsewhere. The primary lesions are nodular; the secondary lesions are tuberculous pneumonias. It is the secondary pneumonic type that the author places in bold relief, and to which he assigns a special pathogenesis. Tuberculous pneumonias, or pleuropneumonias, which are often necrotic, have for their immediate cause a bronchial embolus (this embolus being the product of bacilli) which has traveled from some primary nodular focus in the lung. They in no way differ from ordinary infarcts, save in their bacillary origin, and have a marked tendency to terminate in necrosis, suppuration, and cavity formation. The causation of these emboli, and the great fact that dominates their tendency to necrotic tuberculous pneumonia and decides its extent and subsequent prognosis and treatment, is that the lesion follows upon fatigue and exhaustion from overwork or excesses and overexercise, and the author believes that no tuberculous individual who submits to rational hygienic treatment from the first appearance of the infection ever goes into the stage of secondary pneumonia of necrotic type. These opinions are based upon a series of clinical observations and close study, and the author asserts that when incipient primary cases are treated in sanatoria where they are compelled to lead quiet, rational, hygienic lives, they never terminate in tuberculous necrotic pneumonias with their subsequent foci of suppuration and cavity formation. The last chapter of the book is devoted to the signs and symptoms of tuberculous pneumonias occurring along the interlobular tissues and involving the pleura between the lobes of the lungs. The book is carefully written and can be heartily recommended as worthy of study.

AIDS TO SURGICAL DIAGNOSIS. By H. W. CARSON, F.R.C.S., Surgeon, Tottenham Hospital. New York: William Wood & Co., 1906.

THIS volume contains in small compass the main points in the diagnosis of the more common surgical affections. No attempt is made to go into fine points of detail, or to deal with rare conditions. The book is eminently practical, is well arranged, and should prove of value to fourth-year students in the hospital wards and in the dispensary.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, Held at Toronto, August 21, 22, 23, 24, and 25, 1906.

(Special Report to the MEDICAL RECORD.)

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SECTION ON MEDICINE.

Third Day—Thursday, August 23.

Heart Block in Practice.—Dr. G. A. GIBSON of Edinburgh said that the recent interest in heart block had been one of the most helpful things for the study of cardiac disease ever secured. He had had one very characteristic case, in which the autopsy showed how thoroughly well grounded was the pathology of this little bundle of muscle fiber, so important for heart action. In this case the clinical symptoms had been typical, and after death the bundle of His was found paler than normal, even to the naked eye, though all other parts of the heart seemed perfectly healthy. This bank of muscle was seared with fibrous tissue and the striations of it were much less than normal. The jugular and radial pulses, when compared during life by means of careful tracings, had shown a complete divorce of the ventricle and auricle in action. Dr. Gibson demonstrated specimens from the case, showing the heart muscle fibers absolutely healthy within a millimeter of the bundle of His, though the bundle itself had many pathological changes. The vagus in cross section and in longitudinal section was perfectly healthy. In this case there was no history of specific infection, though some thickening on the anterior portion of the liver gave rise to the suspicion that possibly there had been an old syphilitic infection. Dr. Gibson said that the study of heart block and that the disturbance of heart rhythm from the standpoint of recent advances in knowledge were sure to be productive of most beneficial results.

Failure of Contractility.—Dr. W. S. MORROW of Montreal said that a number of cases thought to be heart block were really due to disturbances of the contractility of the heart muscles. These cases were very common, occurring much more frequently than had been thought. He demonstrated by means of a diagram how the ventricular systole might be delayed and how the conduction of the contractile impulse from the auricle upward and then downward might be delayed in various ways. He suggested that there had been a distinct misunderstanding as to certain phases of the heart action, and as a consequence a jumping to unjustified conclusions.

Case of Stokes-Adams Syndrome.—Sir JAMES BARR of Liverpool, England, described a typical case of Stokes-Adams disease, with epileptic attacks and eventual death. The patient at first had an attack of unconsciousness on rising during the night, then he fell while hurrying for a train and hurt himself, being unconscious for some time. He continued to have such attacks. When first seen he had a pulse of 17. He never had a pulse higher than 24. He had frequent attacks of unconsciousness, during which his pulse became very slow and his face very pale. Recovery from his attacks was always ushered in by a flushing of the face. During short epileptic seizures the face and arm were specially affected. During these attacks, for thirty seconds there would sometimes be no pulse, then for some minutes there would be a beat every five seconds. Then there would be another intermission of ten seconds, and then a gradual acceleration of the pulse rate until the pulse was beating 17 per minute. The general condition was not such as to suggest the serious lesion at work. Both ventricles were enlarged, the left the most, and it was judged before death that the heart weighed about twenty ounces, and at autopsy it was found to weigh nineteen and one-half. The patient frequently helped himself, stretching out his hand to take a glass of water, and in the interval of his attack was perfectly conscious. His arteries were thickened, but not much beyond his years—he was sixty-six—and were somewhat tortuous. No beating could be felt in their walls. A curious effect was the stimulation produced by deep breathing. During deep breaths, when the patient held the air in his lungs, two or three muffled beats could be heard in between the regular contractions. The coronary arteries were thickened, especially near the bundle of His, and there was a great deal of connective tissue within the bundle. The speaker could not persuade himself that the bundle of His was so important in this matter as had been taught. He did not think that it conducted impulses, and there was no evidence of its contraction. It must not be forgotten that the heart was really two organs of different functions; one pumped blood through the lungs, the other through the general circulation. They were connected together only for nutritional and economical reasons. The tendency of the right auricle to contract of itself must not be forgotten. Dr. Barr had often seen it continue to contract even on slight stimuli several hours after death from asphyxiation. This was true in human beings, and it was evident that this portion of the heart was the most excitable. The right ventricle was more excitable than the left. When the blood from the general circulation got into the right auricle stimulation at once resulted and the heart contracted. Further studies on these subjects were absolutely necessary before conclusions could be drawn.

Fourth Day—Friday, August 24.

Diet in Typhoid Fever.—Dr. F. T. SMITH of London said that the worst feature of the present almost universally accepted treatment of typhoid fever lay in the fact that patients were not given enough to eat. He insisted that when a typhoid fever patient was hungry he should be fed the things that he cared for, without much regard to any arbitrary rule. The patient was not a case, but an individual, and the diet suitable to the patient must be selected without any reference to his temperature. An exclusive milk diet had not availed to save patients from the worst complications, and perforation and hemorrhage occurred in spite of the greatest care in this matter. Only certain kinds of food must be absolutely excluded. Among these were nuts, grapes, oranges, strawberries, gooseberries, and figs, because they contained small indigestible pits which were irritating to the typhoid ulcers. If patients craved these, they might be given after having been strained through muslin. Only two things served as indications for the diet. Nothing must be given that caused nausea or distention. These could be kept fairly under control, by feeding not by routine, but according to the indications in each case. When Sir William Gull allowed the King almost on his deathbed from typhoid fever to take a glass of beer, that ought to have settled the enthusiasm for exclusive diet, but the cry was still milk, milk, milk, until now Dr. Smith had more sympathy with the patient than with the old fogy notions that dictated such an exclusive diet. The most important thing was to treat the patient as an individual. In ten years Dr. Smith had had under his care 113 cases of typhoid fever, with 24 deaths. Only four of the deaths occurred after solid food had been taken, and the remainder were of patients who were in very serious condition when admitted to the hospital and were given only water and at most an exclusively liquid diet. In over one hundred cases there had been only 2 per cent. of complications. One patient suffered from thrombosis, one from abscess, and one from periostitis. In the records of over one thousand cases in the same hospital, treated by an exclusively milk diet, there were over 10 per cent. of complications. The absence of complications, Dr. Smith said, was an extremely important matter. The average stay of his patients in the hospital had been forty-eight days. The average stay of patients in the wards of his colleagues had been fifty-seven days. The average day of the disease on which patients were dis-

missed from his service was the sixtieth. The average stay in the other services was till the seventieth day of the disease. This represented a clear saving of ten days, an extremely important consideration for workingmen, and besides, the absence of complications made recovery more complete and subsequent morbidity much less. Dr. Smith pleaded then for giving up the eternal milk diet, which was founded only on the prejudice of old-time physicians who had been afraid of doing injury and did not realize that this starvation diet was of itself an extreme factor in producing death from typhoid fever.

Dr. McCallum of Toronto said that he had recently been asked a medicolegal question as to what constituted solid diet. He found it extremely hard to decide. Practically all food that was taken became liquid in the stomach. His answer was that meat must be considered a solid diet, yet even this was doubtful. There had been much prejudice in this matter and there was room for distinct advance in our knowledge of what constituted a solid diet.

Dr. J. Hutchison of London said that he agreed with Dr. Smith that there was too much fear of doing harm by adding to the patient's diet in typhoid fever. Mechanical irritation of the ulcers was not likely to take place. The danger of the mixed diet was rather that it might produce distention or indigestion. Milk, by producing lactic acid, served to prevent fermentation, since most bacilli did not grow in the presence of lactic acid. This was its main advantage. The individual appetite must be consulted, and it seemed probable that if the patient really desired a particular kind of food, then the possibility of digesting it was also present. Russian investigations into digestion had shown the value of this question of appetite, and the indications should not be neglected. Meat could not be considered a solid diet, in his opinion, at least as regards the ileum, since surely it would be dissolved before reaching this portion of the intestines. Prejudice rather than science had ruled in the matter of diet for typhoid fever patients, and it was time that a rational diet should be given.

Dr. Norman Walker of Niagara Falls, Ont., said that he had found fruit juices very valuable as an addition to the diet of typhoid fever, especially during the first week, when the tongue was coated and there was no desire for food. These sweetened the stomach and proved very grateful and cooling to the patients. He had found grape juice especially valuable, and recommended it to those who were looking for something for their patients at this stage of the disease.

Dr. McCaskey of Fort Wayne, Ind., said that there was a larger percentage of residue from milk than from almost any other form of food. It was often thought to be completely absorbed, but any one who knew much about autopsy records realized what hard curds might be found in the intestines. Certainly a change to animal diet was a desirable improvement. In spite of the prejudices to the contrary, meat left much less residue than milk. It seemed important to remove the purin bodies from meat broths, because these added to the danger of intoxication in typhoid fever, since they provided a very favorable culture medium for microorganisms. Bouillon was used to grow microbes on, and yet all of this material might be removed by repeated boiling.

Sir Thomas Barlow said that everyone of large experience in typhoid fever knew how hard it was to withstand the pleading of the patients for something more than slop diet. This craving undoubtedly represented a physiological need and must be responded to as far as possible without danger to the patient. One sure result of a more liberal diet was earlier convalescence and less liability to complications that prolonged the course of the disease. If it were only that there was less likelihood of thrombosis, this was of itself sufficient to justify a liberal diet. Unfortunately if patients were kept on a very low diet they were apt to bolt food when given to them, and they craved it so much that visiting friends surely brought it to them, and the result was perforation and hemorrhage. The speaker said that Trousseau's method should be followed. Meat should be finely scraped and then boiling broth poured over it; this made a very grateful addition to the diet. Other things might be ground up with mortar and pestle. As a routine practice the use of fruit juices was not only grateful, but had distinct nutritive advantages. The coated tongue of patients often bothered physicians and their patients, but the first bit of food they had to chew removed the coated tongue. Some food to chew should be given regularly, for digestion was greatly helped by means of the salivary secretion, and unless there was chewing this did not find its way into the lower digestive tract. Dr. Barlow sometimes had given his patients meat to chew for a while, forbidding them to swallow it. This of course could be done only with patients who were absolutely to be trusted. In this way the nutritive portions of meat were ingested and the fiber spit out. He did not consider that milk was absolutely harmless. If given in large quantities, without dilution by barley water or arrowroot, enormous craggy masses remained in the intestines, and might very well produce hemorrhages by abrasion of the typhoid ulcers. This was especially the cause of the small hemorrhages that occurred during the fourth week. Sir Thomas had found that seeds were very dangerous, and therefore he was cautious about permitting fruit unless properly prepared; typhoid fever was not a disease to experiment with, and additions to the diet must be made with great caution. Meat should not be allowed more than one day in three until its effect upon the temperature was noted. The temperature was not to be made a fetish, yet if the food given disturbed it, it was dangerous. Variation in the diet was the most promising improvement in the present-day treatment of typhoid fever that medicine now held out to us.

Dr. Smith, in closing the discussion, said in answer to a question, that whenever constipation occurred, that is, whenever a typhoid fever patient did not have a stool for twenty-four hours, the nurse had orders to give dram doses of sulphate of sodium every hour until a movement took place. He preferred that patients should have slightly constipated bowels rather than diarrhea. The most fruitful source of fatal diarrhea was milk given every two hours, whether patients wanted it or not. When patients did not want anything to eat it should not be forced upon them. To give food uncalled for was sure to produce nausea or tympanites. Dr. Smith knew no solid food that remained solid in the digestive tract except the pits of fruit, grape-skins, and the like, which were really not food. He considered it a mistake ever to let a typhoid fever patient get ravenously hungry. On the other hand, they must never be tempted to eat.' He had never regretted giving a typhoid fever patient only water, though he had regretted at times additions to the diet. He used chlorine water constantly in his wards because of its possible antiseptic effect, but he did not think that any form of treatment had much effect upon the disease. The most important element of any treatment was to treat the typhoid patient and not the typhoid fever.

Syringomyelia with Immense Cavity.—Dr. W. G. Spiller of Philadelphia, Pa., described a case of this disease with autopsy, in which the cavity was found to begin in the lower sacral region and extended all the way up through the spinal cord and the medulla and the pons, almost to the ventricle. This was considered to be only a well-marked case of the disease, and there was no suspicion before the autopsy of the extent of the cavity. The affection began when the patient was seventeen years old, and continued for nearly twenty years. There had been the usual symptoms, with dissociation of sensibility, with paralysis of the abducens nerve, and marked atrophy of one-half the tongue. There had been no further involvement of the cranial nerves. According to the literature of

syringomyelia, such an extensive cavity had been deemed impossible. Schlesinger had positively declared that it was impossible for the cavity to extend beyond the pons. It might involve the caudal portion of the pons, but no more. If there were other symptoms pointing to higher involvement, these must be considered as due to complications. It had been thought that a cavity in the medulla and the pons would be fatal before it would work much havoc in these all-important organs. These opinions were now seen to be wrong.

Sir THOMAS BARLOW said that this was an extremely instructive and interestingly exceptional case. He had never deemed it possible that a cavity should extend so high.

Dr. CAMPBELL MEYERS of Toronto said that Dr. Spiller's case represented a distinct advance in neurology.

Dr. Spiller, in closing the discussion, in answer to a question said that the sensation of pain, according to his idea, passed through the lateral columns of the cord through the tract of Gowers. He had found when lesions of these tracts were present that pain sensation had been lost, even though the feeling of touch was not impaired. He had observed that even the presence of miliary tubercles in the tracts of Gowers produced loss of pain sensation.

Philosophy and Psychasthenia.—Dr. J. J. PUTNAM of Boston said that the mental therapy of nervous and mental diseases was growing in favor, but that it was not yet enough studied. The popularity of Prof. Dubois' book, which showed how much could be accomplished, undoubtedly would prove very helpful in spreading precious knowledge in this matter. Philosophy and religion were two important factors for the treatment of these patients. There had been too much expression of disease in terms of physiology and chemistry. The spiritual side of man must be more recognized. Conscious states were the only true realities in existence, and must be recognized as such. Physicians must take up the study of philosophy as well as of natural science, if they would succeed with this class of patients. Ostwald's expression of consciousness in terms of physics, and Loeb's attempt in the same direction, were unfortunate steps backward.

Serum Treatment of Cerebrospinal Meningitis.—Dr. SIMON FLEXNER of New York said that there had been 4,000 cases of epidemic cerebrospinal meningitis in that city during the past two years, with a mortality of 75 per cent. A commission had been appointed to investigate its cause, and as a member of the commission he had come to certain conclusions. The affection was undoubtedly due to the diplococcus of Weichselbaum. This organism did not have a high pathogenicity, though when cultivated, if the microorganism was allowed to give up its toxins to a liquid, a rather virulent poison was obtained. To the microbe and its toxin the monkey was found to be very susceptible, and so a series of experiments were made in order to determine the possible efficiency of a serum for the disease. The monkey had very characteristic symptoms, such as retraction of the head, nystagmus, and a comatose condition, and other manifestations similar to those in human beings. The localization of the lesions was the same as in man. There was no haphazard distribution of the pathological changes; these were found on the posterior part of the cord and at the base of the skull. It was easy to produce the disease in an acute form in monkeys, but the chronic form was also found possible of induction after some experiment. It was found that the simultaneous injection of the serum and of the culture of the microbe produced no effect. If the serum were injected into the spinal cord even six hours after the diplococcus, the animal did not perish. Examination of the cord showed the microorganisms either dissolved or swallowed by phagocytes. It was found also that if large doses of the serum were given subcutaneously a beneficial effect was also secured. Not every case, however, responded to this form of treatment. Guinea pigs were protected as well as monkeys, but the observations on monkeys seemed most conclusive because of their nearer relationship to man. The question of preparing this serum in large quantities for man required that first it should be determined that horse serum, which was the only one that could be obtained in large quantities, was not detrimental to the cells of the spinal cord. Injections elsewhere had not proved so effective, and it was hoped that serum might be prepared for the direct treatment of the cord. In Germany there had also been an epidemic of the disease, and horses had been treated so as to produce the serum, which had been injected into the spinal canal, apparently without production of any serious harm. The full account of its efficiency had not yet been made up.

Mortality of Cerebrospinal Meningitis.—Dr. STEVENS of Glasgow said that twenty years ago there had been a slight epidemic of this disease in Scotland; twenty years before that it had been declared that the disease was so rare that it might be passed over in the text-books. During the present year, however, there had been an epidemic of nearly one hundred cases in Glasgow, with a mortality of about 75 per cent., and in about one-half of the cases the diplococcus of Weichselbaum had been found. No treatment seemed to do any good. He welcomed the discovery of a serum, then, and hoped that Prof. Flexnor's very judicial consideration of the subject would lead to the hoped-for results.

Dr. MCFARLAND of Albany, N. Y., said that Wessenhoffer, who had been appointed to investigate the epidemic of the disease which occurred in Germany, had decided that the germ usually entered through the pharynx. In treating the disease by injections into the spinal cord, one difficulty was to get sufficient fluid into the spinal canal to have an effect on the brain. There was a constriction of the canal just before it entered the brain which prevented any remedy from entering the skull in sufficient amount. The best treatment so far suggested was that of Lenhartz, who removed the fluid from the spinal canal in order to get rid of the toxins and bacteria.

Paracentesis of the Pericardium.—Dr. DOCK of Ann Arbor said that the fear of injury and the difficulty of diagnosis had kept pericarditis from being treated as scientifically as it should be. The diagnosis was easy in dry cases, or when from the nature of the disease pericarditis was anticipated and looked for carefully. It was always best if the heart action was interfered with to remove the fluid. There was some danger from wounding the heart, but in most cases such wounds seemed actually to stimulate. If nothing more would be permitted, at least puncture by an aspirating needle should be employed. A long needle should be used and inserted slowly. The lower the puncture was made the better. If there was dullness below the apex, then puncture should be made in the sixth interspace. The costoxiphoid space was an excellent place for puncture, and if this was negative the patient should be made to change position. As a rule, if the symptoms were serious, thorough evacuation of the pericardium should be secured. This required an operation, but it might be done under local anesthesia.

Gastric Neurasthenia.—Dr. HUGH A. MCCALLUM of London, Ont., said that there might be neurasthenia of every organ in the abdomen. Gastric neurasthenia there was, but also liver neurasthenia, kidney neurasthenia, and neurasthenia of other organs. The most prominent symptom of gastric neurasthenia was that the condition was worse when the stomach was empty. If the digestive symptoms were relieved by the bromides, then the condition was almost surely neurasthenic. If the dyspepsia was accompanied by much mental irritability, then it was almost surely neurotic. Every long-continued indigestion, presenting no vomiting of blood and no tumor, must be suspected to be gastric neurasthenia. The treatment consists in training the mind and the body. The mind must be kept off the

symptoms and exercise out of doors must be insisted on.

Dr. Putnam of Boston said that a typical stigma of gastric neurasthenia was the cardiopulmonary murmur. It occurred frequently in these cases and rarely in any others.

Dr. McPhedran of Toronto said that visceral ptosis not infrequently was at the bottom of serious, long-continued symptoms of indigestion, and must be carefully differentiated from the neurotic condition. As a rule, if the motility of stomach were maintained, then the patient was not seriously ill. No matter how much the organs might drop, if function continued all was well.

Dr. James J. Walsh of New York said that the term employed by Dr. McCallum seemed inadvisable. First, the set of symptoms called indigestion did not proceed entirely from the stomach, but from the whole digestive tract, and so should not be limited by the adjective gastric. As a matter of fact patients could get on very well without any gastric digestion if the stomach only moved the food on. Neurasthenia was only a long Greek word for nervous weakness, and as George Eliot said, we map out our ignorance in long Greek names. Patients hug the delusion that they have a special disease when they have only a set of nervous symptoms.

Dr. Calwell of Ontario said that not infrequently so-called nervous indigestion was associated with serious organic changes. Great care should be taken in such cases.

Preinsane Stage of Acute Mental Disease.—Dr. Campbell Meyers of Toronto pleaded for the recognition of the preinsane stage of insanity. Patients frequently exhibited diminished power of mental effort, lessened will power and memory, had changes of habits and of expression, were easily hurt, and became depressed long before the real mental disease developed. Treatment at this stage was most effective and so great care should be exercised in recognizing it. Slight symptoms must be looked for just as now they were in the preliminary stage of tuberculosis. In this way mental diseases would follow the lead of other branches of medical science.

SECTION ON OBSTETRICS.

Third Day—Thursday, August 23.

The Appendix Vermiformis in Relation to Pelvic Inflammation.—Dr. T. Arthur Helme of Manchester, England, read this paper, in which he condemned the indiscriminate removal of the appendix, when not the subject of disease, in laparotomies for pelvic disease, although admitting that in many women suffering from pelvic disease the appendix was found to be abnormal. He said it was quite common to find post-mortem evidence of appendicitis when no symptoms had been recognized during life, but it was important to remember that after a certain age very few organs in the body would pass an examination without being stamped as in a measure abnormal. He concluded that the association of appendicular and pelvic disease was due to contiguity rather than to continuity of structure, and that accidental positions of the appendix constituted an important factor in this association; that the appendix might be a frequent source of dysmenorrhea and mucocolitis; that the association of appendicitis and pelvic disease was the exception and not the rule; that the appendix was a highly differentiated structure, and played an important part in digestion; and that the routine removal of the organ when doing a laparotomy for pelvic disease was not justified.

Dr. D. Tod Gilliam of Columbus, Ohio, agreed with the essayist that there might be virulent disease of the pelvic organs without involvement of the appendix, and that the association occurred only by accidental contiguity.

Dr. A. L. Smith of Montreal believed that appendicitis and disease of the tubes were frequently coincident, though whether dependent one upon the other he was not quite certain. He thought that the same factor that predisposed to disease of the tubes predisposed to appendicitis also, namely, enormous increase in the number of colon bacilli.

Dr. Arnold Lea of Manchester, England, thought the profession owed a great debt of gratitude to the gynecologists who had been so indefatigable in removing the appendix, as Clark, Peterson, and Robb, who had shown that the appendix in these cases would not pass critical examination. He believed that in many cases of pain in the right iliac region in women attributed to the ovary, the trouble was really due to the appendix. He favored removing it in all cases where there was obscure pain in the right iliac region, otherwise in many cases a subsequent operation would have to be done.

Dr. J. H. Carstens of Detroit thought one could not lay down a law applicable to every case. There was, of course, increased danger in opening the intestinal tract, and the matter of time, too, was of importance. He believed that sufficient to the day was the evil thereof, and he always let the appendix alone unless there was evidence of disease. He did not, however, believe that the appendix had any physiological function.

Dr. J. A. Temple of Toronto said that Dr. Carstens had voiced his own feeling in the matter; he thought the indiscriminate removal of the appendix was unwarranted unless there was adhesion to the other organs, or inflammation.

Dr. Lockhart of Montreal thought that in the complication of appendicitis, with disease of the tubes, the appendix was not the offending organ, but became diseased secondarily. He did not believe its removal when the abdomen had been opened affected the prognosis at all, and he generally gave the patient the option of having it removed at the same time. He was not willing to believe that the appendix had anything to do with intestinal digestion.

Dr. Cuthbert Lockyer of London, Eng., spoke on the subject from the standpoint of the obstetrician, as he had had several cases of appendicitis complicating pregnancy. It had been questioned whether pregnancy did not predispose to appendicitis, though most authorities had believed that it did not. When it occurred as a complication of pregnancy it tended to a mild course, and was not fulminating because of the general hyperemia of the pelvis at such a time.

Dr. Holmes of Chatham, Ont., thought that pregnant women bore surgical operations very well, and he had removed the appendix from a woman four months pregnant in whom the abscess had ruptured into the peritoneal cavity. He believed the appendix should always be removed in doing a laparotomy upon a woman, because of the liability of trouble at the time of pregnancy.

Dr. Helme, in closing the discussion, said that he was gratified to know that his kinsmen on this side of the water were so in harmony with him in the matter. He deprecated, however, the practice of allowing the patient to decide whether or not the appendix should be removed at the operation. He believed in preserving any organ that might possibly be of use unless there was some definite disease.

Antistreptococcus Serum in Puerperal Septicemia.—Dr. Murdoch Cameron of Glasgow reported two cases of this affection, in both of which the serum had a very remarkable effect; the writer was convinced that without the serum treatment both patients would have died. He said he could also quote instances where it had failed, but there was no doubt in his mind that there were cases in which it was of great value.

The Gilliam Operation for Uterine Suspension.—Dr. D. Tod Gilliam of Columbus, Ohio, at the request of the President, described his method of operating, which he believed to be the simplest of all the operations devised for this purpose. An abdominal incision three or four inches in length was made in the median line, between the umbilicus and pubes, adhesions were broken up, and the fundus was brought forward. The broad ligament was picked up

with the finger and the round ligament then caught with the bullet forceps, a thread placed under it, and the ends brought out and secured to keep control of the ligament. The other ligament was sought for and secured in the same way. At a point one and a half inches from the pubes the peritoneum, muscle, and fascia were caught up with volsellum forceps and pinched together, the edges of the three layers being regular. The skin and superficial fat being drawn in the opposite direction with a sweep of the knife, the aponeurosis was laid bare and with the Cleveland ligature carrier; a stab wound was made about one inch from the edge of the abdominal incision; the jaws of the ligature carrier were brought into view and opened for the ligature; the thread on the round ligament was placed in the jaws of the carrier, which was then withdrawn, bringing with it the ligament. A catgut suture was then passed through it and back again, and tied.

Fourth Day—Friday, August 24.

Eclampsia.—Dr. Evans of Montreal read a paper on this subject, in which he recognized two forms of the disease, hepatic and renal, the former of which was the graver and gave less opportunity for general treatment. He believed that the degree of pulse tension was of greater importance from the standpoint of diagnosis and prognosis than anything else. Treatment must depend upon the type of the disease and the severity of symptoms, emptying of the uterus not being the sole or most urgent treatment. In the writer's opinion, chloral and chloroform were the sheet anchors in treatment, chloroform not to be used, however, during the convulsions. Opium or morphine, while it undoubtedly acted favorably on the nervous system, interfered with the processes of elimination and prolonged the coma. Veratrum viride relieved the tension, but at too great a cost, and should be very carefully used. Operative treatment depended upon condition of the os and viability of the child. Decapsulation might be employed in cases of anuria.

Dr. K. C. McIlwraith of Toronto was glad to hear so much stress laid upon the matter of pulse tension as a means of ascertaining the state of the patient. In the preeclamptic state the pulse tension was the best indicator of danger of convulsion. Subsequent to convulsion, the tension fell, and before a convulsion rose again. A feeble and low-tension pulse from the start was a symptom of great gravity. He referred to treatment with thyroid extract, as instituted by Nicholson of Edinburgh, and thought it of some service as increasing the flow of urine; he thought, however, that it tended to cause postpartum hemorrhage.

Dr. H. L. Reddy of Montreal believed eclampsia preventable as a general rule, when the patient was properly examined and cared for. In one case in which sudden blindness had occurred, he had done a lumbar puncture, removing about an ounce of fluid, with good results and recovery. It was his practice to empty the uterus as rapidly as possible, and he believed such treatment to be almost invariably successful. Had had no success with thyroid. He thought in case the os was hard and the cervix long a cesarean section was justifiable.

Dr. J. A. Temple of Toronto said that his experience with blood-letting in suitable cases had been most excellent. He used chloral, but had more faith in morphine, given in large doses hypodermically. When the os was hard and unyielding he would not resort to forcible delivery.

Influence of Lutean Secretion on Uterine Movements.—Dr. J. M. Kirkness of Edinburgh read this paper. Fresh extracts of the corpus luteum were used, and in the living subjects the material was injected into the external jugular vein. Cats, rats, and guinea pigs were used. It was also tried in strips of uterine muscle. In all cases rhythmic contractions were produced. The tracings of the movements were diagrammatically illustrated by a series of charts. Nuclear proteids from the ovary and other organs were used as controls. With strips of uterus and with the uterus *in situ* the same results were obtained. Alcoholic and ethereal extracts did not act as well as the aqueous extracts.

Ectopic Gestation.—Dr. J. F. W. Ross of Toronto read this paper. The writer drew his conclusions from a study of many cases. In 1,500 laparotomies, 70 had been done for ectopic gestation. The mortality was 8.4 per cent., with no deaths in the last 36 cases. In five the operation was performed twice. In one case there was coincident intrauterine and extrauterine gestation. Average age, thirty-two. In 74, or over 75 per cent. of cases, there was amenorrhea. In 10, irregular menstruation. In only 5 was discharge of decidual membrane noted. There was history of one or two missed periods, colicky pains, some discharge of blood, and slight enlargement of uterus. In 90 per cent. of the cases there was sudden severe pain, with rupture of tube, there was a dark, bloody vaginal discharge, and partial or complete collapse. The conjunctiva showed the profound anemia earlier than did the lips. In 80 per cent. of the cases an irregular mass was discovered to one side and behind the uterus. In operating, the abdominal route was followed in all cases. Many of those operated upon had subsequent normal pregnancies. Treatment by operation was undoubtedly the safest, and should be performed as soon as the diagnosis was made; if this was properly done by a skilled operator the mortality was very low. He made it a rule to remove the blood clots thoroughly from the cavity; even patients who were pulseless on the table were washed out as thoroughly as those who had not collapsed. He believed the ovary should not be removed if in a healthy condition, nor should the other tube. Drainage should not be employed unless necessary, but no débris should be left behind.

Dr. Murdoch Cameron of Glasgow read a paper on this subject, dealing with it from a practical point of view. He thought that accuracy of diagnosis in experienced hands was now such that delay in operating was not to be considered. In most cases early signs of pregnancy were present, and a mass could be made out on one side of the uterus. The pain of rupture was generally followed by collapse. It was of first importance that the condition be recognized early. Where there was history of irregular menstruation with signs of pregnancy, the condition was to be suspected. When rupture occurred the symptoms were so alarming as not to be mistaken. He advocated drainage with a glass tube after removal of clots. He preferred the abdominal route rather than the vaginal. He exhibited photographs of twin tubal pregnancy, with decidual cells in the other tube.

Dr. Dorsett of St. Louis had operated in fifty-four cases, and in the last case the usual symptoms were not present, but the cul-de-sac of Douglas was found bulging at the introitus. There was no sudden pain or discharge. He expressed a preference for the abdominal operation, as one could not tell just where the placenta might be located and attached.

Dr. Giles of London, Eng., did not agree with previous speakers that the diagnosis was a simple matter; sometimes one ran across a case entirely by accident. One patient had consulted him to know if there was any reason why she should not become pregnant; on examining her he found a slight swelling on the left side, and as she had missed one or two periods he suspected extrauterine pregnancy, which proved to be correct. Another patient had been under treatment for gastric ulcer and perforation of the ulcer had been diagnosed, when a tubal pregnancy ruptured. He regarded every case of extrauterine pregnancy as one of malignant tumor, to be operated upon at once.

Dr. John Edgar of Glasgow would not advise removal of the other tube, as patients often became subsequently preg-

nant in the normal way. He believed there was a class of cases in which the vaginal operation was of advantage; those in which there was a so-called hematocele, with bulging down of the vaginal vault.

Dr. Louis S. McMurtry of Louisville believed there was now perfect agreement among surgeons of all countries that instant operation was necessary.

Dr. F. A. L. Lockhart of Montreal said that amenorrhea was not necessarily a symptom. He had had forty cases, and was quite positive that a large minority of them did not have that symptom. In a certain percentage of the cases diagnosis had been made by the irregularity of menstruation and the appearance of an increasing mass in one fornix. He preferred abdominal section, seeing no reason for opening the vagina and groping around in the dark. He would not remove the other tube.

Dr. F. S. Webster of Toronto did not think there should be any trouble in the diagnosis of tubal pregnancy. In his experience, however, the symptom of amenorrhea had not been the rule; there was irregular menstruation. He thought the interference with menstruation depended upon the location; if the ovum was near the fimbriated extremity menstruation was not likely to be interfered with. He deprecated the custom of surgeons speaking of vaginal operating as groping in the dark; one could see in this operation perfectly well what was being done, and he thought that in many instances it was the preferable route. He believed that 99 per cent. of pelvic diseases could be handled through the vagina.

SECTION ON SURGERY.

Fourth Day—Friday, August 24, 1906.

Perineal Stop for Retaining the Catheter After External Urethrotomy.—Mr. C. Hamilton Whiteford of Plymouth showed this instrument, which he had devised, for keeping a rubber catheter in the bladder after external urethrotomies.

Surgical Relations of the Parathyroid Gland.—Dr. W. G. MacCallum of Baltimore said that it was well known that the parathyroid gland was very important in connection with the untoward results following operative interference upon the thyroid gland. Also that parathyroid gland had a close connection with tetany of gastric origin, a point that had been particularly observed by medical men. But in the hands of many surgeons the precise relationship of this gland with the surrounding tissues seemed very uncertain. Although the effects of extirpation of the gland was clear enough, it was very important to elucidate the nature and relationship of the thyroid gland. When surgeons removed the entire gland they were surprised to find the appearance of severe phenomena of a convulsive nature. It was only after observations upon the parathyroid gland that attention could be directed to its relation to tetany. It had been clearly proven that tetany, and convulsive features, and acute reactions after the complete removal of the thyroid, were due, not to the removal of the thyroid alone, but to the removal of the parathyroids. It was at once recognized that it was dangerous to remove the whole thyroid gland; so they limited themselves to the removal of a portion only. Dogs, cats, monkeys, and other animals had been experimented with; after complete removal of the thyroid, convulsive movements of the muscles of the body became most marked. Some looked upon tetany as some form of autointoxication, and this conception was supported by the fact that one might bleed an animal in tetany and infuse saline solution into the veins, and cure this tetany for a short time, probably one or two days. But if one strove to produce tetany by using the blood of an animal the subject of tetany, the results would be disappointing. As to the nature and origin of the toxic substance, not much was known. Stagnation of material in the stomach seemed to be one cause of tetany. One man had been observed in the hospital with symptoms of tetany, having attacks lasting one or two days, and he had an enormously dilated stomach. While in the hospital he ate quantities of food; this was followed by the most violent attacks of tetany and death. His death was probably due to absorption of poisonous material from the stagnated substances in the stomach. In all probability the parathyroid secretion given out normally was not sufficient to neutralize all the toxins in the man's stomach. Whatever the source of the poison, it affected the central nervous system. This poison was somewhat analogous to the tetanus toxin in this respect. Dr. MacCallum then considered the mode of action of the parathyroids, in neutralizing the poison, as well as parathyroid extract in experimental tetany. The most fatal form of tetany was produced in dogs, and when they were apparently moribund they were given parathyroid extract, which was followed by recovery. It was found possible to repeat this two or three times, using an emulsion of ox parathyroid, recovery being prompt and lasting for a long time. The conclusions reached were that life could be maintained if large quantities of parathyroid material were used. He reported the case of a woman who had one-half an enlarged thyroid removed because this mass compressed the trachea. Some years later the other half became enlarged, and something had to be done in order to save her life. Operation was done, avoiding injury to the parathyroid. Yet when a piece of the removed material was examined microscopically, parathyroid gland was found. After a day or two she began to show signs of thyroid insufficiency, a feeling of distress in the thorax, arms, and legs, but without any convulsive seizures. The administration of parathyroid gland from the ox gave her complete relief, and at once. If this treatment was stopped, even for a short time, the symptoms reappeared. She was still taking the parathyroid material and was enjoying good health, taking three or four glands a day. The parathyroid gland of an ox was easily obtained from the slaughter-house. In studying the topography of the parathyroid glands, sixty-five or seventy cadavers were used, and it was noted that the glands lay in loose areolar tissue, in which there was much fat, and the number of glands found was in direct proportion to the persistency with which they were searched for. One of the most characteristic features about them was their consistency. They were of a yellowish fawn color, contained many blood-vessels, which could be seen running over their surface, which was smooth and glistening. Four glands were usually regarded as the proper number, two in apposition with each lobe of the thyroid. In nine cases of exophthalmic goiter the parathyroids were carefully examined and found to be perfectly normal, and, therefore, there was nothing, in his opinion, to support the theory that the parathyroids had anything to do with the development of this disease.

Sir Victor Horsley of London said the observation just made by Dr. MacCallum regarding exophthalmic goiter was of fundamental importance. This disease was not in any sense a perversion of physiological activity of the parathyroids; it was, on the contrary, a perversion of the normal secretion of the thyroid gland. Sir Victor said he had been struck for months in removing goiters that there was a distinct class of neoplasms exactly resembling thyroid tissue. He agreed with Dr. MacCallum that when they extirpated what appeared to be isolated goiter it was their duty to be very careful in the inspection of its site; if they found that this isolated tumor was in the neighborhood of the hilum of the gland and along its posterior border, it was not at all improbable that they would find the tumor resembling the parathyroid gland. These tumors, he believed, should be extirpated, but with exceeding care. Often they ran a course of a very malignant character.

(To be concluded.)

AMERICAN ACADEMY OF MEDICINE.

Thirty-first Annual Meeting, Held in Boston on June 2 and 4, 1906.

THE PRESIDENT, DR. DONLY C. HAWLEY OF BURLINGTON, VT., IN THE CHAIR.

Maturation and Senility.—Dr. A. L. BENEDICT of Buffalo referred to the different rates of maturation and senescense in animals and human beings, and spoke also of cretinism and geromorphism. The variation of death rate and longevity for the sexes received full consideration. Other factors considered were physical definition of senility; diseases characteristic of extremes of life; essential identity of apparently widely different diseases, as apoplexy and diabetes; difference of diseases called by the same name, when occurring at early and late age. Inquiry was made whether old age was a cause of death; whether senility was distinct from the sum of cumulative pathological processes accidentally, but practically inevitably encountered; whether a given degree of physical senility, as ordinarily estimated, by years, was characterized by a corresponding degree of histological degeneration. Capacity for mental work in relation to maturity and senility was considered, and inquiry was made whether or not it depended on previous intellectual acquisition or exhaustion, or upon essentially physical conditions of the brain.

Dr. J. W. GROSVENOR asked the author of the paper to give a definition of the term "senility." Personally he had been unable to find a good definition of the word.

Dr. J. T. SEARCY thought the natural processes of senility were illustrated in the process of the mental development of the person from childhood to old age. The senescense of a man, he thought, began with his acquiring ability; how soon it set in, and how soon the stage of senescence called dotage began, and how it differed in individual persons, were regarded as interesting questions. Some men of fifty were as far advanced in the failure of mental ability as other men at eighty.

Dr. CASEY A. WOOD of Chicago remarked that one of the processes seen with advancing age was the change in the smaller vessels, and only in the fundus of the eye could this be actually demonstrated. Some of the organic changes in the eye took place at the twenty-fifth year of age. In almost all persons past the fiftieth year these changes were present.

Dr. LEARTUS CONNOR spoke of the difficulty of differentiating the natural changes in the eye due to advancing age and processes of disease.

Dr. WOODS HUTCHINSON of Redlands, Cal., thought the tendency of the Anglo-Saxon race was to cling to life, rather than to use every endeavor to make the most of it, being willing for old age to come as rapidly as it would.

Dr. A. H. TUTTLE spoke of his studies of the life history of small sea animals, in his observation of the development of the eggs in the sea water and under artificial means. According to change in environment there was marked change in the development of the animals and the production of monstrosities of all kinds. These changes he felt had a certain significance in connection with the development of malignant disease, and especially of cancer. The changes of senility also he felt had a certain bearing upon the subject.

Dr. JAMES A. SPALDING of Portland, Me., related an instance in which there was a difference of fifty-eight years and ten months between the age of the first child of a given father and the last. He thought the study of the eye in old age offered a clew to the other conditions going on in the human frame, and therefore of interest in the study of senility. When one ceased to be useful and his friends had all gone before, he thought it scarcely worth while to study to prolong life.

Dr. WOODS HUTCHINSON thought the work of the profession was to make life more vigorous during its existence, rather than to make it last longer. He would drive the machine as fast as possible while it lasted, and then to the scrap heap.

Dr. FREDERIC H. GERRISH of Portland, Me., thought that for every one old age was ever a receding point. In his early teaching career he had determined that when he reached the age of sixty, if then teaching, he would resign, believing that schools were injured by retaining in the faculty men who had passed their prime. He thought it of immense practical value that young men likely to hold teaching positions should recognize the fact that they were not good judges of their own capacities when they got into the fifties and sixties.

Dr. WILLIAM R. WHITE of Providence, R. I., thought Dr. Hutchinson's theory would not work out satisfactorily in practice. The machines, instead of going readily to the scrap heap, were converted into neurasthenics, hemiplegics, and other variously affected persons filling the asylums and institutions.

Manual Training for Medical Students and Instruction in the Principles of Psychotheraphy.—Dr. GERSHOM H. HILL of Des Moines, Ia., in this paper referred to the present-day tendency in business and education toward civilization. While believing that medical education should be technical, he also believed that it should be well balanced and as general as ever before. Some livelihoods to-day were gained with brains rather than with muscle, and life was indoors and sedentary, neurotic conditions, nervous diseases, and psychopathic ailments were very frequent. While drugs and surgical operations could cure many diseases, there were many patients suffering from impaired physical or mental ability whose condition was said to be functional. Here it had been demonstrated that great benefit had been secured from baths, massage, osteopathic manipulation, and the application of electricity. Therefore it was his opinion that medical students and internes should be taught more completely how to apply these methods, in order that they might instruct nurses and patients. Such instruction was regarded as important as that for the application of a bandage. Neurasthenia, hypochondria, hysteria, and melancholia in addition to other methods of treatment required psychotherapeutic management. These conditions were regarded as common and mixed, and demanded careful investigation. To treat successfully, the physician must get the confidence and the control of such patients, consequently it would seem worth while for the medical college to give more attention to the principles and the art of psychotherapy.

The Friendship of Drs. Nathan Smith and Lyman Spalding.—Dr. JAMES A. SPALDING of Portland, Me., stated that everybody acquainted with medical history had heard of Dr. Nathan Smith, the founder of three medical schools. Few knew anything about Dr. Lyman Spalding, colaborer with Smith at Dartmouth Medical School, pioneer in smallpox vaccination tests in the United States, lecturer in Fairfield Medical School, and the originator of the U. S. Pharmacopœia. This paper, by a grandson of Dr. Lyman Spalding, drew a brief sketch of his life, showed the influence exercised upon his early career by the presence in the same town (Cornish, N. H.) of Dr. Smith, and closed with the reading of unpublished letters from Dr. Smith, exhibiting close business, medical, and social friendship between the two men during the term of their mutual lives. The letters quoted from were recently discovered and embraced the period between 1796 and 1819.

Heredity and Environment as Causes of Delinquency and Crime.—Dr. DONLY C. HAWLEY of Burlington, Vt., in his Presidential Address with this title, stated that while scientists admitted the heredity of physical and psychological peculiarities, the weight of their testimony was to the effect that this phenomenon, while frequent, was not constant. The influences especially opposed to heredity were given as: (1) Education; (2) the instinct of initiation; (3)

the innovative force of individual initiative. In studying heredity a prominent place must be given to the inheritance of acquired characters, which were constantly changing through the modifying influences of environment. While a thorough knowledge of the biological law of heredity was of vital importance there was need for a wider recognition of the tendency of Nature to "throw back" to the normal or average. This principle of reversion, it was said, had been called "the most cheering fact met with in the study of heredity." Disease was stated to be not so much an inheritance as a tendency to disease. The tendency of the delinquent and the criminal, so far as inheritance was concerned, was to repeat the sins of the fathers under like unhealthful and perverse conditions. Criminals might in some instances inherit direct tendencies to crime. The views of such extremists as Lombroso were questioned, and especially in regard to the criminal classes should not be accepted without challenge until better evidence could be adduced to show that the defects were a positive inheritance rather than a resultant of defective development, due to bad environing circumstances, drunkenness, etc. To prevent habitual crime there must be the saving of the young offender from the acquisition of fixed habits of crime, largely the result of degenerate social conditions. Experience in the rescue of the young from conditions of delinquency and depravity seemed to point to the fact that heredity had been overestimated as a cause of these conditions, and that bad environment was oftenest the cause of abnormal physical, mental, and moral growth. Future effort in the prevention of delinquency and criminology should be directed to the proper culture of the child. To let no child grow up a criminal should be the aim of the State, the school, the Church, and every good citizen. While the full accomplishment of this end might not be realized, the belief was entertained that factors in the production of delinquency and crime in the young might be greatly minimized.

How May the Medical and Teaching Professions Cooperate to Improve the Moral, Mental, and Physical Condition of the Young.—Dr. S. A. Knopf of New York City made the opening address in this symposium. (See page 401.)

The Duty of the Family Physician in Regard to the Proper Mental and Physical Development of the Children Under His Care.—Dr. Dudley A. Sargent of Harvard University in this paper referred to the lessened number of young men adopting medicine as a profession. To realize the highest ideal of medical science, not only was it necessary to know the origin and nature of disease, but to know intimately the man, woman, or child to be treated. In the knowledge of human nature it was asserted that the ignorant quack often surpassed the learned physician. The knowledge of the self-limitation of most diseases, provided the individual has sufficient resistance, was said to have placed new responsibilities upon the medical profession, and both the community and the physician should be educated to these new responsibilities. In the public schools he would have instituted the thorough physical examination of children at least once a year and subsequent daily inspection, which practice should be extended to factories and establishments employing many persons. The remarkable success of the Health Education League of Boston was mentioned as illustrative of the possibilities of such a movement. In the light of the present knowledge of the cause of moral, mental, and physical disease, the author believed that there was a much greater necessity for the physician to make periodical professional calls than for the pastor. Before the physician, however, could assume this function, the public must realize the value of preventive medicine and make its practice possible by an assured income to the physician. There should be common sense talks with prospective fathers and mothers; and persons anticipating marriage, and known to the physician to be mentally, physically, and temperamentally unfitted for each other, Dr. Sargent believed should be so informed in the proper manner. Instruction upon the arrival of the first infant was regarded as a duty of the physician, and this oversight should continue through the first seven or eight years of the child's development. The matter of school furniture deformities was considered. At the approach of puberty the children should be talked with by the physician concerning the mysteries of the generative functions, a natural approach to which subject was suggested to be through the nature studies of plants and animals. Up to the age of puberty he thought the mental and physical activities of the boy and girl should be the same; afterward, much of this activity should be essentially different. Concerning venereal diseases, he would have the family physician speak very plainly to both sexes.

The Sanitary Regulation of the Schoolroom with Reference to Vision.—Dr. Casey A. Wood of Chicago in this paper said that were the ocular apparatus of the average child by nature adapted to the amount and kind of work he was ordinarily called upon to do, the consideration of school hygiene would be unnecessary. In considering the illumination of the schoolroom, reference was made to the dictum of Risley, that at any hour of the day in any season of the year it should be possible to read the finest (diamond) print in any part of the schoolroom. He regretted that this dictum was often overlooked. Continual agitation of the importance of illumination in schoolrooms had led to the demand in Chicago for better built and better lighted schoolhouses. Where artificial light was found to be unavoidable, the light should resemble as nearly as possible diffuse sunlight, and should shine upon the work to be done rather than into the eyes of the pupil. While electric light was said to be preferable to gas or kerosene, it was also regarded as capable of greater harm to the vision, and much more likely to produce eyestrain unless judiciously arranged.

The Training of the Mentally and Morally Defective Child.—Dr. Maximilian P. E. Groszmann, who presented this paper, distinguished sharply between the lower grades of mental and moral defectiveness, such as would demand lifelong segregation, and that class of children whose defects were less grave in character, and who were, therefore, trainable. Attention was called to defects in the sense organs, nasal troubles, catarrhs, digestive disturbances, and adenoid vegetations as frequent sources of mental and moral derangement. A fundamental requirement in the training of defective children was stated to be a systematic physical regimen adjusted minutely to the individual case. Stress was laid upon the value of rhythmical movements. There should be careful observation of nutrition and diet, and such tonic treatment as was required. The secret of training the mentally and morally defective was said to consist merely in understanding the causes and conditions of the individual defects and trying to develop the child within his own limits, stimulating the weak powers for good and crowding out the lower impulses.

The Advantages or Disadvantages of Coeducation After the Age of Twelve Years.—Dr. G. Stanley Hall, President of Clark University, suggested the disadvantages of coeducation after the age of twelve; first, by the fact that it violated a custom so universal that it seemed to express a fundamental human instinct. In all ages of history and in all stages of civilization, with few exceptions, the dawn of puberty was marked by segregation of the sexes, especially for every purpose that could be called educational. While immemorial customs were not of themselves decisive, it was thought that this consensus of the race at the very least threw the burden of proof upon those who would defy it. In the second place, the arguments against coeducation from custom were reinforced by many more or less systematic observations of children themselves. It was shown that in the family the age of twelve found boys and girls more or less segregated. This was marked in the matter of their amusements, in their choice

of reading and of work. Reference was made to recent laboratory tests on children to ascertain sexual differences, by which it had been shown that sex distinctions pervaded every sense and function. One prominent result of the investigations was that in all the perceptive, passive afferent powers, girls on the whole were fully equal and often excelled boys, and even at twelve were nearer to their full maturity of intellect than boys. They were already well on in the subtle acumen of tact, taste, appreciation, and intuitive insight which made the pubescent girl forever appear to be such a prodigy to slower ripening man.

Dr. William T. Smith of Dartmouth College said that the most obvious advantage of coeducation was economy. This principle of economy controlled in the making of new schools and colleges in the West, which were almost wholly coeducational. Another advantage mentioned was that the boys, being in possession of the educational treasures and traditions of the past, the best could not be secured by the girls at present unless shared with them. Other arguments for and against coeducation were given concerning the physical health of the girls; the mental needs of the girls; the character development of both sexes. The danger to the health of the girls in coeducation the author concluded was greatly exaggerated. With proper care he believed that they more frequently improved in health. In the bearing of coeducation on the mental needs of girls, it was argued that the girls averaged better work in the regular college curricula than the boys. The disciplinary course which was good for boys he thought was equally adapted to the girls. Concerning coeducation in its effects on character development, it was said that women exerted a refining influence on men, and association with men in study gave steadiness and continuity to the work of the women Nature had ordained that with sex should go a separateness in daily activities. This obtained in business, in scientific, literary, and civic work, and in the industries. The exceptions to this separateness were said to be the family relations and those social activities whose impulse lay in sex consciousness. Daily competitive association of the sexes in college was regarded as not strictly "natural."

The Dangerous Influence of Overtaxing the Girl's Mind, Particularly at the Age of Puberty.—Dr. Augustus P. Clarke of Cambridge mentioned as a potential influence in the overtaxing of the girl's mind her great conscientiousness in the acquisition of knowledge. He advised against the forcing of girls of mediocre powers in work for which they have no special desire. The conventionalities of society might also react unfavorably. The offering of prizes was shown to be not without danger to the young girl. The hope was entertained that by the influences of better hygiene, the selection of plainer diet, by the help of gynecic medical science, the avoidance of unnecessary social demands, the dangerous influences encountered at the age of puberty might be counteracted.

Dr. L. Duncan Bulkley of New York, in presenting a paper on the same subject, stated that the human frame was but a machine, marvelous in its powers of self-sustaining and self-reproduction, and showed its liability to derangement. Through infancy and childhood had been well guarded, the age of puberty had not been seriously enough considered and guarded. From what was observed of the effect of mental and nervous strain on the digestive and menstrual functions at all times, he submitted that for physiological reasons it would be expected that oxertaxing the girl's mind at this time would naturally result in serious consequences. He showed that clinical experience abundantly confirmed this, stating that he had seen many girls, often with trivial skin affections, who on close study were found to be in a lamentable state of ill health, all dating from mental or nervous overstrain in schools or colleges. He believed that many with unusual powers of health, or with most careful regulation of the whole manner of life and with wise direction of the mental strain, could attain high educational conditions, but that far more suffered in their physical state and were permanently harmed than commonly supposed. He believed that a great responsibility rested upon family physicians and specialists who chanced to see these patients, in early recognizing and properly treating the departures from perfect health which continually occurred in girls being educated, and in giving repeated warnings regarding the many elements causing derangement to health. Of these he instanced study too soon before or after meals or before bedtime, insufficient or irregular hours of sleep, erroneous methods of eating and drinking, eating between meals, etc. He believed that about the time of menstruation there should be less mental and physical exercise and more rest.

Dr. Edward Cowles of Waverly said that much of the overtaxing was due to the failure of the home and school to cooperate. There was said to be a wide variation of medical views on the relation of disordered reproductive processes to mental disease. The solution of the problems he believed would be more certainly attained by keeping in mind the fact that the reproductive processes as a whole and in all their contributing parts were essentially physiological. A physiological process could not of itself be regarded as a cause of disease. Interference with such processes might result in symptoms called pathological. It was pointed out that one of the notable dangers arose when the young girl was ignorant of the menstrual disorders, therefore careful and timely instruction should be imparted concerning the menstrual function. In conclusion he emphasized the importance of the intelligent care of young girls, teaching them that there should be a healthy exercise of mind and body for the maintenance of good health, and warning against the dangers resulting from overtaxing the mind as well as the body.

Dr. G. Stanley Hall, President of Clark University, referred to the widespread increase of interest in matters of the relation between disease, sex, and procreation. He alluded to the formation of a sociological society, the main theme of which was to study the functions of family, church, and state, and to assist in endowing future generations with the maximum of that most precious wealth, heredity, on the principle of Huxley, who had said that one ounce of heredity is worth a ton of education and environment combined. Dr. Hall spoke of the appalling results of gonorrhea and syphilis, and of the great necessity of teaching these established truths to children. They should be talked to before puberty concerning these truths in a plain, direct, and personal manner. Heredity was suggested as a suitable beginning topic, showing that all that was good in the individual was due to generations passed, and that the future depended upon the restraints and the sentiment of honor among young men and young women.

Dr. George Van Ness Dearborn said that in Tufts Medical College he taught the process of reproduction in mixed classes and could say that there was absolutely no sign of embarrassment in discussing the most technical matters. He regarded it as false modesty and prudery not to give to the public the truths concerning gonorrhea and syphilis.

Dr. J. Madison Taylor spoke of the desirability of impressing upon school boards the necessity of teaching the fundamental principles of pure science. While appreciating the difficulties of bringing such a proposition before the average school board, he felt that it would be a helpful factor in the education of children.

Mr. Safford of Beverly thought it not alone the conservatism of school boards which hindered the teaching of sexual matters in the schools, but that of the community as well. He thought much might be done by the medical inspector, and suggested as desirable compulsory physical examination, including the condition of the sexual organs.

Dr. Helen C. Putnam referred in particular to the influence of the schools on health, and their teaching of the origin of life. Her personal experience among pupils was

that ill health among pupils was far less often due to school than to the home; far less due to mental overwork than to violation of known principles in dietetics, sleep, and exercise. Out of 1,000 records of girl students, only nine seemed to need reduction of mental work (acute illnesses not included). Education for women, so-called "higher education," along certain lines was never more needed in the world's history. It was only part of woman's mission to bear healthy children; equally important was it that they be well reared. Above all, woman needed more knowledge of household and public sanitation and of personal hygiene; knowledge of the physics, chemistry, and biology of daily living. In a few of the schools where so-called "Domestic Science" was taught, along with the discussion of diphtheria and other contagious diseases, syphilis and gonorrhea were mentioned, not discriminating between the morals of victims of any of the contagious diseases. Pupils were told how and why contagions were to be avoided. Reference was made to the teaching of reproduction in a few of the schools visited, showing that the origin of life could be wholesomely, intelligently, and most profitably taught in public schools by competent instructors. One method was as follows: The pupils were boys and girls from twelve to sixteen years old. The instructor was a biologist ready for a Ph.D. degree. First the multiplication of amebas and other unicellular animals was studied; next multicellular animals through invertebrates, tracing simply the evolution of reproductive organs parallel with the evolution of the digestive and circulatory systems. Then reproduction was traced through vertebrates, including mammals. The children followed the teaching in absolute simplicity and purity of thought. No evil was taught, but the truths of normal life. A talk on human sex relations based on Dr. Prince A. Morrow's "Social Diseases and Marriage," closed the year's work. There was no shock to conventionalities, because the instruction began simply and developed gradually according to the evolutionary method of Nature. Dr. Putnam at the end of the school year had realized as never before what plastic material little children were in the hands of teachers. Their development was so largely according to the guidance and example of adults that profound regret must be felt to find in so many cases personal responsibilities so indifferently discharged.

Officers.—The following election of officers was announced: *President,* Dr. Casey A. Wood of Chicago; *Vice-Presidents,* Drs. Wm. L. Estes of South Bethlehem, Pa.; James A. Spalding of Portland, Me.; Woods Hutchinson of Redlands, Cal., and Guy Hinsdale of Hot Springs, Va.; *Secretary,* Dr. Charles McIntire of Easton, Pa.; *Assistant Secretary,* Dr. Alex. R. Craig.

The committee to investigate the teaching of hygiene in public schools, appointed in 1903, presented the fourth section of its report—a report of present methods of teaching hygiene in departments of physical training and of medical inspection. Owing to the crowded program and at the request of the chairman, it was read only by title and will be published in the Bulletin of the Academy. The committee consists of Dr. Helen C. Putnam of Providence, Dr. Edward Jackson of Denver, Dr. George G. Groff of Lewisburg. It has published a compilation of the existing laws requiring the teaching of physiology and hygiene, Bulletin, April, 1904; a study of those forty-six laws and a study of seventy-three text-books (and revisions) written since 1882, Bulletin, June, 1905; and a report on the present teaching of hygiene in departments of "domestic science" and of "nature study," Bulletin, April, 1906.

Dr. F. Trendelenburg of Leipsic was elected an honorary member of the Academy.

The birth rate for St. George's-in-the-East, London, the headquarters of the alien invasion, is at the rate of 60.8 per 1,000. This is the highest birth rate ever recorded in England.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Regular Meeting, Held April 17, 1906.

Dr. William F. Campbell in the Chair.

How Can the Physician and Layman Accomplish Most in the Fight Against Tuberculosis?—Dr. S. A. Knopf of New York read this paper. He said that the antituberculosis movement did not promise any financial gain to physicians. On the part of the latter it was entirely unselfish. It had come to be recognized that the medical profession owed in this campaign certain distinct duties to the public at large. The first of these was concerned with making an early diagnosis of the disease. The earlier the diagnosis the greater were the chances of cure and the less the chances of infecting others. The other duties were concerned with the method of treating the disease. It was the business of the physician to teach the masses that tuberculosis is preeminently a curable and preventable disease. The speaker advocated a regular, periodic physical examination of every member of the family, in order that all incipient cases might be detected in time. It was the physician's duty to interest all classes in the crusade against the disease. The rich were to be interested in its social aspects, and were urged to divert some of their wealth in order to promote the treatment of the tuberculous poor. The duty of the physician was also to teach the laity that tuberculosis is a chronic, infectious, and curable disease. It could be disseminated in four ways: by inhalation, ingestion, inoculation, and drop infection. The prevention of inhalation tuberculosis required the simple law that no individual should expectorate except into a proper receptacle. The ordinary spittoon was too small; the ordinary spitter did not know how to hit it. The elevated spittoon, of which the speaker demonstrated a drawing, was far more practical. Having a cover, it was more cleanly than the ordinary cuspidor. What was to be advised for street use? The consumptive in public places and in street cars, who by obeying the law made use of spit cups which he carried, was apt to be treated like an outcast. It was the duty of the public, in the presence of the consumptive who was obeying the law, to treat him with the utmost consideration. Phthisiophobia was a disease that ought to be strenuously combated. One was to distinguish between public and private phthisiophobia. The former was the more reprehensible. An example of it was furnished by Brooklyn, when a court injunction was obtained restraining the Health Department from establishing a public tuberculosis dispensary. The least conspicuous and at the same time most effective receptacles for sputum for street use, were square pieces of muslin. Ingestion tuberculosis was to be avoided by proper cooking of various articles of food. Inoculation tuberculosis was next discussed. The porcelain spittoon, with its rough or cracked edges, was a potent means of the dissemination of this form of the disease, among those whose duty it was to clean the spittoons. If a servant was cut while performing this duty, a copious bleeding of the wound was sufficient to prevent the infection. Drop infection was the result of unguarded mouth and nose during the act of coughing and sneezing. There was no such thing as a dry cough. The public were to be convinced that hereditary consumption did not exist. Postnatal infection accounted for the existence of tuberculosis in children. Mothers suffering from consumption carried their infants at the breast and coughed over them and kissed them. The act of crawling on the floor also favored the infection of children. The school children were to help in the fight against tuberculosis. The speaker had already issued his alphabet for the instruction of school children in the prevention of tuberculosis. Next to the obligation of fathers and mothers in the instruction of the children came that of the teacher. After these came the preacher. The necessity for proper ventilation of churches and Sunday schools was dwelt upon. The teacher was to emphasize the importance of deep breathing. Out-

door recitations were urged. Every school was to have a school physician. It was important that every child should get enough time to sleep. Many a little one was driven out of bed too early in the morning. Swimming lessons were to be taught. All classes and occupations might help in the fight against tuberculosis. The owners of department stores and of factories could provide sanitary quarters, reasonable hours for meals, and proper opportunities for the resting of their employees. What were the duties with respect to the care of the tuberculous? The most important was the use of God's unstinted air twenty-four hours out of twenty-four. Next were the use of plenty of water, both inside and outside. All these were to be under the constant watchful eyes of conscientious physicians who would occasionally help along with a little medicine. There was no specific, no climate, no special medicines. The consumptive was never helped or cured by alcohol; on the other hand alcoholism was one of the most powerful predisposing causes of tuberculosis. More alcohol was sold in the form of patent medicines than over the bar. Jacobi calculated that $200,000,000 was realized annually from the sale of patent medicines. Many of these were popular remedies with consumptives. It was sad to see venerable clergymen lending their names in the advertisement of patent medicines. It was theirs to save souls, and to leave the saving of bodies to physicians. Consumption could be cured in every climate of the temperate zone. The speaker did not depreciate the value of climatic treatment of tuberculosis, but maintained that when cured at home the patient's chances of remaining cured were better. He deplored the improper use of the term "sanitarium." Sanatorium was more correct, corresponding to the German, "Heilanstalt." The need of a sanatorium in Brooklyn was badly felt. The consumptive required constant medical supervision, fresh air day and night (the fear of night air was a nightmare). When discovered early, and sent to a sanatorium, the chances of cure of an early case were 75 to 85 per cent. Such a patient on returning home became a teacher and reformer. The sanatorium had other advantages. Not only was it not a menace to the neighborhood, but it actually reduced the mortality from tuberculosis in its own environment. This was shown by statistics gathered from a sanatorium town in Germany, where the consumptive death rate had been diminished by one-third. By virtue of the incitement to cleanly habits in the tuberculous, the well-equipped sanatorium became a blessing. The tuberculosis dispensary was a necessity. Here the patient was properly instructed, and received his own medicine; suitable cases were selected for sanatorium treatment. Without a diet-kitchen such a dispensary was inadequate. Just as the sanatorium was advisable for early cases, so the hospital was essential for advanced cases. It was important to remove hopeless cases from the tenements. These various institutions were to be multiplied according to the amount of population. Even then the problem would have been solved only in a measure. As long as the dark, dreary tenements existed, so long would tuberculosis exist. These tenements and the similar sweat shops had to be first removed. An appeal had to be made to the community and to fellow-citizens. Philanthropists had to realize their responsibility. More important than libraries would be a provision for well-ventilated living apartments for the poor. It was sufficient to evoke the greatest sympathy for the laborer, to see him after a hard day's work, returning home to his dark den, to partake of a poorly cooked meal. He was little to be blamed indeed if he took to drink. The speaker emphasized the importance of beginning at the bottom in the crusade against tuberculosis.

Dr. Joseph H. Raymond of Brooklyn, Chairman of the Committee of the Bureau of Charities on the Prevention of Tuberculosis, discussed the paper. He said it was always a difficult task to discuss a paper prepared and presented by an expert. Until twelve months ago nothing had been done in Brooklyn to prevent the spread of tuberculosis except what had been accomplished by the Department of Health. This was not so effective because it was not supported by the medical profession. One year ago the subject had been brought to the attention of the Brooklyn Bureau of Charities, a voluntary organization supported by philanthropic individuals. One of the first things which this bureau started to do was to try to establish a tuberculosis clinic. One year ago there had been no dispensary in Brooklyn in which consumptives could be given the special care and instruction which were their due. Such patients were not as a rule welcomed in the general dispensary. Without the tuberculosis clinic the crusade against the disease had to lag. It had been suggested that the Health Department should employ a corps of physicians to visit the homes of consumptives. This was impracticable. The department then decided to establish a tuberculosis clinic. The anomalous spectacle was then prevented by the Supreme Court enjoining the Board of Health from establishing a special tuberculosis clinic on the ground of danger to the public health. The department had already fitted up a house when it was enjoined by an injunction. This was afterwards made permanent. In order to solve the question that had been raised in this litigation, namely, whether there was any danger of infection from the sputum deposited in the street by consumptive patients visiting the clinic, the speaker had obtained by means of a letter of inquiry the views of the chiefs of each of the twenty special dispensaries for tuberculosis in the United States and Canada. There was an absolute unanimity of opinion that there was no danger to the public arising from the presence of such a dispensary in the community, that on the contrary, the special instruction and training given to the patients really diminished the element of danger to a minimum.

Dr. Horace Greeley of Brooklyn said that there were in Brooklyn from fifteen to thirty thousand persons suffering from pulmonary tuberculosis. He held that 10,000 of these were in a condition to be substantially benefited by the modern hygienic treatment, but of this number possibly one-half could not either be induced to leave the city or might be safely treated at home. About 2,000 of the remainder were independent and able enough to pay $5 or $6 per week in a model open-air institution on Long Island. It had been demonstrated that 80 cents per day was ample to pay the expenses in the care of patients in such a sanatorium. He remarked that the entire State of New York at present afforded free treatment for only 282 patients, for 110 it charged $5 per week, and for about 200 it charged from $10 to $35 per week. In these institutions during 1905, Brooklyn was represented by only nine patients. He accordingly argued the urgent necessity of a sanatorium. The Society selected a site on the middle and highest portion of the island, near Medford Station, where the Central Labor Union had purchased for it with $1,200 subscribed by 1,200 workingmen, a beautiful well-wooded tract of 65 acres. This locality offered the advantages of a summer temperature five degrees cooler than that of New York, while in winter it was warmer by fifteen degrees. Other advantages were its proximity to Brooklyn (50 miles), rendering it easy of access and also the presence of climatic conditions similar to those to which the patient hoped to return. On this site they intended to erect a two-story wooden building with extending wings, estimated to cost $50,000, containing 100 single rooms for patients, arranged along balconies extending from a central administration building. The exterior was to be of concrete, and the interior of hardwood lining, and was designed for subsequent indefinite extension.

Universal Depravity.—Dr. William Henry, an English physician, states, as the result of experiments, that, in all forms of animal life, insects included, exists the taste for alcohol. He says that fishes are the only "real teetotalers" in creation.

Therapeutic Hints.

Anesthetic for the Auditory Meatus.

℞ Acid carbolic liq.....0.5
Cocain. mur.
Mentholis .....aa 2.0
Spt. vini vect.....10.0

This mixture can be used, according to Hechinger, for the incision of furuncles, paracentesis of the drum membranes, etc., as the carbolic acid in it injures the epithelium sufficiently to allow the cocaine to be absorbed.—*Deutsche medizinische Wochenschrift.*

Impetigo Contagiosa.—Lau recommends white precipitate ointment, or:

℞ Zinci oxidi.....
Amyli .....aa 25.0
Vaselini flavi..... 50.0

or the following, used extensively in the clinic at Breslau, Germany:

℞ Sulphuris praecipitati..... 10.0
Amyli 20.0
Glycerini .....
Aquæ destillatæ.....aa ad 100.0
—*The Medical Herald.*

Hemoptysis.—Lawrason Brown advocates the use of the nitrites in this condition on account of their action in dilating the peripheral vessels, mainly of the head and neck and of the splanchnic area, causing a marked fall in blood pressure while the heart is accelerated. He suggests that the blood pressure be frequently observed, that morphine be used when necessary to quiet the patient, and so equalize the blood pressure, that sodium nitrite be exhibited to reduce when necessary the blood pressure, and that in case of sudden hemoptysis amyl nitrite be administered at once when possible to produce a marked fall in blood pressure and so aid in a temporary cessation at least of the hemoptysis. —*American Journal of the Medical Sciences.*

Bronchitis.—Eichhorst recommends as expectorants:

℞ Acidi benzoici.....0.3
Camphoræ 0.05
Sacchari 0.2

S. One such powder every two hours.

℞ Infus. rad. ipecac.....0.5:180.0
Pot. iodidi..... 3.0
Syr. simplicis..... 20.0

M. Sig. One-half teaspoonful every two hours.
—*Deutsche medizinische Wochenschrift.*

Intestinal Atony. For postoperative intestinal paralysis Anspach uses an enema composed of:

℞ Mag. sulph..... ℥ij
Ol. olivæ..... ℥ij
Glycerin .....f℥j
Ol. terebinth.....f℥ij
Aquæ, q. s. ad..... Oj

given through a rectal tube into the colon. If this is ineffectual, two hours afterward six ounces of glycerin is injected into the rectum.

In obstinate cases an enema of:

℞ Alum exsiccat.....℥ij-℥ij
Aquæ .....Oij

is ordered. Or, if the patient is able to take Epsom salt, this is given in drachm doses until effectual. In desperate cases a hypodermic injection of:

℞ Atropin. sulph.....gr. 1/150
Eserin. sulph.....gr. 1/100
Strych. sulph.....gr. 1/30

is given every three or four hours. When salts cannot be taken without passing a stomach tube, elaterium, gr. ¼, sometimes proves of value. Occasionally the enemas are more effectual when given with the patient in the Trendelenburg posture.
—*University of Pennsylvania Medical Bulletin.*

Epistaxis. Wiesner has found the following powder useful when snuffed up the nose:

℞ Antipyrini 0.50
Acidi tannici..... 1.00
Sacchari pulv. ad.....10.00
—*Pharmakologische Rundschau.*

Diarrhea in Children.—Perret suggests the following:

℞ Acidi lactici..... 3.0
Syr. mali cydonici..... 25.0
Aquæ destil.....100.0

M. et Sig. One teaspoonful every half hour to a child one year old. After the first year the dose is a tablespoonful. Another prescription is:

℞ Bismuthi phosphat solubil..... 2.0
Syr. simplic.....10.0
Aquæ destil.....90.0
Revue d'Hygiène et de Médecine Infantile.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending September 1 and 8, 1906:

	Week of Sept. 1		Week of Sept. 8	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis...	374	148	329	168
Diphtheria.....	149	8	125	16
Measles.....	41	3	54	3
Scarlet Fever.....	44	6	46	3
Smallpox.....	3	—	2	—
Varicella.....	12	—	9	—
Typhoid Fever.....	94	20	139	13
Whooping Cough.....	26	15	30	9
Cerebrospinal Meningitis...	3	6	10	12
Malarial Fever.....	.....	.....	.....	.....
Totals	746	206	744	224

Deep Injections in Lues of Infancy.—Calomel injections have for many years been recommended and employed in children of one or two years of age. In their recent work ("La Syphilis") Drs. Barthelemy, Levy-Bing, and Schwaab report cases of lues in the new-born treated almost from the start with gray oil in 40 per cent. strength. One centigram of mercury was injected deeply into the muscles of the upper buttock every eight to fifteen days under all antiseptic precautions. A long, fine platinum needle is used. There is little or no pain, and if induration occurs it disappears by the time the next injection is given. There is no mercurial intoxication, and the good effects seem more lasting than when soluble salts are used. At the age of two months two centigrams a week or fortnight can be injected. A preliminary course of aqueous solution of biniodide (ten to fifteen injections) is perhaps preferable to beginning gray oil at birth.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 1, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Louisiana, New Orleans	Aug. 18–25	7	..
New York, New York	Aug. 18–25	3	..
Ohio, Cincinnati	Aug. 24–31	1	..
Pennsylvania, Sunbury	July 4	1	..
Texas, Houston	Aug. 18–25	1	..

SMALLPOX—FOREIGN.

Africa, Cape Town	July 14–28	30	..
Canada, Toronto	Aug. 18–25	1	..
France, Paris	Aug. 4–11	7	..
Great Britain, Liverpool	Aug. 18–25	2	..
India, Bombay	July 24–Aug. 7	..	3
Calcutta	July 14–28	21	..
Karachi	July 22–Aug. 5	7	2
Madras	July 21–Aug. 3	..	5
Rangoon	July 14–21	..	2
Japan, Kobe	July 14–21	1	..
Russia, Moscow	Aug. 4–11	2	2
Odessa	Aug. 4–18	8	..
St. Petersburg	July 28–Aug. 4	1	1
Siberia, Vladivostock	July 14–21	2	1

YELLOW FEVER.

Cuba, Habana	Sept. 3–5	1	1
Mexico, Merida	Aug. 12–25	10	5
Veracruz	Aug. 19–25	1	..

CHOLERA.

India, Bombay	July 24–Aug. 7	..	207
Calcutta	July 14–28		19
Madras	July 21–27	..	10

PLAGUE—INSULAR.

Honolulu, Hawaii	Aug. 30	..	1

PLAGUE—FOREIGN.

Arabia, Djeddah	July 16–22	11	11
Egypt, Alexandria	Aug. 4–9	8	7
Suez	Aug. 3–0	4	4
India, General	July 7–14	450	346
Bombay	July 24–Aug. 7	..	69
Calcutta	July 14–28	..	17
Karachi	July 22–Aug. 5	16	16
Rangoon	July 14–28	..	277
Japan, Formosa	July 21–31	20	29

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Original Articles.

OBSTRUCTION OF THE COMMON BILE DUCT.*

WITH REPORT OF A CASE OF IRRIGATION OF THE HEPATIC-DUCT SYSTEM.

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THAT all obstructions of the common bile duct eventually come to the surgeon for cure is a fallacious tenet, proven alone by numerous cases that are temporary only in their course. That all permanent and intermitting obstructions are distinctly surgical diseases, is a tenet well taken.

Some of the temporary causes of obstruction of the common duct are: Cholecystitis, with duct pressure by a distended gall-bladder; inflammatory changes in the duct or papilla, producing internal occiusive obstruction by means of infiltrate and swelling of the mucous membrane; foreign matter, as plugs of mucus, etc., and, finally, although most frequent, the passage of a stone through the duct itself.

In intermittent obstruction, we usually have a stone too large for passage through the duct, acting as a ball-valve. The symptoms appearing, when, for some reason, be it force from behind or irritation on the part of the duct, the stone is wedged or grasped in the distal portion, and the symptoms disappearing when the stone is released, either by relaxation of the irritable duct, or by some relief of the pressure from behind.

Permanent obstruction is due usually to one of two distinct processes, a stone impacted in the duct, or organic changes of benign or malignant natures. Of the latter processes, malignant changes are far more frequently found than benign stenosis.

The site of obstruction to be productive of a symptom complex sufficient to make a definite diagnosis, must be between the point of formation of the hepatic duct and the Vaterian papilla, and can be either external or internal in its relation to the duct lumen.

Among the external pressure causes of obstruction, we have malignancy of the gall-bladder and cystic duct, the outer walls of the common duct, the pylorus, the duodenum, and pancreas, while in the internal causes we must include, with stone, benign stenoses due to former ulceration within the duct, malignancy of the Vaterian papillæ, or of the duct itself, or malignancy of the duodenum encroaching upon the orifice of the otherwise healthy Vaterian papilla.

The symptoms produced by obstruction are readily classified by the cause of the obstruction. In the passage of a stone they of necessity are acute in all phases, while in malignancy a slow onset or chronic phase is given the picture. If due to a stone, pain varying in intensity is an ever-present symptom. This is usually located by the patient himself, in the epigastrium to the right of the median line, radiating into the shoulder-blade region and even into the neck, with very frequently some girdle manifestations. Point pressure pain is elicited over the course of the duct, a point somewhat internal to that in cholecystitis.

Nausea and vomiting are often an accompanying manifestation at the onset. The temperature is usually not elevated until later complications arise, such as cholangitis, etc., although I have seen it in the onset 103°, and subside in a day or two. Evidences of jaundice appear within a few hours to several days; jaundice is never a factor in cholecystitis, except as a result of pressure on the common or hepatic ducts. The stools soon lose their characteristic color and become of a light clay or putty shade. The urine presents evidences of bile, from a slight chemical trace to profound ocular manifestations. The skin, with varying degrees of jaundice, itches usually, and occasionally to such a degree as to be almost unbearable; jaundice appears first in the sclerotic of the eyeball.

The liver, while not affected at first, soon becomes engorged, and may in a few days become distinctly palpable beyond its normal relations. Digestive disturbances, chiefly referable to the stomach, arise early. Finally a distinct loss in weight is readily demonstrated.

Should the obstruction be of the intermittent variety, all the symptoms subside, either in part or entirely, only to recur when the stone is again wedged or incarcerated.

Should cholangitis arise, the clinical picture rapidly takes on a serious phase. The temperature and pulse rapidly rise, the patient has an additional facial appearance, that of an hectic flush, and a general septic evidence becomes a noted factor. The pain, instead of being limited to the duct region, spreads to the liver area, and a greater or less degree of coma is present. This latter may be present in cases where no cholangitis exists.

There should be no difficulty in arriving at a diagnosis of stone in these acute cases, except at the time of the onset of pain, as occasionally the pain is not of the characteristic variety described above, and therefore may be questioned as being that of either acute pancreatitis, gastroduodenal perforation, or a high-placed appendix undergoing an attack.

In the slow or chronic cases one can readily be led astray in the diagnosis, and great care must be taken to differentiate between chronic pancreatitis with gradual obstruction of the common duct, malignancy, or inflammation of any portion of the gastro-intestinal tract capable of producing pressure upon the common or hepatic ducts.

Should the gall-bladder be enlarged in the chronic cases, so as to be palpable, a marked suspicion of

*Read before the Practitioners' Society of Eastern Monmouth, at Elberon, N. J., June 14, 1906.

malignancy is in order. Courvoisier's law that in malignancy or external pressure to the duct, an enlarged bladder may exist, and that an obstruction by stone is usually accompanied by an atrophied or contracted bladder, holds good in a fair percentage of cases. Recently (see case cited) I had a patient, a girl of seventeen, with both obstructive cholecystitis and cholangitis, in whom the gall-bladder was enormously dilated.

Presuming that all medical aid has been given without result, or that the symptoms are of such urgency as to demand immediate surgical interference, the condition then narrows itself to a question of surgical technique and subsequent treatment.

My custom in exposing the duct is to make the incision over the right rectus, splitting the fibers in the middle and internal, or middle and external thirds, for a distance sufficiently long to explore the duct. If the stone is located or adhesions demand the incision is then rapidly enlarged so as to give ample working room. The customary pillow under the back, depending upon the accessibility of the duct, may or may not be used. When the site occupied by the stone has been cleared of such adhesions, etc., as are necessary, and all the surrounding viscera thoroughly protected by salt solution pads, a traction suture is passed through the walls of the duct at about the upper limit of the intended incision into the duct. The stone is then steadied by two fingers in the foramen of Winslow behind or below the duct, and the thumb above or in front, and an incision sufficiently long to allow of the expulsion of the stone or stones is made. After the expulsion of the stone, and proof by search that no other stones are present, a fishtail rubber tube, with from one to three openings and about ten or twelve inches long, is passed into the duct in its proximal direction, for its lower three-quarters of an inch, sufficiently to bury the apertures only. A suture of chromic catgut is then taken through both edges of the duct and includes a portion of the tube above the openings. This is tied and assures us of no slipping of the tube until the suture is absorbed. When this latter occurs, a safe way is established for further drainage, if necessary. As many more sutures are taken as may be required to close the gap made in the duct. A cigarette drain is then placed down to the site of the suture line as a precaution against leakage. The protection pads are removed after thoroughly sponging out the area with salt sponges, and the abdomen closed to the drainage site.

The removal of a stone is not always so simple a procedure. Should the stone be impacted in the lower quarter to half inch, one of two procedures can be undertaken. The transduodenal route of McBurney, or the retroduodenal method advocated and described by A. A. Berg (*Annals of Surgery*, August, 1903), and C. M. Cooper, who reported three cases successfully done by this method (*ibid*, September, 1903). Greater safety lies in the latter method, as none of the dangers of infection by intestinal contents arise that are more than possible by the McBurney transduodenal route.

It will be recalled that the tube in the duct is passed in but about three-quarters of an inch and has several perforations. These perforations allow of a certain amount of bile to pass through the distal portion of the duct in case its caliber becomes diminished so as to hug the drainage tube, while the excess of bile must perforce drain through the rubber tube. This drainage is carried off by attaching a tube sufficiently long to pass over the edge of the bed into some receptacle, usually a bottle, in which the discharge can be seen and measured. When the physical character of the bile begins to assume a normal aspect, I am in the habit of pinching the tube an hour out of every eight for the first day, then two hours at a time, etc., so that in a short time, at the end of the fourth or fifth day of apparent normal bile, the tube, if still in, is pinched or shut off for about twelve hours out of twenty-four. I deem this an essential procedure, as the system absolutely demands this great secretion for the proper metabolism of the food intake.

It has been, and is yet, a custom of mine, during the first few days, to give oxgall in doses of five to ten grains every four hours, and I feel that noted benefit is derived in those cases where the quantity of drain seems excessive. After the drainage tube comes out (from ten to twelve days) the skin of the abdomen requires, in most cases, constant attention to prevent a most pernicious dermatitis. This is readily accomplished by the use of boric or ichthyol ointment, and cleanliness by frequent dressings. The fistula usually closes in from two to three weeks.

In cases of malignancy and stricture, should the growth or stenosis be distal to the cystic duct and nonremovable, then a cholecystenterostomy is in order, while if it is removable, excision with end-to-end, or end-to-duodenum, etc., anastomosis should be done. If it be proximal to the cystic duct, operative procedure becomes almost impossible.

The history of the case referred to above is of such interest from the viewpoint of the age of the patient, the enormous dilatation of the common duct, and the extent of the operative procedure, that I include it as a most interesting conclusion to this paper.

A girl, seventeen years of age, of Russian Jewish parentage; no history of typhoid fever; always constipated; perfectly well previous to her landing in America two and a half years ago; a victim of favus; entered the hospital on April 1 of this year, and gave the following history: She had been jaundiced for four weeks. Has had occasional cramp-like pains in the upper abdomen on the right side. On the day before admission she had an attack so severe in its character and duration as to necessitate urgent attention.

This additional history was obtained subsequent to the operation: On coming to America two and one-half years ago, she was ill for six weeks; had amenorrhea and pains similar to the present; no jaundice noticed. About two years before admission she was jaundiced for about one year. During this time she had a dull, aching pain in the right hypochondrium, which was occasionally intensified into an acute stabbing pain in the same region. This was followed each time by dark blood in the fecal discharges. She does not remember the color of the stools or urine. No gallstones were noticed in the stools. During this time she says she vomited about three times a week, and each time the vomiting was followed by relief. Had to leave her work at times and remain in bed on account of the pain; would feel warm and cold, and drink much water. Has been more or less jaundiced ever since that time, and has never been entirely well. These attacks of jaundice were accompanied by profound itching of the skin. She says the pain in the back, directly behind the gall-bladder, was more severe than in front. All this time she has had severe headaches and indigestion, "yellow vision," and black spots before the eyes.

Upon admission the patient was delirious and in coma. Well nourished, deeply jaundiced skin and conjunctivæ. Scalp, favus over the greater portion. Chest, negative. Abdomen, tenderness and rigidity

over the gall-bladder region; also markedly tender spot about one inch above the umbilicus and somewhat to the right. Liver dullness four inches below the costal arch and extending downward over what appeared to be an enlarged gall-bladder. Pulse, 106 to 120; temperature, 103.4° by mouth. The temperature on April 2 fell to 99.5°, pulse 88. On the following day the temperature was 104.6°, pulse 152; delirium and coma were present, and the patient looked septic.

Operation was done within forty-eight hours of admission and in the third day of the attack. Upon exposing the liver, it was found to be nodulated and congested to a very deep degree, exceptionally hard to the touch, and greatly enlarged. The gall-bladder was about eight inches long and three inches in diameter at its fundus; tense, and buried in an omental mass, highly discolored and presenting spots of color through its serous coat that were considered (and so proven after opening) gangrene of the mucous coat.

After liberating the bladder from its omental encapsulation, a stone was palpated in the cystic duct. By following the duct to the common, a mass of stony hardness, over three inches in length and larger than an ordinary thumb, occupied the site of the common duct. Cholecystectomy, choledochotomy, etc., were decided upon. While releasing the gall-bladder from its liver sulcus, it ruptured, expelling fully ten ounces of the most foul smelling and appearing contents that I've ever met with. The bladder was then rapidly excised, and a stone about three-quarters of an inch long by a half inch in its largest diameter was removed from the cystic duct. Two pairs of forceps grasped the sides of the cystic duct, which was then split to the common duct. This latter and the hepatic were then split for a distance of an inch and a half. Two stones, seven-eighths of an inch in diameter and measuring two inches long, were expelled, while a third one was located in the pancreatic and retroduodenal portion of the duct. This was also seven-eighths of an inch in diameter and a fraction over an inch long. This latter stone was so thoroughly fixed that great difficulty in its expulsion was met with. Owing to edema, adhesions, etc., neither the transduodenal nor the retroduodenal operations could be done. Having a large duct, and a large opening in it, I was able to fragment the stone with a small instrument introduced into the duct, part of the stone being pushed through the papillary opening, and the remainder delivered by scoop through the choledochotomy wound.

Examination of the hepatic ducts was then made with the little finger. These were blocked with stone and biliary detritus. Upon removing these materials there was a profuse gush of the same foul-smelling and appearing material as was present in the gall-bladder.

Reexamination of these ducts proved the presence of more of this same material. A blunt curette was then passed into both right and left ducts, bringing out quite a quantity of detritus, and then, although I'd never seen nor heard of irrigating the liver ducts, I introduced a quarter-inch irrigating tube and flushed the liver with saline solution through these ducts. During this flushing process, one could readily see the liver, which had subsided considerably as a result of the emptying of the ducts, rise and fall with the entrance and discharge of the solution.

A tube was sutured into the duct, several sutures taken to close the balance of the incision in the duct, and then a deep incision was made into the liver substance of the superior surface of the right lobe, for about two and a half inches in length. This was done as an extra means of drainage, and was accompanied by a fair hemorrhage, but was readily controlled by gauze. The exposed area was sponged with salt solution, and the wound closed to the drain site. Time occupied, one hour and ten minutes.

The temperature dropped to 100° by rectum, and remained on a line between 99.4° and 100.4° for six days, then became normal and remained so except for an occasional constipation rise of one degree. Fifteen ounces of dirty, foul-smelling bile were collected the first fifty hours.

April 7. Patient doing nicely; bile clearing up.

April 11. Stools, which were clay color before operation, still so. Tube came away; patient passed fragments of stone by the bowel, that had been forced through the papillary opening.

April 17. Stone size of pea discharged through the wound. This must have come from the liver. Stool well formed and yellow. Sinus in abdominal wall doing well.

April 22. Patient sat up for the first time, that is, on the nineteenth day after the operation.

May 5. Patient was discharged at her own request, thirty-three days after the operation.

The urine varied in specific gravity, from 1030 to 1016; it was acid except on April 5 and May 4, when it was found to be alkaline. Some blood was found on April 4. The blood count on April 3 showed white blood corpuscles, 20,000; polynuclear, differential, 81 per cent.

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LUPULIN IN THE TREATMENT OF GASTROINTESTINAL DISEASES.*

By HEINRICH STERN, M.D.,

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Lupulin, although officinal, is a drug which is not extensively employed nowadays. To be sure, there are many malt liquors, beer especially, that contain hops and which are largely consumed as appetizers and stomachics. However, the proportion of hops found in the malt beverages is so small that, generally speaking, a lupulin-action cannot be obtained even if an individual imbibes rather large quantities of any brew. In such instances, the alcohol-action makes itself evident long before that of lupulin can possibly be felt. Furthermore, quantity and quality of lupulin differ widely in various specimens of hops, and thus it may happen that but infinitesimal amounts of it may be contained in an entire liter of beer. Hence, if we wish to obtain the lupulin-action there is nothing left to us but to prescribe the drug in its pure state.

Lupulin is a fine brownish-yellow dust which covers the inner side of the scales of the flowers of humulus lupulus. Under the microscope the powder is seen to consist, according to the P. B. of 1885, of minute, somewhat globular, top-shaped, reticulated, translucent, shining glands. These glands contain hop-resin, hop-oil, bitter principles, lupulic acid, etc. Lupulin burns readily, and it contains the greater part of the volatile oil to which is chiefly due the peculiar aroma of hops. In unripe hops little or no lupulin is present, hence the absence, or deficiency, of hop-aroma in beer brewed with it.

Various samples of hops contain various amounts

*Read at the meeting of the Medical Association of the Greater City of New York, June 11, 1906.

of lupulin. Its amount may fluctuate between six and twenty per cent. Hops cultivated in Japan from European seeds are the poorest in lupulin. European hops grown in the best hop-countries exhibit from twelve to fifteen per cent. of lupulin. A sample of hops from Wisconsin yielded twenty per cent. of lupulin.* The proportion of lupulin depends seemingly upon the frequency of sunny days during the ripening season.

Lupulin, however, does not exhibit a definite composition. Its various constituents differ in different specimens. This is especially the case with the absolute and relative amounts of the individual components. Thus it is the quality, and not the quantity *per se,* on which depends the value, and particularly the therapeutic import, of lupulin.

That there exists a great discrepancy as to the therapeutic efficacy of the various lupulins of commerce, I think I was the first to demonstrate (Transactions of the Manhattan Clinical Society, April 1903, *Medical Standard,* 1904). The results obtained by different lupulins are not uniform. A sample of fresh lupulin obtained soon after the hop harvest, is much more efficient in therapeutic respect than one which is some months old. Again, if lupulin is kept over summer, it is always rendered more or less useless for therapeutic purposes. As a matter of fact, all specimens of lupulin of the previous harvest, made use of by me for therapeutic investigation, proved almost entirely inert. This was even the case when the fresh product has proved of exceptional efficiency. Lupulin, even when kept in an air-tight container, soon attains a cheesy odor. This ensues especially if it had been kept in a warm place. This odor of decomposition is due to the production of valeric acid. The latter was formerly thought to be the result of the oxidation of hop-oil; however, it seems more likely that it originates from the oxidation of the bitter principles contained in lupulin. It will be found that lupulin, or that what is usually sold under that name by pharmaceutical houses, is in almost every instance a more or less deteriorated article the therapeutic action of which—at its best—resembles that of a weak solution of valeric acid. In order to obtain a satisfactory lupulin-action, it is, hence, imperative that the product is to be obtained from commercial houses importing it in large quantities for brewers' use, and that the air-tight vessel containing it be kept in cold storage, and not on the shelves of drug-shops for months and years, as is the case generally, before it is prescribed.

Lupulin contains a brown insoluble resinous matter, *lupuliretin,* $C_{10}H_{18}O_4$, *lupulinic acid,* $C_{48}H_{82}O_{19}$, *lupulic acid,* $C_{50}H_{70}O_8$, and occasionally an alkaloidal substance, "*lupuline.*" The lupulin-action seems to depend upon its content of lupulic acid. If the acid is exposed to the air, its colorless prisms change rapidly to yellow, its upper layer attains resinous consistency and a decomposition-odor constiting of valeric acid and aldehydes is being produced. This conversion ensues ever more rapidly if a small amount of an alcoholic solution be placed on a watchglass and allowed to evaporate in the air. Lupulic acid derived from old hops or lupulin does not crystallize readily. The resinous substance due to oxidation of the acid has certain antiseptic properties: it prevents, more or less, lactic acid fermentation, but exerts no influence upon acetic acid fermentation or upon yeast-activity. Dreser (*Pharmaceutical Journal,* XVII, Allen) determined that 0.025 gram unconverted lupulic acid in alcoholic solution acted as a fatal poison in frogs and guinea-pigs. In frogs, it called forth paralysis of the central nervous system and of the heart. In warm-blooded animals the acid gave rise to a very pronounced acceleration of the respiration. The resinous oxidation-substance practically exhibited no poisonous qualities. F. Davis (*ibid.*) injected into the jugular vein of a cat a watery solution of 0.18 gram of crystals, obtained by him by extraction with ether of green strobiles of hops, which produced death in seven minutes. The animal seemingly had no pain, but a peculiar twitching of the muscles could be noticed.

A substance of alkaloidal nature, "lupuline," which is said to exhibit narcotic qualities, was isolated from hops some years ago. This body does not seem to be of constant occurrence, as very few investigators have been able to obtain it. In the finer grades of hops it does not seem to be present at all. Another alkaloidal body, pretended to be obtained from American hops, and marketed under a trade name, on analysis proved to be a mixture of morphine with another alkaloid, seemingly atropine (*Pharmaceutical Journal,* XVI, Allen).

The lupulin which I found the most active and trustworthy in my physiological and clinical experiments proved to be that from Saaz hops. Saaz is a little town in the Bohemian hop-belt. I do not know whether the hops of Saaz are any better than the hops of neighboring quarters, but I know from experience that the lupulin-producers of this town understand more about the handling of their product than do the growers in other sections of the hop-country. In my studies of lupulin, that from Saaz was depended upon for the last couple of years.

In the following I limit myself to a discourse of the therapeutic influence of lupulin on disorders of the alimentary tract, my associate at the Institute for Medical Diagnosis and Research in the City of New York, Dr. Thomas F. R. Reilly, having already reported our experience with the drug in a variety of disturbances of other organs. (American Medical Association Section on Pharmacology and Therapeutics, 1905.)

Diseases of the Stomach.—Lupulin finds a special indication in the functional disturbances of the stomach; in sensory, as well as motor and secretory neuroses and in neurasthenia gastrica.

The gastric neuroses are almost always expressions of general affections like neurasthenia and hysteria. They are but rarely of independent occurrence, and remedies which act locally only have, if at all, limited ameliorating influence. Lupulin is frequently a modifier of the general nervous system. It is in part a symptomatic, in part a causal remedy.

Among the gastric neuroses of sensation lupulin is of value in the treatment of *nervous anorexia.* This condition which may last for protracted periods, occurs mostly in women and results in emaciation, loss of bodily vigor and resistance, and often anemia. The drug may be prescribed as follows:

℞ Lupulin ..... 0.3 gram (5 grs.)
D. t. dos. No. C (100) in caps. gelat.

Sig. From one to three capsules one or two hours before meals with carbonated water.

If a more energetic local action is desired, the following combination will be found useful:

℞ Lupulin ..... 0.3 gram (5 grs.)
Berberini phosphatis. .... 0.03 (gr. ss)
Capsicini..... 0.0075 (1-8 gr.)
Ft. d. t. dos. No. C in caps. gelat.

Sig. From 1 to 3 capsules half an hour before meals.

*The pertaining data are obtained from "Commercial Organic Analysis," by Alfred H. Allen, Vol. III, Part 3.

In the treatment of nervous anorexia and other functional gastric disturbances I have often found the following combination of particular value:

℞ Lupulini 0.2
Condurangini 0.01
Cinchonidini 0.05
D. t. dos. No. 100 in caps. gelat.

Sig. 2 capsules half an hour before meals, to be followed by one or two teaspoonfuls of whiskey or brandy.

Hyperesthesia of the gastric mucosa, not infrequently associated with anorexia of a foregoing variety, occurs often as a neurosis, especially in chlorotic female individuals. In this condition there exists an augmented sensibility of the gastric nerves which may cause painful sensations upon very slight digestive or psychic irritation. The patients experience painful gastric fullness and nausea. Normal gastric chemism is characteristic for this condition—a fact by which a differential diagnosis may be readily established.

To overcome these painful sensations I am in the habit of prescribing the following:

℞ Lupulini 0.25
Argenti nitratis ..... 0.005 (1-12 gr.)
D. t. dos. No. 30 in caps. gel.

Sig. One of two capsules before meals together with half wineglassful of luke-warm water.

This combination continued for some time suffices very often to relieve the burning or gnawing gastric pain. In a few instances it is necessary to incorporate with it small doses of codein or extractum belladonnae fol. alcohol.

Another good combination affording relief of gastric hyperesthesia is the following.

℞ Lupulini 0.5
Camphoræ mono-brom..... 0.15—0.3
M. et ft. pulv. d.t. dos. No. XXX.

Sig. One powder before meals in wafers.

It must be understood, of course, that dietetic and other measures must often be instituted along with the medicinal treatment.

In the most painful of all gastric neuroses, *cardialgia* (gastralgia, gastric spasm, gastrodynia) lupulin is a valuable remedy provided the gastric pain is the consequence of neurasthenia, hysteria, chlorosis, or general weakness. Lupulin exerts no or but limited influence upon cardialgias due to central organic nervous disease, or to organic gastric or intestinal affections. During the acute cardialgic attacks, when severe, medication should not be administered per os. This would preclude the employment of lupulin. However when the attack is less severe, and particularly in the intervals, lupulin proved a very efficient therapeutic agent.

In the less severe forms of cardialgia, which, fortunately, are those most frequently met with, lupulin in gram doses (in wafers or divided in capsules), to be repeated, if necessary, every hour, will be found of service. The addition of small doses of codeine will often, though not always, enhance the efficacy of the drug. The administration of spiritus chloroformi or spiritus ætheris compositus, together with lupulin, does not interfere with the activity of the latter. The influence of both chloroform and ether is a transient one, while that of the lupulin is enduring for decidedly longer periods; however, its sedative effects are not exerted as quickly as are those of chloroform or ether. Hence, for immediate effects, preparations of chloroform or ether, for longer lasting effects, lupulin, are the remedies.

When it seems advisable not to administer any drug by the mouth, lupulin may be given in the form of suppositories. These may be made with oleum theobromæ. A more suitable menstruum, however, one which probably would preserve the qualities of the lupulin for a considerably longer period, I think, would be a glycerogelatinous hollow cone in which the drug is introduced. The following formulæ answer very well:

℞ Camphoræ
Lupulini .....aa 5.0 grams.
Ext. belladonnæ..... 0.15
Olei theobromatis q.s.
M. et ft. suppositoria No. X.

Sig. One suppository to be inserted into the bowel every two hours.

℞ Lupulini ..... 5 grams.
Extracti cannabis Indicæ..... 0.3
Olei theobromatis q.s.

Sig. Insert one into the bowel every two hours.

℞ Lupulini 5.0
Ext. physostigmatis 0.2
Ext. belladonnæ alc..... 0.1
Olei theobromatis q.s.
M. et ft. supp. No. X.

Sig. One suppository every three to four hours.

The neuroses of gastric motility, increased as well as diminished peristalsis, often yield to lupulin. This is especially the case with the various forms of nervous vomiting, the common, the periodic, and the juvenile types. In these instances lupulin has a decidedly more lasting effect than either bromides or valerianates and does not give rise to secondary trouble as these other drugs are apt to do. Generally speaking, lupulin may be given in nervous vomiting in the same doses and combinations as in cardialgia. In vomiting of pregnancy I have recommended a combination of menthol and lupulin to some obstetricians who have employed it to advantage in many cases. Three to ten drops of a 25 per cent. ethereal solution of menthol are added to 0.5-0.75 gram lupulin previously placed in a wafer. This dose may be repeated, when necessary, every 3 or 4 hours.

In aerophagia and gastric spasms the drug serves a good purpose. Besides the medicinal treatment, other therapeutic measures may, of course, be instituted. In atony—that is, in diminished gastric motility without demonstrable anatomic changes—lupulin acts as a gastric stimulant. The fact must not be lost sight of that lupulin is not only a symptomatic remedy, but that it may also alleviate or eradicate the cause of certain alimentary disorders, as it stimulates the general and local circulation and improves the tone of the stomach and intestinal tract. The best suited lupulin combinations for this form of gastric atony are those aluuded to when speaking of nervous anorexia.

Gastric secretory neuroses of all forms and degrees are usually greatly benefited by lupulin. In hyperchlorhydria a systematic effect is to be obtained. For that purpose the dose should be from 0.75 to 1 gram. In subacidity or anacidity of nervous origin the local action is the one which is primarily indicated. A smaller dose, as a rule, suffices for that purpose. In cases of hyperchlorhydria or chronic hypersecretion, extract of belladonna or atropine may be administered with the lupulin, but only for limited periods. I find that lupulin alone, if given in sufficient doses, will ameliorate gastric neuroses in most instances. In cases of deficient acidity lupulin may be combined with such agents as recommended for nervous anorexia or with bitter stomachics. The latter may be taken separately. In hyperesthesia lupulin may be given before and after meals.

The most frequent gastric neurosis is *neurasthenia gastrica,* the so-called nervous dyspepsia. It is a combination of the various neuroses spoken of in the foregoing. Lupulin is indicated in the same manner as it is in the component neuroses. It may be advantageous to combine with it some preparation of iron, or other tonic remedies. I have frequently used one of the following formulæ:

℞ Lupulini 0.15
Ferri et quininæ citratis..... 0.1
D. t. dos. No. C in caps. gel.
Sig. Two capsules before meals.

℞ Lupulini 0.15
Ferri et strychninæ citratis.
Cinchonidinæ sulphatis .....aa 0.05
D. t. dos. No. C in caps. gel.
Sig. Two capsules three times a day.

℞ Lupulini 0.15
Massæ ferri carbonatis..... 0.1
Extracti nucis vomicæ..... 0.015
M. d. t. dos. No. C in caps. gel.
Sig. Two capsules before meals.

In diseases of the stomach arising on an *anatomical basis,* lupulin, although not to the extent as in the functional disorders of that organ, may frequently be employed to advantage. In the treatment of any of the three stages of *chronic gastric blennosis,* for instance, it is of special value, by slightly stimulating the mucosa, by improving the tone of the entire organ, by averting the production of undue amounts of mucus, by checking lactic acid and, to a certain degree, butyric acid formation, and by its sedative effects upon stomach, intestines, and the heart.

For the same reasons I have found the drug a valuable standby in *gastrectasia* both of mechanical or atonic origin. In many cases of moderate gastric dilatation, besides regulation of diet and certain adjuvant measures, I did not need to prescribe anything but lupulin and an occasional laxative. If the drug be administered in a liquid menstruum, as for instance in vinum condurango, or in mistura rhei et sodæ, small amounts should be ordered at one time and the patient be instructed to agitate the mixture before partaking of it.

Diseases of the Intestines.—The intestinal affections in which lupulin is particularly useful, are, as among the diseases of the stomach, the neuroses, the functional disorders. Sensory, as well as motor and secretory neuroses, are beneficially influenced by the drug, probably in a higher degree even than are the analogous conditions prevailing in the stomach. My observations as regards lupulin in intestinal diseases prompt the following statements: That if administered by the mouth, the drug should be given in capsules, that the dose should be one and a half or two times that which is recommended for the analogous gastric disease, that in disease of the colon or rectum suppositories (hollow glycerogelatin cones if possible) are to be preferred, and that the drug may be given for protracted periods without causing cumulative or other deleterious effects.

The main sensory disturbance of the intestines, *enteralgia nervosa* or neuralgia of the intestine, which according to Nothnagel is a genuine neuralgia of the mesenteric plexus, is often tractable to lupulin. Sometimes, however, enteralgia, which has nothing in common with the condition characterized by colic, appears to be a local enunciation of a neuropathic constitution. Again, in such instances, lupulin has also rendered me good service.

Opium is distinctly contraindicated in enteralgia on account of the production of obstipation, which latter may give occasion to colicky pains. I am in the habit of prescribing in the milder cases:

℞ Lupulini 0.15
Acetanilidi 0.1
Ft. caps. d. t. dos. No. L.
Sig. Three capsules every two to three hours.

Or,

℞ Lupulini 0.3
Hyoscyaminæ salicylatis 0.0005
Ft. caps. d. t. dos. No. XX.
Sig. One capsule every three to four hours.

In severer instances of enteralgia nervosa I have found of benefit:

℞ Lupulini 0.25
Codeinæ sulphatis 0.015
Atropinæ sulphatis 0.0003
Ft. caps. d. t. dos. No. XX.
Sig. One capsule every hour if necessary.

When the pain becomes less intense the lupulin-acetanilid capsule may be substituted for the last-named combination.

The *motility neuroses of the intestines,* as nervous diarrhea, peristaltic intestinal unrest, enterospasm and nervous flatulency are all more or less beneficially influenced by lupulin.

Most cases of *nervous diarrhea* are not solely due to hypermotility, but also to secretory anomalies of the intestines. The treatment of this very inconvenient disturbance should be principally dietary and physical. If a case is rather stubborn absolute rest in bed for from three to five weeks should be insisted upon. Opium, it is true, may cut short an individual attack, but it should be resorted to in extreme instances only, as it is liable to make opium-habitués, especially among women. Occasionally lupulin may be given together with tannigen, tannoform, tannopin or tannalbin. I have frequently ordered for nervous diarrhea:

℞ Lupulini
Strontii bromidi .....aa 0.15
Ft. caps. d. t. dos. No. L.
Sig. Two capsules three to five times a day.

℞ Lupulini 0.3
Pulvis ipecacuanhæ 0.02
Ft. caps. d. t. dos. No. XX.
Sig. One capsule four to six times a day.

Lupulin in combination with camphor and ext. belladonnæ or with ext. cannabis indicæ, as recommended for cardialgia, will be found very useful.

Constitutional treatment, of course, ought not to be neglected. According to indication, iron, arsenic, or quinine should be administered for protracted periods.

The excessive intestinal peristalsis of neuropaths, *peristaltic unrest* or *tormina intestinorum,* apart from constitutional therapy, is best treated by a mild nervine-narcotic like lupulin. Lupulin in daily doses of from two to four grams, or in combination as given for nervous diarrhea, will often overcome this condition. In the treatment of *enterospasm* lupulin is given in the same manner as in enteralgia or nervous diarrhea.

Nervous flatulency, which always occurs on an hysterico-neuropathic basis, is often directly due to the accumulation of swallowed air in some part of the intestinal tract, as pointed out by me some time ago (The Clinical Importance of Aerophagia, *New York Medical Journal,* Feb. 20, 1904). Lupulin with bromides is probably better in ameliorating the acute condition, as well as the underlying neuroses, than any other combination of drugs I am acquainted with. In some cases an easily digestible preparation of iron will be found a good therapeutic adjuvant. Carminatives, considering the etiology

of the disturbance, have very limited influence in overcoming nervous flatulency.

Of the *secretory intestinal neuroses* it is especially the *mucous colic,* colitis membranacea, in which lupulin, alone or in combination, has proved itself of distinct value. The condition is mostly met with in neurasthenic females; it is, however, of not infrequent occurrence in the non-neurasthenic enteroptotic individual. The affection may just as well be classified among those with an anatomical basis as among the secretory neuroses. For our purposes, however, the classification makes little difference. Of course, medicinal treatment avails the very least in this affection. We have to depend upon dietary regulation, a well-fitting adominal supporter that supports and high rectal medicated injections. An infusion of hops, alone or together with one of chamomile flowers, should be tried in every instance of mucous colic. Lupulin in this affection should be only administered in suppositories which are to be introduced high up into the rectum. There is no doubt that lupulin exerts a stimulating influence upon the colonic mucosa which enhances the latter's tone; at the same time, it reduces the nervous irritability and reflex contraction by its sedative and narcotic action and limits by its antifermentative qualities intestinal fermentative processes. As repeatedly stated, the suppositories, if possible, should have a glycerogelatinous mass for a base which melts at body temperature. This mass should be molded into cones, the hollow inside of which is to serve as a receptacle for the drug or drugs to be administered. There should be receptacles large enough to hold one or two grams of powdered material or prepared mass.

A combination which I find very useful in materially reducing tenesmus and pain, or averting paroxysms altogether, and which, at the same time, diminishes or entirely suppresses the pathological amounts of mucus and the formation of intestinal casts, is the following:

℞ Argenti iodidi 0.2
Pulvis belladonnæ foliorum..... 0.1
Lupulini 1.0
Ft. supp. (glycerogelat.) d. t. dos. X.

Sig. One suppository at bedtime, if necessary one also at midday, to be inserted into the rectum as high up as possible.

In intestinal diseases with an anatomical basis lupulin is often a symptomatic and occasionally a curative remedy. This is particularly the case in inflammatory conditions of the intestinal mucosa. Of course, in acute instances there is less occasion to test the value of this drug than in chronic cases. However, in *acute enteritis,* after complete evacuation of the bowels has been established, when a sedative-narcotic-tonic medicine is indicated, lupulin alone or in combination with opium, will render very good services. In children and the aged, periods of life in which there exists pronounced intolerance for opium or its derivates, lupulin will be found the supreme remedy. It may be combined with opium or any of the modified tannin preparations, with preparations of bismuth, with camphora monobromata, etc.

It is to be understood that in the treatment of *acute* as well as the *chronic* forms of *enteritis,* diet regulation plays the most important rôle. Medicinal treatment, especially symptomatic treatment, is often the least important because it is also the least effective. Opium, which may be very valuable in acute enteritis, has no place at all in the treatment of *chronic enteritis,* firstly, because if given for protracted periods it renders the patient an habitué, and secondly, by the artificial retention of the dejecta without diminishing the intestinal secretion, it causes a still further irritation of the diseased mucosa, the inevitable consequence of which is renewed and more violent attacks of diarrhea. The management of chronic enteritis proves frequently the task of Sisyphus. Most good yet do nonirritating astringents and antifermentatives in combination with a sedative-neurotic-tonic like lupulin. If the inflammatory process has extended to the colon, enteroclysis with an infusion of hops or with astringents (argentum nitricum in solution of from 0.2-1.0%). and the administration in suppositories of lupulin and astringents, will often yield satisfactory results.

In *proctitis lupulin* introduced by means of suppositories, together with argentum nitricum, or acidum tannicum has always rendered me good service. It promptly allays tenesmus and pain without producing untoward after-effects.

The foregoing account comprises the extent of my own observations concerning the employment of lupulin in gastrointestinal practice. It evidences that lupulin is not only a palliative, symptomatic, but oftentimes also a curative agent. Its employment, even for protracted periods, is never followed by undesired after-effects, which latter are so common with many remedies employed for similar purposes. I had no occasion to prove the therapeutic value of lupulin in a large series of cases of enteric fever. It is probable that this affection will be beneficially influenced by it. The drug, on theoretical grounds, deserves also an extensive trial in dysentery.

SOME OF THE FACTORS THAT PREDISPOSE TO PHTHISIS.

By L. P. BARBOUR, M.D.,

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Since Koch's epoch-making discovery of bacilli as the immediate cause of tuberculosis in all locations, there has been too little investigation of the influences that predispose to this disease. Not one iota of the energy given to lessening the spread of these insidious bacteria need be abated; but coordinately with this movement there ought to be more effort to lessen the predisposing causes. It is a broad field filled with intricate scientific problems and with threads of thought leading in various directions.

The study of immunity is involved in a study of predisposition. To say that a predisposition to tuberculosis exists, is only another way of saying that there is an absence of immunity. We may attack the problem by asking what causes immunity. And is there any immunity to infection by the bacilli tuberculosis? Immunity is a condition whereby the organism is able to resist successfully an invasion of specific germs. It may be natural, acquired, or artificial. Natural immunity is the natural resistance of the organism to disease. Most animals, for instance, have a natural immunity to syphilis. Immunity to some diseases is acquired by a previous attack. One who has had measles has acquired immunity to that disease. Artificial immunity to any disease is produced by inoculation with the virus of that disease. Acquired and artificial immunity may be classed together as specific immunity, as such immunity is always the result of the specific disease or virus. Do any of these forms of immunity exist in the human family regarding tuberculosis?

Again immunity may be relative or absolute. There is probably no absolute immunity to tubercu-

losis, so far as man is concerned, either natural or acquired. No one has such physiological vigor or specific resistance as to resist a sufficient number of bacilli sufficiently long continued. Moreover, there are probably no animals that are absolutely immune to tuberculosis. There are some that have a high degree of relative immunity. Those animals that are quite susceptible to the disease show under some conditions a relative immunity; perhaps it would be more accurate to say that they have less susceptibility. Rabbits, for instance, die much more quickly from a given amount of infective material when closely confined in a dark place than when in a light, open, airy space. Dogs show less resistance when poorly fed than when well cared for and fed on plenty of raw meat. This has been a matter of experimentation.

Has mankind any immunity? There is a universal belief that some people have decidedly more resistance than others, and this general opinion is without doubt correct. These people have a certain degree of immunity. Further, the same individual has at times a higher degree of immunity than at other times and conditions. The man living a reasonably active outdoor life will resist more than when closely confined in unhygienic surroundings. So, too, he will succumb more quickly to the same infection immediately after severe sickness, etc. These things lessen the degree of natural immunity. They predispose to phthisis.

Specific Immunity.—While this has little bearing on predisposition, yet it is one of the interesting threads of thought that come into the discussion. There is evidence to show that quite a degree of specific immunity may be given to animals by tuberculin injections, by the use of antituberculous serum or by inoculation with nonvirulent strains of bacilli. Do men ever acquire such immunity? There are reasons for believing that some races, some families, and some individuals have acquired a degree of specific immunity. These reasons are as follows:

1. Most bacillary diseases do produce an individual, and, where they have prevailed for centuries, a certain amount of racial specific immunity.

2. Races heretofore free from tuberculosis, such as the North American Indians, the Eskimos, etc., have shown very great susceptibility once it has been introduced among them. The Indians especially are a hardy, vigorous race. We would expect them to have a high degree of natural immunity. Yet they have proven very susceptible to tuberculosis.

3. Races like the Chinese that have for centuries lived in cities and large communities and have long been subject to tuberculosis, show more resistance than other races.

4. We continually see families without any evidence of great physical vigor, and in which we would not expect much natural immunity, the members of which nevertheless show great resistance.

If these families and races have acquired relative specific immunity it is of course through inherited influence. If there is an inherited specific immunity it is in contradiction to the ideas of past years. Even since we have rejected the teaching of direct inheritance of tuberculosis we have yet clung to the belief that the descendants of an individual having tuberculosis will be predisposed to the disease. It should be remembered that the evidence for this belief is collected from those families in which members have died from the disease. Now inherited specific immunity, if acquired at all, must be acquired in those families that have had and have overcome the disease. We know that unnumbered thousands of every generation in all civilized countries do contract tuberculosis and overcome it, often without having known of its existence. There are of course no records of these generations of recovered cases, and therefore we are not able to show positive evidence one way or the other.

That some of the children of those who have died of the disease should contract it, is of not much weight against the idea of inherited specific immunity. First, they are often subjected to prolonged exposure, and any relative immunity is overcome. Second, such children are often begotten when the parent is in an advanced stage and consequently can but lack in natural vigor.

We referred above to the production of artificial specific immunity in animals by the use of tuberculin, etc. This has already been used successfully in treating incipient tuberculosis. A further use might be made of it in increasing specific resistance in the case of individuals who have been subjected to predisposing influences or directly to the contagion.

Susceptibility.—People are susceptible to a disease if they may be affected by that disease. As applied to tuberculosis it is, like immunity, always relative; at least it is relative so far as the human family is concerned. Some are much more susceptible than others. Those who are extremely susceptible to infection are said to be predisposed.

Predisposition.—This consists in a condition of the bodily cells or juices in which an amount of infective material that leaves other persons unaffected calls forth an attack of the disease in the person predisposed. It is excessive susceptibility. Whatever lowers the resistance of the individual to the bacilli tuberculosis predisposes him to that disease.

There are certain influences and conditions of life, as some occupations, habits, unsanitary homes, other diseases, heredity, etc., that do lower the natural resistance and predispose to phthisis.

Heredity as a Predisposing Influence.—Anything in the environment of an individual that lowers the vitality of his offspring may predispose the offspring to tuberculosis. Among the conditions of the parent that produce an inherited predisposition, chief perhaps, is disease; and among diseases tuberculosis itself is supposed to be of the most importance. That a child begotten by parents weakened by advanced tuberculosis will be predisposed, is conceded by all. That tuberculosis causes a greater predisposition than any other disease inducing a like feebleness in the parent, is not true. There is no "specific predisposition" in the child of the consumptive. As has been pointed out, the occurrence of tuberculosis in children of consumptive parents is due to the opportunity for infection rather than to unusual susceptibility. As suggested in the remarks under inherited immunity, there are reasons for believing that children of parents with an incipient phthisis, more especially of parents recovered from tuberculosis, are not more, but less, susceptible.

Children of very old or of very young parents are usually predisposed to disease. Weakening of the parent by long-continued hardships, by insufficient foods, by excessive sexual indulgence, by alcoholic or other drug intoxication, or by a hundred and one other causes, may act in a like manner.

Of more immediate importance to the family physician are those environments affecting the individ-

ual directly in an adverse manner and producing a personal predisposition.

Crowded and Unsanitary Homes. — We know that this condition is most favorable to the spread of the germs, and this detracts from the weight of this factor in predisposition. Nevertheless, such a condition of life does lower the component cell force of the individual and renders him more susceptible to bacterial invasion; and we believe especially susceptible to infection by the bacilli tuberculosis. Inhabitants of the dark, crowded tenements are pale, weak, and wanting in all forms of vigor. One hesitates to use the comparison of the "prepared soil" so much abused, but it expresses a truth applicable here. The want of sufficient oxygenation prepares the soil for this particular seed. This statement is not supported by observation only. Animal experimentation has proven it true. De Toma, for instance, reports that only animals confined in the dark and insufficiently fed become tuberculous by inhalation.

The work now being done in the large cities to improve tenement houses, while not primarily intended as an antituberculosis movement, will be of great importance in this direction. More light and better ventilation in the houses, frequent playgrounds for the children in the congested districts, will go far to lessen this predisposing factor. The things that predispose to phthisis are often combined. With crowded homes we frequently have also—

Insufficient Food and Food of Poor Quality.— This possibly is of even greater influence in causing consumption than are the dark and ill-ventilated homes. The highest vigor can exist only along with a sufficient amount of good food. Ill-nourished people are susceptible to all sorts of disease. There is evidence that insufficient food directly increases the susceptibility to consumption. From the beginning of the second quarter of the last century, there was great increase in the prosperity of the working classes throughout England. This resulted in better living conditions, and especially in much better foods. The increased consumption of fresh meat was especially noticeable. Now during this period there was a decided decrease in the number of deaths among these very people. This was before the discovery of the specific germ and consequent warfare against its spread. True, there was coincident better housing of the laboring classes. As suggested above, the things that make for and against tuberculosis often occur in groups.

In further support of a poor food supply as a cause of tuberculosis, may be cited the increase of the disease among the negroes of the South since the Civil War. This increase is very marked. Previous to the war the slaves were as a rule well fed by their owners. Since the war they must needs shift for themselves, and for most of them it has been a poor shift. The difference in housing is not nearly so marked as the difference in quality and quantity of food. True, there has been an increase of alcoholic and other drug addictions among them and largely increased irregularity of habits, all of which have had an influence for the worse.

Unsanitary Workshops and Factories. — This heading might well be classed with that of unsanitary homes in so far as the workshop is merely "crowded and illy ventilated." There is a class of factories, however, in which there is much dust and grit, the inhalation of which seems to render the lung tissue vulnerable. Workers in some of the ore mills of our Western country are subjected to this predisposing cause. Those who persist for many years in these mills where the gritty dust must be breathed almost surely contract phthisis. Stonecutters, filecutters, etc., are others of this class.

Age.—Children are more susceptible to most bacterial diseases than are adults. It is probable that the proportion of tuberculosis, taken in all its forms, is greater among children under eight than it is at any other eight years of life's span. The glandular forms are more frequent in children, the pulmonary less frequent than in later years.

Sex.—Excessive child-bearing and prolonged lactation undoubtedly increase susceptibility to consumption. Otherwise sex has no predisposing influence.

Climate.—A cold, damp climate, by causing more indoor life, indirectly predisposes to tuberculosis. Further, such diseases as bronchial catarrh, pneumonia, etc., are more frequent in such a climate, and these diseases increase the susceptibility to consumption.

Disease as a Predisposing Cause.—Any disease that leaves a weakened subject surely has to that extent a predisposing effect. Those diseases that act especially upon the mucous membrane of the bronchial tubes and lungs, together with some other diseases, may have a special predisposing effect. It is difficult to determine positively any such effect, but it seems probable. First, the frequency of such diseases preceding consumption. Second, their effect upon the tissue involved can reasonably be supposed to make it more vulnerable to succeeding infection.

Pleurisy.—This is not a rare precursor of tuberculosis. In some cases the pleurisy may be of tuberculous origin, secondary to a previously existing but undetected tuberculous disease of the lung. There are, however, cases of nontuberculous pleurisy followed by pulmonary tuberculosis. It is difficult to determine whether the pleurisy in such cases is merely the first evidence of a general lack of resisting power to disease, which is further evidenced by the tuberculosis, or whether the often resulting partial immobility of the lung specially predisposes to phthisis.

Diseases of the Heart. — Many years ago Dr. Brehmer called attention to the relationship between a small, weak heart and the development of consumption. He believed that a heart small in proportion to the lungs was one of the chief causes of the disease. This was before the discovery of the *Bacillus tuberculosis.* It seems reasonable, in the light of the bacillary origin, that a heart not capable of keeping up a vigorous pulmonary circulation might well be a predisposing cause to the infection of that lung. Certain it is that many consumptives have small and weak hearts. Families in which phthisis is frequent often show this characteristic. It is well known that many athletes succumbed to the disease. The excessive exertion often results in distention of the heart, with resulting weakness of that organ. I think it may be definitely stated that a weak heart is one of the chief predisposing causes of phthisis.

Diabetes. — This disease is generally associated with diminished activity of the heart, and of all constitutional diseases is first in predisposing to tuberculosis. It is well known that sugar added to the culture media produces a more abundant growth of bacilli. It is possible that the sugar in the system

of the diabetic plays its part in making him more susceptible.

Worry and Grief.—The number of patients who date their disease to a time of especial grief or of excessive worry is noticeable. It has seemed to me, however, that the breakdown of the patient usually comes too close to the time of stress to feel that it is the cause of the tuberculosis. Rather it has seemed that the tuberculosis already existed and the worry or grief has been the immediate cause of its activity. However, anything that may cause the sudden activity of an existing tuberculosis would presumably predispose to the first infection.

Excessive Use of Alcohol.—The habitual use of even moderately large amounts of alcoholic liquors undoubtedly predisposes to tuberculosis. We base this statement upon the physiological effect of alcohol. H. C. Wood says: "In large amounts it is certainly depressant to the cerebral and spinal ganglionic cells, as well as to the nerve trunks; it depresses the respiratory centers; upon the heart it acts as a depressant or paralysant; it disturbs all nutritive processes." All these actions of alcohol make for susceptibility to disease. That *excessive* use of the drug tends to predispose, is a matter of common observation. In the case of habitual drunkards we have not only the direct effect of alcohol upon the system, but also, in most cases, the resulting exposure, insufficient food, and often other excesses added to the effects of the alcohol. Societies for the prevention of the spread of tuberculosis would do well to add teetotal principles to their platform.

This has not been an attempt to write of everything that could possibly increase the susceptibility of the individual to phthisis, but only of the more active and more common. Would it not be well to add a discussion of these things to the literature prepared for the laity, teaching how to prevent the spread of tuberculosis? At present this literature is confined to the discussion of measures aimed to prevent the spread of the specific germ. To lessen the vulnerability of the individual is a close second in importance, if second.

Another point of practical worth regarding the factors that predispose to phthisis, is the application in the treatment. Chronic tuberculosis is a disease of alternating advance and quiescence. By keeping the patient in the "straight and narrow path" of healthful living, we can in most cases avoid the lighting up of the quiescent tuberculosis. We need to be alert to see that nothing is done that makes against the best possible health. Those things that predispose to the first infection will also tend to further infection and to activity of the focus already existing.

TUBERCULOUS PERITONITIS.*

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Tuberculous peritonitis is dependent upon an infection by means of the bacilli circulating in the blood, or upon an extension of tuberculous inflammation, or ulceration from adjacent organs. All agree that the tubercle bacilli are the invariable cause of the disease, but the source of invasion admits of more and various opinions; the route by which they reach the peritoneum is frequently difficult or impossible to determine, but is evidently by many different sources. Dieulafoy believes that the most frequent source is through the intestines, where the bacilli have been introduced by sputum or food, infected milk, or meat. Clinically I do not believe that we can eliminate bovine tuberculosis as a source of infection in man. The work of Salmon, Ernst, and a host of other accurate observers has shown the possibility of infection through the milk and food supply. The structure of the large follicles of the intestines and of Peyer's patches corresponds closely to the follicles of the tonsils. We know that next to the lungs the most susceptible localities to tuberculous invasion are the tonsils, where the lymphatic tissue lies directly exposed on the mucous surface; in the intestines and appendix practically the same condition exists. The bacilli may attack the intestines primarily and the peritoneum next, or being absorbed by the superficial lymphatics of these structures, may attack the peritoneum first; this hypothesis is confirmed by the experience of Wesner and Cornil. Unquestionably the bacilli are capable of passing through the walls of the intestines without a primary lesion of the bowel, and thus reaching the peritoneum without leaving any trace of trouble at the atrium of invasion, as it so often does in the pharynx when the cervical glands become infected. Primary tuberculosis of the intestines occurs in three forms: (1) Multiple ulcers, due to inoculation from sputum; (2) single ulcerations, especially in the ileum, which have a marked tendency to heal with stricture formation; such cases are usually seen with obstruction; (3) conglomerate tuberculosis, usually at the ileocecal junction, giving rise to a tumor and having the gross appearance of carcinoma; the last two forms are usually primary and are due to accidental inoculation. We can best study inoculation tuberculosis in the surface infections, such as the finger of the demonstrator of anatomy, or the infection so often occurring in students in the dissecting room; here, regional lymphatic invasion usually occurs, with a tendency to remain local, and the tubercle bacilli may be demonstrated in the glandular involvement.

We will consider a most fruitful source of tuberculous peritonitis, and it is not impossible that this is the most frequent source of infection, namely, through the Fallopian tubes in woman. Abdominal surgeons have taught us that the disease occurs more commonly in females than males, owing to the fact that the Fallopian tubes are a favorite seat for primary tuberculous infection. They seem to have a special affinity for the tubercle bacilli, in this respect nearly resembling the alveoli of the lungs. The Mayos found localized tuberculosis of the intestines about equal in males and females, while they found tuberculous peritonitis four times as frequent in women. In the last sixteen cases reported, they found eleven in women, in nine of whom the origin of infection was in tuberculous tubes; one in the appendix, one unlocated; five were in men, three with tuberculosis of the appendix and cecum, two unlocated. In this series of cases over 56 per cent. were produced by tuberculous tubes. As Hegar pointed out some years ago, the tubes are predisposed to tuberculosis by their spiral form and pleated mucosa, which favor stagnation of secretion. A preliminary catarrh seems to enhance the danger of infection, the sources of invasion being numerous, such as ascending infection, either through the blood or lymph vessels. It is possible that tubercle bacilli finding their way to the peritoneal cavity from any source at once attack this favorable soil. Pinner's experiments show that fine particles of lampblack introduced into the abdominal cavity find their way

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through the tubes into the uterus; likewise that tubercle bacilli are capable of migrating through the walls of the Fallopian tubes as well as through or from its fimbriated ends. The normal constriction and valves of the tubes, about five-eighths of an inch from the uterus, favors the arrest of the bacilli at this point. Clinically this is the most frequent area involved, and the pathological changes indicate that the primary focus is in the tubes. It is also at this point that the gonococcus infection is arrested and retained sufficiently long to destroy the mucosa and produce the stricture which is the most prominent etiological factor of gonorrheal pyosalpinx. In the male we may have a migration from the seminal vesicles, the epididymis, the vessels of the spermatic plexus through the ampullar ends of the vas deferans, and the lymph vessels of the latter.

It must be borne in mind that we may have extensive disease of the peritoneum without involvement of the tubes. Other sources are the blood current, the lymph current, especially from the mesenteric glands, the pleura, and genitourinary tract. As a rule it may be stated that the most common source of infection in males is, first, the intestinal tract, next the genitourinary tract; and in females, the genital tract, especially the tubes.

Any previous condition which tends to weaken the resistance of the peritoneum will act as a predisposing cause; for example, acute peritonitis, pelvic hematocele, enteric fever, and especially the puerperium. Kelly believes that the influence of parturition has not been sufficiently recognized. In this connection we must also keep in mind the fact that as a rule it requires either an inherited or acquired tendency to the disease. The peritoneum is greatly exposed to the danger of tuberculous infection. Tuberculosis as a rule attacks this membrane in one of two types; in the one it is accompanied by a widespread formation of free connective tissue, with multiple adhesions between the various viscera; in the other it is associated with profuse exudative processes. Very frequently the disease starts with the perforation of a caseous mesenteric or retroperitoneal gland, the process becoming diffused by means of the peristaltic activity of the intestines, or localized, if adhesions have previously been formed. In the same fashion tuberculous ulceration of the intestines may give rise to disease of the peritoneum, especially the slowly perforating type of ulcers. In case of sudden perforation, a rapidly fatal peritonitis is set up by the pathogenical microorganisms which escape into the peritoneal cavity. Genital tuberculosis, especially in women, is very frequently the point of departure for a peritoneal tuberculosis. The bacilli are especially apt to find their way out of foci situated in the distal extremity of the tubes unless the peritoneum has been previously walled off by the formation of a false membrane. The organisms find their way either through a free opening or through the lymph spaces in the mucous membrane, notwithstanding the opposing action of the ciliated epithelium of the tubes. The tuberculous process may be transmitted from one serous membrane to another: for example, from the pleura to the pericardium and the peritoneum, or vice versa. In the case of rupture of a tuberculous focus into the blood stream, the serous membrane may participate in the general disease, with the formation of multiple miliary tubercles.

Age is an important factor. During the period from fifteen to forty, corresponding with the menstrual activity in women, it is most frequent, although it is not uncommon in children under ten years of age. After the age of menstrual activity it rapidly decreases in frequency. In America, negroes are more prone to the disease than white people. The symptoms vary considerably in certain special features from other forms of peritonitis. It presents a symptom complex of extraordinary diversity. The process may be latent and not cause a single symptom. Such cases are met with accidentally in operating for other conditions. In other cases the onset is so sudden and the symptoms so pronounced that erroneous diagnosis of enteritis or strangulated hernia may be made. Instances are recorded where the operation for strangulated hernia has been performed. Many cases are ushered in with the symptoms of acute peritonitis and abdominal tenderness. Other cases resemble typhoid fever very closely, and may lead to error in diagnosis; ascites is frequent, but the effusion is rarely large and may sometimes be hemorrhagic. In this form the disease must be differentiated from acute miliary cancer, cirrhosis of the liver, and chronic simple peritonitis. It must not be forgotten that tuberculous peritonitis may be secondary to cirrhosis of the liver in a considerable percentage of cases. Tympanites may be present in very acute cases, when it is due to loss of tone in the intestines, owing to inflammatory infiltration, or it may occur in old, long-standing cases where universal adhesion has taken place between the parietal and visceral layers. Fever is a marked symptom; in acute cases the temperature may reach 103° or 104° F. In the more chronic cases subnormal temperature is common, and for days may not rise above 97° F.; the morning record may even be as low as 95.5° F. Occasionally pigmentation of the skin is present and has in some cases led to confusion with Addison's disease (Osler).

A striking peculiarity of tuberculous peritonitis is the frequency with which either the condition simulates or is associated with tumor, and this may be: (a) Omental, due to puckering and rolling of this membrane until it forms an elongated, firm mass attached to the transverse colon and lying across the upper part of the abdomen. This cordlike structure may also be found with cancerous peritonitis, but is much more common in tuberculosis. A resonant percussion note may sometimes be elicited above the mass. Though the tumor is usually situated at the umbilicus, it may be present in the right iliac region. (b) Sacculated exudation, in which the effusion is limited and confined by adhesions between the coils, the parietal peritoneum, mesentery, abdominal, or pelvic organs. The encysted exudate is most common in the middle zone, and has frequently been mistaken for ovarian tumor. It may lie completely within the pelvis, associated with tuberculous diseases of the Fallopian tubes. (c) In rare cases the tumor formation may be due to great retraction or thickening of the intestinal coils. The small intestine is found shortened, the walls enormously thickened, and the entire coil may form a firm knot close to the spine, giving on examination the idea of a solid mass. Even the entire bowel from the duodenum to the rectum has been found forming such a hard, nodular tumor. A case has recently occurred in the writer's experience in which it was found that the entire intestinal tract was contracted to a fibrous cord in which the lumen of the bowel would scarcely admit a small lead pencil, the walls being greatly thickened.

The diagnosis of these peritoneal tumors is sometimes very difficult. The omental mass is a less frequent source of error than any other, but a similar condition may occur in cancer. The most important problem is the differential diagnosis of saccular

exudation from ovarian tumor. In fully one-third of the recorded cases of laparotomy in tuberculous peritonitis, the diagnosis of cystic ovarian disease has been made. The most suggestive points for consideration are the history of the patient and the evidence of old tuberculous lesions. The physical condition is not of much importance, as in many instances the patients have been robust and well nourished. In the diagnosis, the association of tuberculous conditions of the other organs should be carefully considered.

The surgical treatment of tuberculosis of the peritoneum involves the following propositions: (1) To remove or shut off the source of supply to the peritoneum of new tuberculous débris. (2) To remove the products of the infective process from the peritoneum. (3) To remove the tissue proliferation for the encapsulation of the foci already present; and (4) to avoid mixed infection (Murphy). Too early intervention is unwise, since the tuberculous process may be still in a period of evolution. The tendency of surgeons at the present time is to operate after the pain and discomfort from the ascites and adhesions have become so marked that relief is imperative. The first surgical work for tuberculous peritonitis dates back to 1862, when Spencer Wells performed a laparotomy for supposed ovarian cyst and found to his astonishment that the patient was cured. Laparotomy was advised as a therapeutic measure by König in 1884; during the next fifteen years simple laparotomy with evacuation of fluid and closure of the wound gave a large percentage of recoveries, various surgeons reporting from 50 to 75 per cent. of cures from simple laparotomy. Various theories have been advanced as to how the process of recovery is brought about. Veit claims that by evacuating the effused fluid suddenly and completely, a new effusion of normal serum occurs immediately, which is possessed of bactericidal power in the highest degree, hence the struggle against the microbes will have the best chance of succeeding; if, however, fresh bacilli continue to penetrate into the peritoneum, or a tuberculous focus elsewhere in the body partly neutralizes this antitoxic power of the serum, healing cannot result. In contradistinction to this theory, Murphy believes that effusion of new serum following laparotomy does not possess antitoxic properties which destroy the bacilli; on the contrary, it possesses equal or greater toxicity than the original serum; the curative properties are brought about by inflammatory reaction and the most active cell proliferation; it is this tissue proliferation which overwhelms and encapsulates the tuberculous foci on the surface of the peritoneum.

Personally, I believe that simple laparotomy, with removal of the fluid, acts in two ways, first, that in tubal disease the fluid mechanically separates the fimbriated extremity of the tubes from the surrounding tissue; second, after removal of the fluid, contact with neighboring structures with resultant adhesions may follow; this prevents peritoneal reinfection and confines the product to the pelvis. It also accounts for the lateral pelvic masses which are sometimes developed after the disappearance of the fluid. It also enables nature to bring her resources to bear on a localized focus and develops the self cure that has been noted in so many cases. The operative manipulation causes the serum to be poured out, and thereby increases the peritoneal power of absorption (Mayo).

To Murphy and the Mayos belongs the credit of demonstrating that in a large percentage of cases of tuberculous peritonitis with ascites, the foci of infection are in the Fallopian tubes and appendix. Acting upon the knowledge thus acquired, they have in their later cases removed the tuberculous tubes and appendix when so found, with the result that they have cured a large percentage of cases that were formerly only temporarily benefited by simple laparotomy. Mayo says, "Of the twenty-six radical tubal operations we have performed on cases of tuberculous peritonitis, twenty-five recovered; of these, seven had been operated upon by simple laparotomy from one to four times previously. In not a single instance as yet has another operation become necessary, and as contrasted clinically with the preceding group of equal numbers, the favorable results are most striking. There is usually a temporary continuance of the peritoneal effusion, but reinfection has not occurred." The outcome where the appendix has been the seat of the trouble has been favorable, but not so brilliant as in the tubal form of the disease.

The percentage of recoveries in tuberculous peritonitis from operative measures must depend largely upon our classification of cases. The surgery of the disseminated serous variety, which in the great majority of cases is associated with, or due to tuberculosis of the tubes, gives us the most brilliant results, while in the dry and ulcerative forms of the disease it is followed by high mortality and little is accomplished by surgery. In the inflammatory, localized suppurative form, the operative outcome is quite favorable, while in the suppurative multilocular cystic variety but few recover.

A word in regard to the technique of operation. Under thorough antiseptic precautions the fluid is evacuated and the general abdominal cavity is packed off in the usual manner. The pelvic organs, appendix, and cecum are examined. If the Fallopian tubes, appendix, and cecum are diseased, they are removed, the stumps and walls of tuberculous abscess cavities are dried, and a little sterile iodoform rubbed in and the abdomen closed. In extensive tuberculosis of the bowels, with widespread adhesions, resection is a hazardous procedure, and is usually a futile undertaking. It is often followed by fecal fistula when the patient survives the operation. In such cases the infected area should be excluded from the fecal current by short-circuiting the intestines. The tuberculous process in the excluded portion ceases to advance and often heals, the patient's life may be prolonged and he may be relieved of most of his disagreeable symptoms.

From the facts already stated, I think we are justified in believing that failure of simple laparotomy with evacuation of the fluid exudate in tuberculous peritonitis, to maintain its proper standing in surgery is due to reinfection from lesions in the mucous membrane of the organs enumerated. We have been treating a symptom instead of removing a source of disease. It is true that at times the lesion cannot be discovered, but it is equally true that radical operation on the primary lesion in tuberculous peritonitis will greatly increase the percentage of cures and prevent reinfection of the peritoneum.

In conclusion, we are forced to believe that tuberculous peritonitis, like septic peritonitis, has its origin in a local focus in nearly every case. Peritoneal reinfection may be prevented if we are successful in removing the local focus. Whether the patient will remain cured must depend upon whether the local focus thus removed is primary or secondary; if primary, we can hope for good results, but if secondary, it must depend upon the possibility of cure of the primary seat of the disease.

AN URGENT PLEA FOR THE USE OF LARGER DOSES OF ANTITETANIC SERUM FOR LOCKJAW, WITH A CASE IN POINT.

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In view of the yearly Fourth of July fatalities and the high mortality rate of tetanus, the history of the following case may be opportune and instructive. Furthermore, because of an eleven years' connection with the Health Department as an antitoxin administrator, I have been impressed with the fact that the general practitioner does not give large enough doses of this life-saving remedy for diphtheria. Again, surgeons as a rule question the utility of antitetanic serum. Even J. B. Murphy, after giving three full doses, says that "treatment by antitetanic serum is unavailing." He does not state, however, the amount of his full doses.

When, therefore, a case of tetanus occurred in the line of some industrial institutional work that I was doing, I drew a parallel inference with respect to the antitetanic serum and proceeded to administer the latter by both intraspinal and subcutaneous injections to the amount of from 60 c.c. to 80 c.c. daily to begin with—a total of 650 c.c., of which 520 c.c. was given subcutaneously and 85 c.c. subdurally and 45 c.c. directly into the wound. I reasoned that if the poison traveled from the latter along the nerves, perhaps the antitoxin would take the same route and thus limit the disease process. This injection was so painful that I did not give it more than twice. After five days of this treatment the man was comfortable, with flaccid muscles and less rigid jaw. Upon stopping the use of the serum greater trismus and general muscular rigidity and spasm ensued. He also complained of what he called contractions of the back and legs.

Dr. Arthur Price, who saw the case with me, discouraged the use of serum, saying that in his and other surgeons' experience at Cook County Hospital it had proved useless. I claimed that its ineffectiveness was probably due to inefficient doses, and proposed to use it in large amounts both by subcutaneous injection and spinal puncture. In two days I proved to the satisfaction of Drs. Price and Hayden that the man not alone had not grown worse, but that there was even slight improvement.

The man was so rigid and we were in such fear of inducing convulsions that he was not raised when the spinal punctures were made and no cerebrospinal fluid escaped. Despite these daily intraspinal injections of 20 c.c. no cerebral pressure symptoms occurred. There was, however, a slight rise of temperature and pain was felt in the neck and head after each cervical spinal injection. After giving a few such, at the suggestion of Drs. Price and Hayden I employed lumbar punctures only. Subcutaneous injections were also given daily almost continuously up to the third week. It was remarkable with what ease the spinal canal was entered and how little pain the injection gave the patient.

Chloroform was given at the first puncture only, and with the view of producing jaw and general muscular relaxation. A few whiffs had likewise been given during the first convulsion that occurred while I opened up the wound that from a recurrent painfulness, redness, and swelling, seemed to be the seat of the tetanic poisoning. This was not the original punctured wound between the dorsal heads of the second and third metacarpal bones, but a counteropening made for drainage in which one catgut suture had been placed. This catgut had not absorbed properly in other wounds from which I later removed it in several instances, but as I had no other at hand, I was obliged to use some from this same lot for a spouting vessel. I am inclined to believe, although I cannot prove it, that this catgut was the cause of the tetanus that occurred nine days after this man's discharge from the hospital with both wounds healed.

Before proceeding to the detailed history of the case I also wish to give Drs. Hayden and Harvey E. Mock credit for their careful examinations, care, and records supplementary to this successful issue.

I also wish to add that for five days chloral and bromides were given in daily decreasing doses, and elimination was secured by colonic flushings, laxatives, baths, and massage.

I realize that this was one of the subacute or chronic cases of probably long incubation period, of which, according to V. Schuchman, 47 per cent. recover without serum and 80 per cent. with serum administration. But I cannot believe that a complete recovery could have taken place in so short a time as four weeks, and that at the end of six weeks the man could have been back at work trucking.

He suffered severely from serum erythema and muscular and joint pains. Two months after his recovery from tetanus, he is suffering from the first subacute attack of rheumatism that he has ever had. Probably he has been made susceptible by the attack of lockjaw, the use of such large amounts of antitetanic serum, or both. Welcome will be the day when serum can be largely separated from the antitoxin, so that the deleterious serum effects will be eliminated.

E. B., 45 years old, muscular man, trucker. No venereal or alcoholic history. There was a small punctured wound in the dorsum of the left hand at the interspace between the heads of the first and second metacarpal bones. This was freely opened up and a subsequent lymphangitis and cellulitis received surgical attention for thirty-eight days, when he was discharged cured. The Bier suction or passive congestion method supplemented our surgical treatment, and materially hastened granulation of the wound as well as reduced the swelling and redness of the forearm. Not having the regular Bier apparatus at hand, we devised one, namely, using a bicycle pump, a large glass irrigator, a rubber glove, and some rubber tubing for this purpose. Nine days after discharge he returned with swelling and redness of the same hand and entire arm, with tenderness over the counterincision that had been made some weeks previously. I opened up the latter again, packed same with iodoform gauze, and applied large hot alcohol dressings. While doing this he had a typical tetanic convulsion on the table. Before and after this he suffered from pronounced trismus, risus sardonicus, opisthotonos, and such general muscular spasm that there was no question as to the diagnosis. He had had fearful pain and cramps in his back and legs for three nights, so severe that he walked the floor.

We placed the man in a dark, quiet room, with night and day nurses. His jaw was firmly locked, leaving a fourth of an inch aperture only. He was suffering from opisthotonos, general muscular rigidity and spasm, and showed all the signs and symptoms of tetanus. He remained in the hospital for one month, when we discharged him, well, sending him for a two-weeks' trip to the country for absolute recuperation. At the end of six weeks he returned to work as a trucker.

He received daily colonic flushings and sponge baths. For five days he received ten grains of chloral hydrate and 30 of sodium bromide. For the first two days, at four-hour intervals, for the third and fourth days at 4 P.M. and 8 P.M., and finally but once a day. He took liquid nourishment well, and no other until the eighth day, when he was able to take mashed potato and milk toast with a poached egg. Soft foods were continued for four or five days longer, when upon the fifteenth day he was able to chew beefsteak. From thence on he was regularly on a solid diet. There was a leucocytosis on the first day of 13,150, and, upon his discharge, of 9,450; hemoglobin, 80 per cent. The first count was made within six hours after the injection of the antitetanic serum; the second count was made eighteen hours after the injection of the same; another count was made on April 16: hemoglobin, 80 per cent., white corpuscles, 18,600.

The urine was examined four days after his entrance: Color, dark red; reaction, acid; specific gravity, 1,028; albumin, none; sugar, none; amorphous phosphates and sediment and cells.

For the first five days his temperature ranged from 98° to 99°; his respiration was from 20 to 24 to 36, and his pulse ranged from 78, 82, and as low as 76.

On April 11 at 2 P.M. I injected 10 c.c. of antitetanic serum by lumbar puncture. At 4 P.M. a subcutaneous injection of 20 c.c. of antitetanic serum was made. On April 12, in addition to the subdural administration, I injected 15 c.c. directly into the wound. I did this instead of opening up the brachial plexus and injecting into it, reasoning that since the poison traveled through the radial and ulnar nerves into the brachial nerve the antipoison or antitetanic serum would travel the same course through the brachial plexus.

The last injection of 20 c.c. was given on April 25. From that time there was continued improvement until May 2, when we sent him out-of-doors, where he remained most of the day during pleasant weather until his discharge. He complained of so much pain and stiffness in the ankles and walked with such difficulty that we gave hot footbaths and massage. There was pronounced tenderness along the brachial nerve, and much pain in the forearm, arm, and shoulder for some weeks.

On May 13 he was discharged from the hospital and sent to the country.

Before leaving Dr. Harvey E. Mock made an examination of the reflexes, which were found to be as follows: Patellar reflex of left leg was normal; patellar of right leg was greatly exaggerated; it was this leg that had given him the greatest trouble. Elbow reflexes normal. The plantar cutaneous reflexes were normal; Babinski negative in both feet; cremasteric normal although not marked; abdominal reflexes were normal. There was pupillary reaction to both accommodation and light. Taste was normal. There was a small area on left side of the face just in front of the ear, about one inch square, where there was complete loss of pain sense and delayed touch sense. The upper border of the zygoma formed the upper border of this area and it extended over a distance of one inch in front of the left ear.

May 15.—Still walked stiffly from pain in ankles (spastic gait) and complained also of pain and stiffness of left arm. Could not flex forearm upon arm. Tenderness upon pressure of brachial and ulnar nerves. Slight pain but no stiffness of left masseter muscle.

May 25.—All these signs had disappeared, except nerve tenderness.

June 1.—Appeared and felt perfectly well. Had been for two weeks in the country where he regained lost flesh. Returned to work as trucker six weeks after the onset of the disease.

DIPSOMANIA.*

By CHARLES J. DOUGLAS, M.D.,

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MEDICAL DIRECTOR OF DR. DOUGLAS' SANATORIUM

In the discussion of obscure pathological conditions, especially of those relating to the nervous system, clear definitions are of great importance. Dipsomania is one of those ailments that is sadly in need of a definition that will not only state what it is, but also what it is not, and will clearly mark out its boundaries. Where shall we run the line of demarcation between the mere habit of drinking and the disease of dipsomania? This disease clearly affects the nervous system and is often as uncontrollable as epilepsy, and yet every man who occasionally drinks wine with his dinner is not a victim of the disease, although he is looking in that general direction, and may get there in time. We cannot define it as a state of alcoholic intoxication, for many men are constant sufferers from some of the symptoms of dipsomania who are sober most of the time. The craving may be there, although resisted for a time or temporarily obliterated. Nor can we say that it is a craving for liquor as a palatable beverage, for distilled liquors are almost universally obnoxious to the taste of drinking men. Neither is it a weakness of the will nor of morals nor of intellect, for men of unusual strength in all of these particulars are often victims of this disease. Nor is it essentially a disease of the stomach or liver or kidneys, although any one or all of these organs may be involved. With these limitations in view, I will venture to suggest the following as a definition of dipsomania:

An abnormal demand of the nervous system, either constant or periodic, for the drug action of alcohol—a demand so strong that the patient takes the alcohol in spite of his earnest wish and effort to avoid it.

The last clause of this definition is an important one. If a patient can voluntarily abstain from the use of alcohol one year, he has either been cured of dipsomania, or he never had it. The mere habit of drinking alcohol, like the habit of drinking milk, can be abandoned at any time without any serious effort of the will. But dipsomania, the disease, makes the strongest wills bend to its behests.

It is a curious fact that most alcoholics deny having a "craving" for alcoholic beverages. "The abnormal demand of the nervous system for the drug action of alcohol is so subtle and deceptive in its nature that its victims do not recognize it, and are themselves mystified as to why they drink when they have resolved not to, and were so sure they would not. A man whose word is as good as his bond will promise in the morning that he will not take a drink that day. Perhaps he never made a promise more seriously, and felt absolutely sure that he would keep it. But by night he is intoxicated. After he has come to himself ask him why he did it and you will find that he is unable to give a reasonable explanation. As a rational human being he may feel that it is incumbent upon him to give some excuse for his

* Read before the American Medical Society for the Study of Alcohol and Narcotics, at Boston, June 6, 1906.

conduct, and he may reply to your question by saying that the weather was cold, or it was hot, or he met a friend, or he didn't meet a friend whom he expected, or some other equally foolish excuse. But in point of fact the man had, without knowing it, a good and valid reason for getting drunk that day, and that reason is that he is a diseased man. There is a pathological condition of the nervous system that caused an abnormal demand for alcohol. He may be perfectly sound in every other particular, but in this one he is an invalid. He thinks he has no "craving" for liquor, but somehow he gets drunk, notwithstanding his wish not to. An example will illustrate this peculiar phase of our subject:

Several years ago a gentleman of high character and wealth came to my sanatorium to consult me regarding himself. He said, "I drink to excess, and it is abhorrent to me, and I would gladly do anything to stop it. But I fail to see what a physician can do in my case, for I have no 'craving' to be cured." I asked him to state the circumstances of his drinking, and he replied that frequently he would have a restless feeling evenings and a desire to mingle with his friends, and consequently would go to the club for a chat with his business acquaintances. He had no conscious thought of drink. But after reaching the club drinks were naturally proposed, and in his case intoxication resulted. I then asked him if, when he had this restless feeling, he ever sought the society of friends who did not drink. After a moment's pause he said, "I never thought of it before, but I believe I never do." He was really seeking drink when he thought he was craving for the society of his friends. A clear case of dipsomania. The abnormal demand for alcohol was there, but he did not recognize it. He stayed with me under sanatorium treatment several weeks, and has been a total abstainer ever since.

Broadly speaking, the boundary line between the habit of drinking and the disease of dipsomania is passed when the patient has ceased to be able to abstain any length of time at will, and has reached the point where he drinks regardless of his earnest desire and effort to abstain. But the patient seldom realizes when this line is passed.

Previous to the nineteenth century inebriety was generally regarded as a crime to be punished, rather than as a disease to be cured. Our own great Dr. Benjamin Rush, whose breadth of wisdom has illumined so many subjects, was one of the first to call the attention of the medical profession to the fact that inebriety is a disease. As formerly the insane were merely chained as a menace to society, without much attention to rational treatment or humane nursing, so the alcoholic has been classified as a criminal rather than as an invalid. But it has now become well established in medical circles that dipsomania is a disease, and as such is entitled to medical care. This view was well stated many years ago by that eminent physician, Dr. Valentine Mott. He said: "In my professional life of over forty years I have accumulated facts enough to prove beyond all doubt that inebriety is a disease, affecting every membrane, tissue, and nerve of the human mechanism, producing in its victim a compound fracture from the crown of his head to the sole of his foot, as well as a mental and moral dislocation."

The first institution in the world for the medical treatment of alcoholism was built by the State of New York at Binghamton, in 1858. It was established as the result of a petition to the Legislature signed by over a thousand physicians, under the leadership of Dr. J. Edward Turner. To the zeal and intelligence of this one physician is due the credit for this initial establishment. The ceremony of laying the cornerstone was conducted by a group of brilliant and distinguished men, and letters were received from the President of the United States and members of his cabinet. Edward Everett, then at the zenith of his fame, delivered the principal address, in which he declared, with true prophetic vision, that the work there begun would be taken up by other communities, until the principles there established would be utilized as a blessing to all mankind. This prediction has proved correct. As early as 1863 Gov. Andrew, in his address to the Legislature, said: "Drunkenness is a disease as well as a sin. We have long since legislated for its punishment; let us no longer neglect to provide for its cure. By every motive of humanity and reason, by every law of duty, it challenges our consideration."

A few years later a joint special committee of the Massachusetts Legislature brought in a report in favor of the medical treatment of alcoholism, in which they say: "We know these patients cannot be successfully treated at home; they ought not to be associated with criminals nor with the insane; neither should they be neglected."

In 1870 the late Dr. N. S. Davis, one of our most distinguished American physicians, said in a published address: "If the inebriate is the victim of a positive disease induced by the action of an alluring and deceptive physical agent, alcohol, will any number of moral lessons addressed to his intellect, or any amount of denunciation hurled at his degradation and his vices, cure or reform him? Or will his arrest, arraignment in a police court, and extortion of the few dollars he has left, as a fine, eradicate the disease that is preying upon the most delicate parts of his organization? Abundant experience through the civilized world answers these questions in the negative. The treatment demanded by the nature of inebriation and the interest of humanity is the same in kind as that awarded to the sick and insane."

The seed sown by these and many other eminent physicians is now bearing a beneficent harvest. Their contention that dipsomania is a pathological condition, and a curable one, is now generally accepted, and many private sanatoria are now established throughout the country, where this disease is being scientifically treated and cured. I do not, of course, here refer to those widely advertised concerns, wholly owned and controlled by laymen, whose secret nostrums are dispensed in a routine way by some accommodating doctor who is hired to come in and give a semi-professional appearance to the institution. These so-called "cures" that flourished over a decade ago have been rapidly disappearing. No self-respecting physician can countenance such enterprises. But I have reference to those ethically conducted sanatoria where alcoholism is carefully studied and treated by men who make a specialty of such ailments, and where no unprofessional methods will be tolerated. These sanatoria are increasing in numbers and efficiency, and are doing a great work in this important field.

Dipsomania partakes of the nature of both a neurosis and a psychosis, the predisposing cause being a nervous system that is peculiarly susceptible to the poisonous or intoxicating action of alcohol. Two brothers brought up in the same intellectual and moral atmosphere begin their careers as moderate drinkers. One of them may become a drunkard, while the other does not, because alcohol is more poisonous to the one than to the other. Possibly the brighter man of the two, the one with the stronger will and the more forceful intellect, is the one to become the victim of alcoholism. Watches are more

easily damaged than stone-crushers, and a man who has a fine-grained and highly-developed brain and nervous system is more liable to be injured by alcoholic beverages than one who is less highly organized. There are few people who want to be drunkards. Most drinkers would gladly make great exertions to avoid that fate, and when they reach that dilemma they try all sorts of expedients to extricate themselves. They "swear off," or sign the pledge, but usually without avail. Asking a man who is subject to a physical malady to pledge himself not to have another attack is manifestly an unsatisfactory method of treatment. The pledge method may prevent people from acquiring the disease, but after it is acquired other methods are more successful. I think we may safely lay down the following as a fair statement of the underlying etiological principle:

Dipsomania is not a mere "habit," but is a curable disease which is developed in drinking men, not as a result of weakness of will, or of intellect, or of morals, but because of a peculiar susceptibility of some nervous systems to the poisonous action of alcohol.

Dipsomania can be cured. This proposition is abundantly proven by the testimony of thousands throughout this and other countries. It cannot, however, be properly treated at home. The patient should be removed from his customary surroundings and should devote his entire time and attention to the business of getting cured.

The question as to what constitutes a cure of this disease has often been debated. Some have held that if an habitual drinker remained a total abstainer and free from the alcohol crave for one year after treatment he should be set down as cured; while others have contended that if he ever drank again he had never been cured. The latter position is manifestly absurd, for according to that a patient could not be classified as cured till after he was dead!

A great variety of remedies will be indicated at different times. Each patient must be studied and his abnormal peculiarities noted, and every means known to medicine should be available in restoring him to a normal condition. In addition to many remedies from the Materia Medica, electricity, mechanical vibration, baths, etc., will at times be found to be valuable methods of treatment. In some conditions of the nervous system I have employed the high frequency current with most excellent results. The nerves should receive especial attention, for dipsomnia *per se* is a disease of the nervous system. Other organs frequently are involved, and should be properly treated, but these complications are not essential accompaniments to dipsomania.

In most cases I administer some remedies hypodermically, and have stated hours for doing so. This method has a number of advantages. It brings the physician and patient face to face with each other at regular intervals, thus enabling the physician to note clearly the progress of the case. Remedies thus administered act more promptly. Their action is more uniform and sure, as they do not go through the process of digestion but enter directly into the circulation. This method is available when medicines are rejected by the stomach. My method of using the needle should more properly be called intramuscular rather than subcutaneous, as I insert the needle perpendicularly into the body of the muscle. If skillfully done, this method is painless and, in my experience, has never produced an abscess.

I usually prescribe alcoholic liquors during the first few days of treatment, as I find the "gradual withdrawal" plan the most satisfactory one. This is especially important in delirium tremens. In this condition the three most important indications are: (1) moderate alcoholic stimulation; (2) nutrition, and (3) sleep. Delirium is apt to occur after a spree when alcohol is suddenly withdrawn, and in most of these cases the patients have had less than the normal supply of nutrition and sleep. For nutriment milk and raw eggs are perhaps the best if the stomach will retain them. If these are rejected, hot malted milk will often be tolerated. For a hypnotic, apomorphine, gr. 1-30 hypodermically administered is the most prompt and effective drug. I first published my discovery of the hypnotic action of apomorphine several years ago, previous to which time it was supposed to contain no hypnotic properties. Since then the standard text-books have described my method of employing this remedy, usually giving me credit for its discovery. (See *New York Medical Journal,* October 28, 1899, and March 17 and November 17, 1900; also *Merck's Archives* for June, 1900.)

Dipsomania is a disease that has cursed mankind through all the ages of recorded history. It is to-day one of the most widespread and disastrous of all chronic diseases, and yet for a malady so common and so curable it has been strangely neglected by the medical profession. In my judgment it deserves and will yet receive the earnest and diligent study of our ablest practitioners.

Cause of Rupture in Tubal Pregnancy.—Romolo Costa advances the hypothesis that hemorrhage, the cause usually given for the rupture of the tube in tubal pregnancy, is only the determining cause, while underlying it is a gradual change in the composition of the tissues of the tube. The cause of this change is the destructive action on the maternal tissues of the elements of the fetal villi. These gradually penetrate the wall of the tube and destroy the cells, and the wall becomes softened and replaced with tissue that is poorly nourished, with imperfectly developed blood-vessels. Thus when hemorrhage does occur the distended tube is softened and prepared for rupture. The author brings forward the examination of the specimens in two cases observed by him, one of which shows the penetration of the villi into the maternal tissues where there was little hemorrhage and the relations of fetus to mother were not disturbed. In the other the hemorrhage was great, the parts were entirely displaced, and this process of softening could be recognized in the walls at the seat of rupture.—*Annali di Ostetricia e Ginecologia.*

Premenstrual Fever.—R. Romme, in speaking of the researches just published by Riebold, states that they show clearly that premenstrual fever is not limited to tuberculous patients, as this investigator has observed it in a large number of pathological conditions. The observations have been most carefully made. Out of eighty-seven cases of fever which were clearly premenstrual, thirty-seven were noted in tuberculous women. In the other patients diverse affections existed. There was a group of patients convalescing from various infectious diseases, such as scarlet fever, diphtheria, acute rheumatism, angina, and typhoid fever. Premenstrual fever appears more often in tuberculosis than in any other affection. According to Riebold's conclusions, every woman who during the three days preceding menstruation shows a temperature of 37.5° C., should be carefully examined by a physician, for it is the duty of the latter to determine the nature of the disease which for some time demonstrates itself only by this premenstrual fever.—*La Presse Médicale.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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"JUST ENOUGH OF LEARNING TO MISQUOTE."

WE are disappointed in the secretary-editor of the American Medical Association. We had supposed he had at least the acumen, if not the conscience, to avoid misstatements which are easy of disproof; but it seems he has not even that. Six columns of the *Journal* of September 15 are devoted to a pretended review of the part the MEDICAL RECORD has taken in opposing the policy of concealment in the management of the Association, and in nearly every line the writer misquotes from this journal or charges us with statements which we have never made. We cannot, in a column or two, which is all we can in decency impose upon our readers in so personal a matter, note all the infractions of truth which occur in this long article. Nevertheless it is due the members of the American Medical Association, so many of whom are readers of the MEDICAL RECORD, that we should note and disprove a few of these astounding prevarications.

The editorial begins with the now hoary old falsehood that the MEDICAL RECORD has attacked the American Medical Association. The secretary-editor, in his reiteration of this charge, can only be wilfully saying what he knows not to be so in order to mislead such of his readers as have not the privilege of reading also the MEDICAL RECORD and so learning the truth for themselves. The insinuation is made that the "attacks on the Association" were inspired by a falling off in the number of subscribers to the MEDICAL RECORD. This is a stupid guess, for if it were true (which it is not, for there has never been a time in the history of this journal when its circulation was increasing so rapidly as now), it would have been the height of folly to adopt a course which might antagonize some possible subscribers. The writer of the editorial says we asserted "that the House of Delegates at Boston was dissatisfied with the Board of Trustees and that it was denied details regarding the business of the Association." Such a statement is staggering. It is an absolute falsehood made out of whole cloth, without the flimsiest foundation of fact. The fabrication is as foolish as it is knavish, for it is so easy of disproof by comparison with the files of the MEDICAL RECORD. Again, this garbler of quotations charges that we wrote that at Boston "a strenuous effort was made to get rid of the editor," and then characterizes the statement as "unqualifiedly false." What we wrote was: "It was rumored that a strenuous effort would be made to dismiss the secretary-editor." Really, if it were not unparliamentary we should have to apply an even stronger term than prevaricator to the man who has deliberately and in pure malice changed this quotation in order to make his point. The editor admits that there was opposition to him at Boston, but says "it was limited to the horde of nostrum vendors who have been getting rich by humbugging and deceiving our profession, and the owners or attachés of those medical journals nourished by the same brood, who allow themselves to be used as the mouthpieces and tools of proprietary interests." It is only three months ago that the secretary was cowering under the lash of the stinging rebuke administered by Dr. Vaughan and was seeking by any means to escape the consequences of his outrageous acts; yet now he has taken heart of grace and dares again to insult his masters and to characterize the many honorable members of the Association who have disapproved of his methods as "the mouthpieces and tools of the proprietary interests."

With a brief reference to a purely personal matter we shall have done. The writer of this editorial in the *Journal*, whoever he may be—the editor is in any case responsible for the misstatements it contains—says that the editor of the MEDICAL RECORD never attended a meeting of the American Medical Association. For eight or ten years he attended every meeting of the Association, but this was while the now secretary-editor was a student in the Hahnemann Medical College of Chicago or was engaged in homeopathic practice, and so naturally we did not meet. Again he says the editor of the MEDICAL RECORD became a member of the Association in March, 1906, which is true enough. In company with so many of his colleagues in New York State, he would not subscribe to the Code of Ethics which declared Dr. Simmons and his fellow practitioners unfit to associate with regular physicians, and so he could not join the Association until it had thrown over that curious old document. He was registered, however, at the meetings, paid his dues, and enjoyed all the privileges of a *quasi* associate member. He was ready to join the Association when the rules of this body should be changed so as to conform to the requirements of the physicians of New York State, and he became a member as soon as that was done.

It is not the province of medical journals to bandy personalities, and we shall endeavor not to tax our readers' patience again by noticing any further unveracities in which our disesteemed contemporary may indulge. What criticism the MEDICAL RECORD has made of any official of the Association has been inspired by a sense of duty, for the columns of the *Journal of the American Medical Association* are notoriously closed to all communications which reflect in any way upon the acts of the secretary, and it is only in the independent journals that the truth can be spoken. If the managers of the Association adhere to their recently announced policy of open dealing with the members we shall be content with the result of our labor, and they may count upon our cordial support. But they must give their editor-secretary a copy of the Ten Commandments with the ninth underscored, and see that he, or whoever writes his editorials, observes its admonition in his public utterances; otherwise he may some day bring them as well as himself into danger of the judgment.

THE ORIGIN OF SLEEP.

The nature and origin of sleep have occupied physicians and physiologists since the time of Hippocrates, and, strange as it may seem, we are still in more ways than one "in the dark" as to the exact mechanism of this common, every-day phenomenon of life.

The greatest variety of theories have been put forward to account for sleep. The psychological theory (Manaseine) is that sleep is a time of rest for consciousness. The histological theory (Rabe, Ruickard, Lépine, Duval) attributes sleep to the retraction of the dendrites of the cortex cells, interrupting the connections of neurons. Howell's hypothesis is that sleep is due to cerebral anemia from a fall of blood pressure when the tone of the vessels is relaxed; but the objections to this are numerous. For example, somnifacient drugs may increase the blood supply to the brain; sleep is favored by small doses of alcohol, by the recumbent posture; the face is reddened in sleep, etc. Czerny, and after him Schleich, have concluded, in fact, that sleep is due to cerebral hyperemia.

The chemical theory of sleep is also interesting. Pflüger believes that sleep is caused by lack of oxygen in the brain. According to Dubois, sleep is induced by an accumulation of carbon dioxide; according to Obermeister and Preyer, of toxic substances in the central nervous system. The chemical theory holds that sleep is induced by toxic substances generated by the nervous system itself, and yet it is a matter of common knowledge that men who work hard with their brains sleep far less than the average day-laborer.

And now comes Dr. Alberto Salmon,* who maintains that sleep is induced by the internal secretion of the pituitary body. He submits that somnolence is characteristic of tumors of the pituitary body, with or without acromegaly, provided no degeneration of the gland takes place, and of myxedema, when the gland usually becomes enlarged. In sleeping sickness a hypertrophic pituitary body is found. Somnolence is also noted in infectious diseases in which there is chronic meningitis and there is congestion or inflammation of the pituitary body (influenza). Certain intoxications and autointoxications (pilocarpine, morphine, gastric and hepatic poisons) experimentally induce hypersecretion of the pituitary and cause somnolency. Obese persons are often very sleepy, and functional disturbances of the hypophysis cerebri are not infrequently noted in these persons. Somnolence is also found in all conditions causing a congestion of the hypophysis, such as epilepsy and injuries to the head.

On the other hand, insomnia is noted in tumors of the hypophysis with degeneration of this body; in the late stages of acromagaly, when the gland is partly destroyed; in Graves' disease, in which at autopsy the gland is found atrophic; in certain forms of diabetes, in which the glycosuria is secondary to lesions of the gland and of the glycogenetic centers situated in its neighborhood. Insomnia also exists in all conditions which favor atrophy or destruction of the pituitary body, as in old age, in inanition, in arteriosclerosis, in severe acute or chronic infections and intoxications (phthisis and cerebrospinal meningitis, atropine poisoning, chronic morphine and alcohol poisoning, etc.) Sexual and nasal diseases also give rise to insomnia, which is sufficiently explained, according to Salmon, by the close relations of the pituitary body with the sexual organs, and its proximity to the nose.

All these considerations, together with the connection of the pituitary gland with the nutrition of the nerve centers, serve as a basis for Salmon's theory that sleep is due chiefly to the secretion of the pituitary gland. The isolation of this secretion and the injection of it experimentally into animals to induce sleep would, if successful, offer a more convincing proof of this theory than any adduced as yet by Salmon.

*Sull' Origine del Sonno; Studio delle Relazioni tra il Sonno e la Frunzione della glandula Pituitaria, Florence, 1905.

CONTROL OF WATER AND MILK SUPPLIES.

The most important subject considered in the Section of State Medicine, at the recent meeting of the British Medical Association, was that of the control of water and milk supplies. Perhaps polluted water and milk are the most fertile sources of disease known to civilization, and any suggestions as to improving such supplies should be of the greatest interest. At the meeting in Toronto there were present eminent sanitarians from Great Britain, the United States, and Canada, and consequently the views ventilated were of special value. The question of an improved water supply in both urban and rural districts has been agitating the minds of the medical profession and a portion of the laity of America for some considerable time. In some cities effective steps have been taken to remedy conditions as regards water supplies, which had become a public scandal and a grave menace to the health of the community. In other cities an unfortunate and unhealthy state of affairs continues to exist, and typhoid fever, the unvarying sequel of neglected water, is still far too common in this country.

In Great Britain the water supplies, as a rule, are well guarded, and typhoid fever has of late greatly decreased in that country. So far as the milk supply of Great Britain is concerned, however, matters are on a very different footing, for America is as far ahead of Great Britain in the control of her milk supply as Great Britain leads America in her care of water. Thus each country had much to learn of the other.

One of the best papers read was by Dr. H. D. Holton, secretary of the Vermont State Board of Health. Dr. Holton advocated the careful analysis and examination of all sources of public water supplies, and spoke very strongly against the custom followed by individuals or by municipalities of discharging sewage into rivers or other bodies of water. Such a practice would sooner or later affect the purity of the supply, and serious results would probably ensue to those who used the water. Dr. Holton further recommended that sewage should be filtered, as many of the intestinal and kidney troubles from which so many people suffered might be traced to the pollution of water supply by sewage. Prof. Glaister of Glasgow University emphasized the importance of proper control of the area whence the water supply is procured. In Scotland the care-

ful exercise of such precautions had practically abolished water epidemics in that country. The law in Scotland reads that no individual or community is permitted to pollute any stream, so that the down-stream user does not receive the water in its original state of purity. Referring to filtration, Prof. Glaister pointed out that while the method would remove a large percentage of impurities, it would not do so without adequate reservoir accommodation, and a large sedimentation area.

Dr. T. A. Starkey, Professor of Hygiene at McGill University, dealt with the question of the pollution of water supplies by sewage, and gave some conclusions reached by him as a result of his observations for a series of years in regard to the gradual deterioration of the water in the Ottawa and St. Lawrence rivers. For many years it has been a popular belief, and even among sanitarians, until recent times, it has been the common view that large rivers completely purify themselves in time from pollution by sewage. Prof. Starkey pointed out that, considered bacteriologically, the so-called purification was merely dilution, and the pollution was not got rid of. The remedy for the pollution obviously was control of the sources of water supply. He did not wish to be an alarmist, but he was compelled to admit that the condition of Canadian rivers was becoming dangerous. All the speakers agreed that the importance of purification of sewage and of the filtration of water could hardly be over-estimated.

The question of milk control, owing to the length of time occupied by the discussion of water supplies, was debated in a somewhat too abbreviated manner. Dr. R. Harcourt of Guelph, Ontario, who read the first paper, was altogether a pessimist in regard to the present methods of handling and delivering milk in Canada. He was of the opinion that if a commission were appointed to investigate the conditions under which milk was handled and delivered to the consumer, the report would be worse than that relating to the meat-packing establishments of Chicago. The consumer, he opined, had the right to demand milk which, if maintained at sixty degrees or less, would keep for twenty-four hours, and that it be free from flavors. The advisability of establishing a standard required for milk, the price of which should depend on the quality, was considered. The addition of preservatives of any kind was deprecated as injurious to public health, and in some circumstances deleterious to the food quality of the milk. Prof. Glaister gave much valuable information regarding the model methods by which the purity of this article of food could be assured to the consumer. But, as said before, the discussion on milk was hurried over, and the subject did not receive the attention which it rightly deserved.

However, these outstanding points in the discussions on water and milk may be observed. That in America water supplies, as a rule, are comparatively neglected to the great detriment of the health of the community at large. That in America, while, of course, the situation as regards the control of the milk supply is by no means ideal, in the cities milk is handled and delivered with far more care than in Great Britain generally. It therefore behooves the people of this country to insist upon having a pure water supply, while it would be to the great advantage of the British people if their system of milk control were thoroughly reorganized.

A Novel Plastic Operation.

When the necessity of covering cranial defects was fully recognized, it was believed that the osteoplastic method advocated by Mueller and Koenig solved the problem in most instances. There are cases, however, in which a proper bone flap cannot be made, because the diploë or the surrounding tissue is excessively thin, and then it becomes necessary to fall back on the various heteroplastic procedures which have been devised for this purpose. One of the serious drawbacks connected with the latter is the possible production of adhesions. When localized cerebral symptoms are present after an injury to the head and they are due to a cicatricial process, no permanent cure can be expected unless reunion can be prevented after extirpation of the cicatrix. As pointed out by Carl Beck in an article in the *Annals of Surgery* for August, 1906, the apposition of brain and periosteum which takes place when the usual osteoplastic flap is employed, must necessarily result in the production of more or less unyielding scars. This might be obviated by a plastic transposition of the dura, but such a procedure is, of course, possible only in slight defects. Beck has suggested that the temporal fascia affords a material which possesses no marked tendency to the formation of adhesions, and he has applied his own suggestion in two cases. The flap which he employs includes the fascia and underlying periosteum, and when it is folded over the exposed brain the latter is covered by fascia, while the periosteum remains on top. A protecting lid is slowly formed, which, although it does not attain the thickness of a bone flap, seems to afford ample protection. In the two cases which he reports convulsions were present following an injury which involved the parietal region. The procedure described was readily carried out in each instance, and there was little reaction. The time which has elapsed since the operations, only a few months in the first case, is really too short to warrant a verdict regarding the disappearance of the convulsions, but the method is certainly sufficiently simple and its theory sufficiently logical to stimulate to further trials by other operators in selected cases.

The Protective Value of the Thyroid Gland.

The fact that an enlargement of the thyroid gland has been observed during the course of many of the infectious diseases makes it probable that this organ is also concerned in the protection of the system in addition to its other possible functions. Vincent (ref. in *Wiener klinische Wochenschrift*, No. 31, 1906) finds that in rheumatism there is also apt to be found a painful enlargement of the thyroid. Although true rheumatic thyroiditis is rare, the other condition referred to frequently constitutes a feature in the clinical picture of moderate and severe cases of acute articular rheumatism. The swelling and tenderness involve both lobes, come on during the early stages of the disease, and subside with the fever and the local joint pains, but return with every recurrence of the original trouble. In the milder attacks, as well as in the chronic cases, these changes in the thyroid are not observed. Vincent believes that the swelling in the gland does not merely denote an involvement of the organ in the rheumatic process, but is an expression of its increased function in the fight against the infection.

News of the Week.

Dedication of the Harvard Medical School Buildings.—On September 25 and 26 the new buildings of the Harvard Medical School on Longwood avenue will be dedicated, and the exercises are to be made the occasion of a reunion of as many as possible of the graduates of the institution. On the first day the buildings will be inspected and formally accepted, but the more elaborate ceremonial will take place on the following day at Sanders' Theater. Addresses will be delivered by President Charles W. Eliot of Harvard and by Professor William H. Welch of Johns Hopkins University. There will also be the presentation of greetings from other institutions and the conferring of honorary degrees. Later in the day the triennial banquet of the Harvard Medical Alumni Association will be held in Memorial Hall, at which it is expected that over 1,000 alumni will be present.

New Plans for a Filtration Plant.—The Water Commissioner, under authorization by the Board of Estimate, has decided on plans for a city filtration plant to be erected at the Jerome Park reservoir, at an estimated cost of $12,000,000. It is proposed to build the filtration plant over the Jerome Park reservoir, completely covering it, and the capacity of the sand beds is expected to be 380,000,000 gallons daily. The department has also decided to erect an experimental plant at Jerome Park, to cost $12,000, to discover the best processes for the elimination of bacteria that a sand filter cannot take care of.

Barren Island Reduction Plant Rebuilt.—The Street Cleaning Department has announced that the city's garbage reduction plant on Barren Island, which was completely destroyed by fire last spring, has been rebuilt and will shortly be in operation again, so that it will no longer be necessary to resort to the expedient of dumping the city's refuse at sea. The new plant is much larger and more thoroughly equipped than the old one, and comprises 22 boilers, 100 digesters, 25 presses, and 25 receiving tanks. The vapors arising from the work are to be disposed of in an inoffensive manner by the erection of a high smokestack.

Trachomatous Immigrants.—The immigration authorities have discovered at Philadelphia what they believe to have been a conspiracy to land in this country large numbers of Armenians who are now in London, all of whom, it is alleged, are suffering with trachoma. Three Armenians have been indicted in Philadelphia for attempting to bribe an immigration inspector through whose intervention it was hoped to introduce into the country the diseased immigrants. The Commission of Immigration estimates that there are in the neighborhood of 10,000 cases of trachoma among the aliens of New York.

Yellow Fever Prophylaxis in Central America.—The report of the Honduras health officials recently published indicates that the campaign against yellow fever in that country has met with great success. It is stated that precautions have been carried almost to extremes, houses of the poor in some cases having been burned to destroy filth and new houses having been supplied in their places. Frequently clothing worn by beggars has been burned, better and cleaner material replacing the burned garments. Cisterns have been screened, and sulphur has been burned indoors and petroleum spread over the surface of stagnant pools. Weeds have been destroyed in great quantities. As a result in communities where last year fifty or more cases of yellow fever were reported not one case has developed during the last two months.

Baron Takaki's Return to Japan.—Prof. Baron Takaki, who had left Yokohama the last winter, for Columbia University, New York, to give a lecture there by the request of that institution, went to Europe after successful close of his mission. After spending about three months in looking through all the chief hospitals and institutions he went back to United States again. Finally he spent some time in Canada, and embarked on the steamer *Empress of China*, of Pacific Steamship Company, on the 2d of this month, and on the 16th inst. the steamer anchored at the Yokohama harbor, where he landed immediately and hastened to the railway station to take a train for Tokio. On the up train of 1:35 P.M. the Baron arrived at Shimbashi station. He was heartily received there by distinguished representatives of the medical profession of the metropolis. Especially a body of the students of Tokio Charity Hospital Medical School, which consisted of about 200, regularly fell in before the Baron at the platform and unanimously shouted the *Banzai* for him under the order of their instructor. Thus after receiving the salutation of those who attended there to meet him he left the station by a carriage prepared for him for his residence, Nishikonyacho Kyobashiku. Those who crowded the station this day numbered about 400 persons. As the information of his return was rather sudden this day, many persons who passed the return time of him unknown were very numerous.—*Sei-I-Kwai Medical Journal.*

Gift to the Presbyterian Hospital of Chicago.—Recently Dr. D. K. Pearsons donated an additional $5,000 to the fund for the building of the new Presbyterian Hospital, and it is thought that the entire amount required will soon be subscribed. To complete the institution $400,000 altogether will have to be raised. Dr. Pearsons' gift brings the total amount given to $390,000, leaving only $10,000 to be subscribed.

Chicago Lying-in Hospital Plans New Structure.—The Chicago Lying-in Hospital and Dispensary proposes to build on its new property at the northwest corner of Vincennes avenue and Fifty-first street. The directors are planning the erection thereon of a maternity hospital which will be a model for such institutions and will cost between $150,000 and $200,000. It is estimated that the new hospital, with its sixty beds, will care for 1,200 babies every year. At present the one on Ashland boulevard is caring for about 400 patients, while the three dispensaries, sending nurses and physicians into the homes of the poor, take care of about 1,400.

Homeopathic Committee Opposes Single Board Plan.—At the Atlantic City convention the Interstate Committee of the American Institute of Homeopathy in its report urge the homeopathic societies of the country to advocate separate State Examining Boards in all States where they do not now exist, and to oppose legislation providing for the consolidation of the regular, homeopathic, and eclectic boards.

Race Suicide in Connecticut.—The editor of the *Berlin* (Conn.) *News*, in commenting on the fact that during the past year no boys have been born in that town, offers a year's subscription as a reward to the parents of the next male child.

Illness Due to Dried Beef. — Ten persons in three different families of Kalamazoo, Mich., are reported to have been made seriously ill as the result of eating dried beef said to have come originally from one of the large packing houses. The supposition is that the illnesses were caused by the presence of preservatives in the beef.

A New Measles Pavilion.—Plans have been prepared for a new measles pavilion to be built by the city on the grounds of the Kingston Avenue Hospital in Brooklyn, and bids will be opened on September 24 by the Board of Health.

Report of Cook County (Ill.) Coroner for August.—The table of deaths from other than natural causes during the month, as reported by the Coroner of Cook County, was as follows: Suicide, 30; drowning, 29; heat prostration, 27; railroad accidents, 26; homicide, 14; street car accidents, 13; lightning, 1, and scenic railway accident, 1.

Anthrax is reported to have appeared in central Delaware among the live stock, and many animals have died from this cause. The State authorities have ordered all the carcasses of dead animals burned and are causing animals exposed to be inoculated.

Work of Visiting Nurses' Association.—During August the Visiting Nurses' Association cared for 1,227 patients, and the nurses have made 5,738 visits. The diseases cared for were tuberculosis, typhoid fever, and cholera infantum.

Plea for the Restoration of the Canteen.—The short-sightedness of those through whose misguided zeal the army canteen was abolished has been again scored by Lieutenant-General H. C. Corbin, commanding the Northern Division, who, in his annual report published on September 13, points out the physical and moral perils besetting the soldier who, deprived of any opportunities for social relaxation within the barracks, is forced to seek enjoyment in the vile haunts always to be found in the neighborhood of army posts.

Opening of Columbia University.—The opening exercises of the academic year 1906-7 of the College of Physicians and Surgeons will be held in the Lower Lecture Room on Thursday, September 27, 1906, at 3 o'clock P.M. After a brief address of welcome by the president of the university an address will be delivered by L. Emmett Holt, M.D., LL.D., Sc.D., Carpentier Professor of the Diseases of Children, upon "Medical Ideals and Medical Tendencies."

Argyria.—A correspondent asks for information regarding the discoloration of the body produced by taking pills of nitrate of silver, and whether it is possible to remove it. Twelve years ago, he says, one of his patients took many such pills, but within a year his color seems lighter. His health is good, still he is very dark.

Missouri Valley Medical Association.—The following were elected as officers of this society at the session held at Council Bluffs, Ia., on September 7: *President,* Dr. O. B. Campbell, St. Joseph, Mo.; *First Vice-President,* Dr. M. F. Milroy of Omaha; *Second Vice-President,* Dr. C. O. Thienhaus, Milwaukee; *Treasurer,* Dr. Donald Macrae, Sr., of Council Bluffs; *Secretary,* Dr. Charles Wood Fasset of St. Joseph, Mo. Omaha was chosen for the next meeting, to be held on the fourth Thursday in March.

Cumberland Valley Medical Association. — At the fourth annual meeting of this society, held in Chambersburg, Pa., on September 4, the following officers were elected: *President,* Dr. C. F. Palmer, Chambersburg; *First Vice-President,* Dr. D. A. Watkins, Washington county; *Second Vice-President,* Dr. J. C. Davis, Cumberland county; *Third Vice-President,* Dr. C. M. McLaughlin, Greencastle; *Secretary,* Dr. J. J. Coffman, Scotland; *Assistant Secretaries,* Drs. D. H. Smith of Cumberland county, H. C. Devilbiss of Chambersburg, D. C. R. Miller of Mason and Dixon; *Treasurer,* Dr. J. J. Koser of Shippensburg.

Western Surgical and Gynecological Association.—At the final session of the sixteenth annual convention of this association, held at Salt Lake City on September 2, St. Louis was selected as the next place of meeting, and officers were elected as follows: *President,* Dr. C. W. Oviatt of Oshkosh, Wis.; *Vice-Presidents,* Dr. S. C. Baldwin of Salt Lake and Dr. Jabez N. Jackson of Kansas City; *Secretary and Treasurer,* Dr. A. T. Mann of Minneapolis.

Claiborne County (Miss.) Medical Association.—A society with this name was organized at Port Gibson, Miss., on September 3, and the following officers were elected: *President,* Dr. W. D. Redus; *Vice-President,* Dr. J. F. McCaleb; *Secretary and Treasurer,* Dr. George W. Acker.

Colorado Homeopathic Society.—At the twenty-first annual convention of this society, held at Denver on September 6, the following officers were elected: *President,* Dr. F. A. Faust of Colorado Springs; *First Vice-president,* Dr. A. C. Stewart of Denver; *Second Vice-President,* Dr. Clinton Enos of Denver; *Secretary,* Dr. E. B. Swerdfeger of Denver; *Treasurer,* Dr. James B. Brown of Denver.

Obituary Notes.—Dr. PHILLIP S. WALES, Medical Director, U. S. N., retired, died of cancer, in Paris, France, on September 15, after a long illness. He was born at Annapolis in 1837, and after graduating from the University of Maryland entered the United States Navy as assistant surgeon. He was made a surgeon in 1861, and served during the Civil War at the naval hospital at Norfolk and on the steamer *Fort Jackson.* He was made a member of the Board of Examiners in 1873, and later occupied the posts of medical inspector, chief of the Bureau of Medicine and Surgery, and medical director. He was one of the physicians who attended President Garfield in his last illness. He was retired from the service on account of age in 1896, since which date he had spent most of his time in Washington.

Dr. LEROY M. YALE of this city died suddenly of apoplexy on September 12, at his summer residence in Quissett, Mass. He was born in Vineyard Haven, Mass., sixty-five years ago, and was graduated from Columbia College in 1862, receiving his medical degree from Bellevue Medical College four years later. He had been the editor of several publications and was the author of several treatises on medical subjects, for the most part dealing with pediatrics.

Dr. M. E. PAGE, an eye and ear specialist, of Oswego, N. Y., died on September 10, at the age of forty years. Dr. Page was born in Broome county and received his medical education in the Bellevue Hospital Medical School.

Dr. JAMES A. FINN of Roxbury, Mass., died on September 2, at the age of sixty-five years. He was a native of Boston and was graduated from the Harvard Medical School in the class of 1875.

Dr. JAMES H. PEABODY of Omaha, Neb., died on September 9, at the age of seventy-three years. He was born in Washington, D. C., and received his medical degree from the University of Georgetown in 1860. He served as assistant surgeon during the Civil War and in 1864 was made medical director of

the district of Nebraska. In 1866 he began practice in Omaha and had resided there ever since that date.

Dr. JOSEPH H. DRAKE of Des Moines, Ia., died on September 8, at the age of sixty-one years. Dr. Drake was born in St. Thomas, Ont., and had practised in Des Moines since 1890.

Dr. FRANK H. DUNBAR of Swanton, Vt., died on September 6, of gallstones, at the age of thirty-seven years. He was graduated from the Medical College of Vermont in the class of 1903 and had practised in Swanton since that time.

Dr. EDGAR A. BROOK of Bonner, Mont., died on September 4, at the age of forty-five years. He had practised in several Montana towns for many years and several years ago was city health officer in Butte.

Dr. WILLIAM R. CHEEVER of Kenosha, Wis., died suddenly on August 30, at the age of thirty-eight years. He was a graduate of the College of Physicians and Surgeons of Chicago and had practised in Kenosha for a number of years.

Dr. D. J. MCCABE of Berlin, N. H., was instantly killed in a runaway accident on September 16, while on his way to visit a patient.

Dr. EVERARD D. FERGUSON of Troy, N. Y., died after a brief illness on September 8, at the age of sixty-three years. He was born in Moscow, N. Y., and received his medical degree from Bellevue Hospital Medical College in 1868. He was surgeon of Clinton Prison at Dannemora for three years and then took up his residence in Troy in 1878. Dr. Ferguson took an active part in organizing the New York State Medical Association, and he served as its secretary during several years. He was a member of the House of Delegates of the American Medical Association and was at one time vice-president of the Association.

Correspondence.

SUICIDE.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Apropos of Dr. Geo. M. Gould's article, "The Mysteries and Sources of Suicide," in the MEDICAL RECORD of September 8, 1906, it might be interesting to inquire: Is not the question of suicide in by far the greater number of instances a psychological problem? As the writer suggests, statistics are wholly unreliable as to the cause which it is frequently impossible to know. Furthermore, there are many cases of suicide reported as deaths due to other causes. Relatives of a suicide regard it as a stigma, and endeavor to conceal the facts of the case. The would-be suicide has the same feeling, and contrives to make the cause still more obscure. The physician in attendance is led to certify as a cause heart failure, ptomain poisoning, apoplexy, overdose of hypnotics, etc., when he has misgivings as to the real cause. Under those circumstances he is compelled to refrain from pronouncing a case of death suicide, for whatever he believes he could not prove, and would bring condemnation on his head.

The causes other than disease that lead to suicide furnish an important educational problem. Some have sought to discover why suicide should increase *pari passu* with civilization. It is not because of the increase of disease, as the mortality rates show decrease. It is not necessarily due to physical disease resulting from the various forms of strenuous life, but originally from the psychological effects of mistaken ideals, unruly passions, ungovernable ambitions, etc. Drug addictions are not a primary cause but are formed at a later stage, which finally terminates in suicide. It is remarkable how rarely an invalid commits suicide, and physicians wonder that they do not oftener adopt that form of death. I once knew of a hopeless morphine habitué having been persuaded by a member of the family to commit suicide without avail. Some believe that suicide never occurs apart from mental or physical disease. To understand the final causes of suicide, it is necessary to understand the reasons for our clinging to life: (1) There is the animal instinct of the fear of death, which exists in all the higher forms of life. (2) The existence of a belief in happiness from living. (3) The belief that suicide is a moral wrong. (4) The fear that death may not be a total annihilation.

One or more of these reasons may frequently be overcome, but when all are overcome there is nothing left to be done but commit suicide. As to the first cause, any philosophy or form of stoicism is sufficient to overcome the instinctive fear of death. The pessimistic philosophers can easily eliminate the second cause as well as the first, but it is not so easy to do away with the third and fourth, for no sane person will argue that suicide is not morally wrong. Hamlet eliminated all but the fourth reason, and there he balked, and the same uncertainty makes many hesitate. It is easy to understand how a diseased condition would make predisposition active.

R. M. HARBIN, M.D.

Rome, Ga.

OUR LONDON LETTER.

(From Our Special Correspondent.)

A SANITARY CONFERENCE ON MEAT SUPPLY, ETC.—TUBERCULOSIS IN MUMMY DUST—PROPAGATION OF LUNACY—THE ANTIS' CAMPAIGN—ABSORBENCY OF MILK—THERMOPILE FABRICS—RAY LANKESTER.

LONDON, August 31, 1906.

A CONFERENCE of medical officers of health and others was held on Wednesday to consider measures for providing the public with meat from healthy home-bred cattle and sheep. The chairman, Dr. Pickett-Turner, urged the importance of a healthy meat supply and proposed that it should be organized, that public abattoirs only should be permitted and conducted under supervision of medical officers of health. In his opinion tuberculosis was derived entirely from cattle which had been fed on diseased grass. Jews, he said, owing to their method of slaughter, ate practically no tuberculous meat, and their death rate from the disease was only a third of the general rate. Dr. Fitzgerald Arthur explained the scheme which it was thought would receive the approval of the medical profession and provide the public with a guarantee of healthy food. It was to be run on commercial lines, to be started near London, bring cattle from Ireland, graze them in Essex, and stall-feed for a time before killing in the public abattoirs. Mr. D. Tallerman (secretary) said cold storages for dressing the meat were to be attached to the abattoirs, and the society proposed to do such work as farmers, butchers, and others required. A general committee, with power to add to its numbers, was appointed to carry out the scheme.

Recurring to the opinion of Dr. Pickett-Turner, he might like his attention directed to Dr. Sornac's recent monograph on the spread of tuberculosis. That writer attributes the increase of the disease in the past 100 years to the disinterment and shipment of mummies from Egypt. He says there are tubercle bacilli in the dust of every mummy case, and the workmen and scholars who began the exhumation fell victims in large proportion. The Napoleonic invasion of Egypt coincided with the outbreak of tuberculosis, which rapidly spread all over Europe with the return of the army and the concurrent distribution of mummies and mummy dust.

Yesterday a discussion took place at the Lancashire Asylums Board on the increase in lunacy, and a resolution was unanimously passed expressing alarm and authorizing steps being taken to ascertain the best means of preventing lunatics from propagating their species. The mover argued that the present humane system of treatment in asylums led to a large number being discharged as cured and set free to propagate and so keep up the supply of fresh cases. Asylums, he said, were degenerating into places where the insane were "doctored up" and then sent away to breed other cases, who followed their parents into the asylums, which discharged annually 14,000 lunatics to spread their mental taint.

Dr. J. M. Rhodes took exception to the idea that this was rapidly becoming a mad world. He admitted that epileptics propagated rapidly, but the epilepsy which produced mental disease had steadily decreased since 1860, and people should contrast the present facility of entering asylums with the time when a certificate would not be obtainable unless the patient were dangerous. Now the benefit to the patient is the first consideration. He had consulted with French, Scotch, American, and German lunacy commissioners and found they all agreed that the increase of lunacy was more apparent than real. Temperance and sanitation were beginning to tell, and through them we should strike at the root of the mischief.

In reply to this a member urged that when five out of eight cases in the asylums were hereditary it was time for the several boards to unite to bring about an alteration in the law which would enable cured patients to be detained or otherwise prevented from adding to the insane population.

The antis of various ilks are making the most of the dead season. Their campaign just now presents a series of slight engagements or pitched battles in the newspapers which avail themselves of the letters sent in accordance with the plan. Many of these little discussions are really started by the central anti-committees, and the leaders of certain minor papers are supplied by a syndicate in London, adapted for the differing politics of the papers. This is the reason why in different towns, if you notice these things, you find the same article. The correspondence of the antis is conducted in the same way. The fanatics about vaccination began this circulation of misstatements, and those about vivisection were not slow to take the hint. The advantage of it is obvious. A letter is inserted with all the appearance of being a spontaneous expression of opinion or even an inquiry. No answer from the locality in defense of the attacked party is to be expected. The local doctors are too busy in attending their patients to occupy themselves with local politics or the contents of the local sheets. Besides, their patients are sometimes most fanatically inclined and it would be idle to attempt to convince them. The parson and the 'squire may be hostile or politically agreed, but neither as a rule expects the doctor to engage in local polemics, and they would unite in disapproval if he did. So it happens that the circulation of misstatements goes merrily along and even the absolute falsehoods of the antis obtain wide credence among those classes of the community which are incompetent to judge, but as they have votes the parliamentary candidates listen and make promises which they know they cannot fulfill.

The great absorptive energy of milk is known as a general fact to all who have to do with its transport. It will acquire a fishy odor when the cans are in contact with fish on a railway journey, and the way in which it picks up flavors in a shop is remarkable and suggestive. MM. Bordas and Toutplain have been experimenting with a view of determining the rate at which it can absorb odors. Selecting formaldehyde, which can never be a normal constituent and is detectable in minute quantity, they found that milk would take up an appreciable quantity when exposed for a few minutes to an atmosphere containing only one of formaldehyde in 100,000. A vessel which had contained a dilute solution and subsequently had been carefully rinsed with water imparted enough to milk put in it to give a distinct reaction. The absorption seems most active in new milk, and it gradually becomes feebler the longer the milk is kept. These experiments fully justify the urgent statements which doctors have so long been accustomed to impress on their patients, especially at this season of the year, when outbreaks of maladies attributable to unclean milk are so frequent.

The use of electricity for heating receives a new illustration in "thermopile fabrics," which consist of a combination of textile and conducting threads. The inventor, M. Herrgott of Belport, claims that he has made several fabrics which are capable of giving out a heat of 70° to 95° F. By their use, heated by an electric current, foot-warmers can be dispensed with and rugs discarded. He even thinks that a general hot-air bath might be obtained. The local application of heat by such a plan would certainly present some advantages over older methods.

The virtual dismissal of Professor Ray Lankester from the Directorship of the Natural History Museum came as a shock to scientific men and excites much indignant comment. The decision appeared in the morning papers the day before he took the chair as President of the British Association. Technically the trustees of the museum may be right, that retirement is due at 60, but his predecessors were given further periods and he was brought from a far more lucrative office at Oxford to reorganize the museum. Thus is science dealt with in this country.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

THE DEUTSCHE AERZTETAG AND THE LEIPZIGER VERBAND—ADVANCING THE MATERIAL INTERESTS OF MEDICAL NON-TREATMENT OF APPENDICITIS.

BERLIN, August 28, 1906.

GERMAN physicians of all classes look forward with much interest each year to the meetings of the "Deutsche Aerztetag," since at such time many matters relating to the social position and the material interests of the medical profession are discussed. The thirty-fourth annual meeting was held this summer at Halle, being preceded, as usual, by that of the Leipzig Association, a society established to promote the material interests of the medical practitioners of Germany. At this meeting the President, Dr. Hartmann, outlined the work of the society during the past year; in that time it had without charge placed 1,286 substitutes and 518 assistants, and had established 354 in practice; it also conducted the physician's case in 129 disputes with lodges, and in the 98 of these in which a decision had been arrived at, the latter was adverse to the physician in only three. The railway administration has aroused general indignation by an order commanding all railway physicians to resign from this association. The cause of this is the effort which the Leipzig Association has been making to establish the right of a person injured by the railway to select his own physician, and not be compelled to accept the services of the company's doctor. Assistant physicians and ship surgeons, both of whom are very poorly paid, have asked the Association to agitate for an amelioration of their lot. The Association voted to take up the cause of its petitioners and to open negotiations with the steamship companies.

The day after the meeting of the Leipziger Verband the Deutsche Aerztetag was held. Of the 371 affiliated societies, with 22,223 members, 294 societies, with a membership of 20,523, sent 487 delegates. The most important paper of the meeting was one by Pfeiffer of Weimar, on the relation of the medical profession to the workingmen's insurance law. He contended that no physician should make a contract with lodges or workingmen's associations until the terms of the contract had been passed upon by a special contract committee of the Deutsche Aerztevereinsbund. Several other papers were read, but the subjects discussed were chiefly of local or rather national interest only, and so I need not deal with them here.

A long discussion on the treatment of appendicitis has occupied the last three sessions of the Berlin Medical Society. Prof. v. Bergmann dwelt upon the necessity of an early diagnosis, upon which, of course, early operation depended. Kraus noted the discrepancy often found to exist between the clinical symptoms and the pathological changes. In many cases what is called an abortive attack is simply one of colitis; in this we find a swelling in the right inguinal region, pain on pressure, and muscular rigidity, just as in true appendicitis. The pain may be due to a number of conditions—toxemia, neuralgia of the skin or of the abdominal viscera, pressure of a tumor, and peritonitis. The mortality of the so-called conservative treatment of appendicitis in children is very great, Kraus said, yet he did not believe that operation was indicated in more than half the cases. Heubner said that the indications for operation were sudden onset, rapid pulse, and an anxious facies; these symptoms pointed to an appendicitis hæmorrhagica. Orth said that the statistics of appendicostomy showed that in from 9 to 10 per cent. of all operations the appendix was normal in appearance. Even in very grave cases of appendicitis a restitution to anatomical integrity was not impossible. Israel said that appendical pain, sensitiveness in the right iliac region, and fistulas often remained after operation. He would not advise an internal operation after suppurative appendicitis, or if there have been no symptoms for at least two years. Rotter favored the primary operation, and thought mistakes in diagnosis were less common than some claimed them to be, though he believed they could not be avoided in about 2 per cent. of the cases. Landau discussed the relation of appendicitis to diseases of the internal genital organs in women, and said that although the symptoms were practically the same in both conditions, the differential diagnosis was nevertheless not usually very difficult. Olshausen did not agree with the last speaker, that the differential diagnosis of appendicitis and salpingitis was a simple matter. The general consensus of opinion was that a primary operation should be undertaken as early in the course of the disease as possible. In order to collect satisfactory statistics, a committee was appointed to draw up a list of questions regarding the disease and its treatment, to be sent to all Berlin physicians, and if possible to all medical practitioners in Germany.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

ESTIMATION OF BLOOD PRESSURE—THE PHOSPHATIDS OF THE HEART, CUORINE VESICAL TUBERCULOSIS—FOUNT IN-RAYS IN TRIGEMINAL NEURALGIA.

COPENHAGEN, Sept. 1, 1906.

DR. H. T. BING has published an interesting investigation into the value of the generally used clinical methods for estimation of the blood-pressure. He used an apparatus of the Riva-Rocci type, but his results are claimed also to apply to the apparatus of Masing-Sahli-Strassburger, and that of Hill and Barnard. The question under discussion is whether the tension, shown by the manometer, the apparatus being applied to the arm, indicates the end-pressure or the lateral pressure in the brachial artery. In the first case variations of the manometer readings also indicate variations of the aortic pressure, and may consequently give valuable information as to variations of the heart-labor. In the second case, the variations of the manometer

readings may have been caused by changes in the state of contraction of vessels peripheric to the apparatus. Thus, a sudden considerable relaxation of the minor arteries peripheric to the place constricted by the apparatus would cause a lowering of the tension, as indicated by the manometer, not necessarily coinciding with a decrease of the aortic pressure, as compensation might arise by contraction of vessels in the splanchnic area. Now, Bing shows that the method gives the lateral pressure in the brachial artery and not the end pressure. He applies a Riva-Rocci apparatus to each arm, and to one of the forearms a thermic irritant. The manometer attached to this arm then indicates a decrease of the blood-pressure not indicated by the other arm's manometer, as would have been the case had the manometer given the variations of the end pressure in the brachial artery. Consequently the many investigators who claim to have demonstrated with the aid of these apparatuses, that the heart labor is influenced in a determined direction by certain procedures (hydropathic, phototherapeutic, administration of drugs), may have been mistaken. At least the proofs hitherto alleged by the authors cannot longer be considered to obtain, and there is again a wide field for new researches.

Uncommonly painstaking and conscientious researches into the phosphatids of the heart have been made by Dr. A. W. E. Erlandsen. In the standing contest between the English chemist Thudichum and most of the other European chemists who have worked with the substances of the lecithin group, Erlandsen follows Thudichum on many important points. He shows the necessity of changing the old definition and division of the lecithinoid substances for a new and more correct one, based on more stringent chemical principles. Thoroughly to discuss his results here would lead too far, but I may be permitted to mention as one of the most important the discovery of a hitherto unknown substance, cuorine, appertaining to the group, named by the author by the sesquipedalian word monoamido-diphosphatids. This cuorine is found in the heart muscle, while other muscles contain only traces of it. Erlandsen draws the attention to the marked autoxidability characteristic of cuorine. As the autoxidable substances are generally considered strictly necessary to the vital processes, and as the organism exacts a far more continuous and relatively far greater work from the heart than from the other muscles, the existence in the heart (and in the heart only) of an eminently autoxidable substance like cuorine may have a deeper meaning. Remembering the importance ascribed by the most competent authorities to the lecithinoid substances in the explanation of the effects on the body of many drugs, *e.g.* the hypnotics, one awaits with interest further researches on this point. A pity it is that these researches are so exceedingly difficult.

Prof. Thorkild Rovsing has published a paper of the highest importance on his experience during the last sixteen years with vesical tuberculosis. During this time he has treated fifty-six cases of the disease and has cured twenty-five of them, while eight more were improved. As vesical tuberculosis was reputed incurable till only a few years ago, Rovsing's conclusions, given below, are possessed of great interest. Vesical tuberculosis is, as a rule, propagated from a primary renal tuberculosis. Only exceptionally does a primary genital tuberculosis spread to the bladder, and more rarely yet the bladder itself is the first and only organ affected. It is hopeless to treat a vesical tuberculosis propagated from the kidney before the diseased kidney has been removed. Therefore one should never acquiesce in the diagnosis of cystitis tuberculosa, but should try by all means to establish the state of the kidneys, whether they are healthy or whether one or both kidneys are suffering. This must be ascertained by catheterization of the ureters and not by cystoscopy alone, or by the use of segregators, as the cases of the author show that an erroneous diagnosis often will be made if the latter methods are adhered to. Even if the urine from both ureters contains tuberculosis bacilli, it is not certain that both kidneys are suffering from tuberculosis, as the cases of the author show that vesical tuberculosis may ascend through the ureter a shorter or longer distance toward the healthy kidney. Then the urine passed through this ureter becomes purulent and contains bacilli, though the kidney itself is healthy. In these cases, as also in those where ureteral catheterization is impossible, owing to ulcerations of the bladder or stricture of the ureteral orifices, a double exploratory lumbar incision, eventually with ureterostomy in order to diagnose ascending ureteral tuberculosis, can give the information of the state of the kidneys necessary to the selection of the proper treatment.

After the removal of the (primarily) affected kidney, a coexisting beginning or not too widespread vesical tuberculosis not seldom heals without further treatmnet, as the author was the first to observe twelve years ago, and has till now observed in ten cases. If, after the removal of the diseased kidney, the vesical tuberculosis spreads further or has already affected large areas of the bladder, the treatment originated by the author, viz., vesical injections of a 6 per cent. aqueous solution of carbolic acid, will cure the great majority of cases treated by it (thirteen cases cured by the author).

Dr. P. Kuhn Faber has successfully treated with *x*-rays a bad case of neuralgia of the third trigeminus branch. The beginning of the neuralgia dated four years back. Resection of the nervus alveolaris inferior was performed and paraffin poured into the alveolar canal, in order to prevent the two nerve-ends from growing together. After the operation the patient felt no pain for four months. Repeated resection of the mandibular nerve just before it enters the canal brought about a new relief of six months, but then the neuralgia again set in and deprived the patient totally of sleep for weeks together. After five treatments by the *x*-rays the neuralgias ceased and have not reappeared for some months.

Progress of Medical Science.

Boston Medical and Surgical Journal, September 6, 1906.

Appendicostomy and Cecostomy for the Relief of Chronic Diarrhea.—Nine cases are detailed by S. S. Gant, eight being of the former and one of the latter procedure mentioned in the title. After certain general remarks as to the nature of chronic diarrhea, he refers briefly to the work of various men along this line, and describes his own technical methods in the following words: The abdomen is opened by a short intermuscular or gridiron incision such as is made for appendectomy. The appendix is located, freed if adherent, brought outside the abdomen, opened, and a probe inserted to make sure of its patency. If found to be too short, strictured, or otherwise unsuitable, it should be removed and a cecostomy substituted. If, however, the appendix is sufficiently long and patent, it is ligated and cauterized. The cecum at its base is sutured to the abdominal wall and the parietal peritoneum, muscles, and skin closed with plain catgut sutures. The appendix is anchored to the skin by one or two sutures and the wound covered with protective tissue and gauze, held in place by adhesive plaster. In some cases the mesoappendix was left intact, while in others the artery was ligated and the peritoneum stripped off, but apparently neither method had any advantage over the other. Usually the part of the appendix external to the ligature sloughed about the fourth or fifth day, leaving the open stump projecting about one-fourth of an inch above the skin. The irrigations are begun immediately, using saline solution, ice water, or solutions of boracic acid, potassium permanganate, carbolic acid, krameria, ichthyol, bichloride of mercury, or nitrate of silver. In practically all cases the abdominal discomfort and frequent evacuations ceased immediately after the operation or after the first irrigation, and within a few days the stools became almost normal, containing but little blood or mucus. It appears to make but very little difference what irrigating fluid is employed, provided that it is used daily and in sufficient quantity to thoroughly cleanse the bowel. No untoward effect has followed the operation in the author's hands except that stitch abscesses occurred in two or three cases.

New York Medical Journal, September 8, 1906.

The X-Ray in Splenic Enlargements.—C. Eastmond reports one case, though two others have been treated with a like result, but no account was kept of the white cell counts. In the case detailed the blood condition improved markedly, while the general strength increased. At the end of six weeks, however, the spleen itself had shown but little change. The use of a harder tube and with much greater power and shorter exposure, led to a rapid diminution in the size of this organ. The author speaks of the result as a "symptomatic" cure only, and he admits that most, if not all, of these cases relapse sooner or later. He says that it is now generally agreed among radiotherapeutists that the *x*-ray tube emits two sets of rays, soft and hard, the former acting upon the skin and superficial structures, the latter upon the deeper. To affect the spleen, a preponderance of hard rays is necessary, and the fewer the soft ones the better, for there will be less action and reaction upon the skin. To obtain these hard ravs one must use an old tube of high vacuum. The current usually used is not sufficient to excite such a tube, and if the vacuum is reduced to the point where a light current will excite it (the usual procedure), the resulting rays will be too soft to penetrate to the spleen.

Deep Breathing as a Therapeutical and Preventive Measure in Certain Diseases of the Lungs.—J. H. Pryor considers deep breathing as a valuable measure, and deplores the scanty attention paid to it in current teaching. It serves as a preventive measure in small and deformed chests, with insufficient or restricted respiratory capacity. The deformities due to rickets and spinal curvature are often susceptible of great improvement by combined exercises of the lungs and special gymnastics. Another group of cases comprise the results of acute or chronic diseases of the lungs and pleuræ, such as prolonged or delayed consolidation with incomplete resolution, partial consolidation and collapse, bronchiectasis, and fettering pleuritic adhesions. Under all these circumstances, the respiratory capacity is diminished, the play of the lung is limited, ventilation is inadequate, and chronic changes take place in the form of interstitial proliferation, bronchiectases, phythisis, and collapse. The patient complains of shortness of breath, dyspnea on exertion, palpitation, weariness, and pain over the side affected. The latter symptom is often more pronounced in cold weather. Neuralgia of the intercostal or subscapular nerves may come on. Now, under all these conditions, deep breathing exercises relieve the condition by removing the cause. Pryor doubts whether any lasting benefit is derived in cases of acute or advanced cases of true tuberculosis, though he believes that the dangers of infection and hemorrhages in such cases from deep breathing are greatly exaggerated, and he bases this opinion on his personal experience. Probably one of the chief reasons why high altitudes have proved beneficial is to be found in the compulsory increase of respiratory activities. Finally, says the author, breathing exercises must be taught and watched to be effective. Each case must be considered in itself, and the kind and degree of breathing exercises required be carefully selected.

Diagnosis of Gastric Ulcer.—H. Weinstein says that an untreated ulcer may result in one of the three following conditions: (1) Severe hemorrhage by rupture of a vessel in the stomach wall. (2) The serosa becoming involved in the ulcerative process may rupture, or, if adhesions to neighboring organs are present, an encapsulated abscess will ensue. (3) Frequently the ulcer extends both laterally and in depth, presenting a funnel-shaped, terraced appearance, and it may attain the size of the palm of the hand The mere healing of a chronic ulcer is no satisfactory cure, for the consequent cicatrices may deform the stomach or cause atrophy of the glandular elements. In a case of ulcer one may find at first only painful pressure after a large meal. Even this may disappear if the patient takes only a liquid diet. At this stage careful inquiry will disclose the fact that the pain in the epigastrium or back appears, or, if constant, is aggravated after a meal. Physical examination will elicit an epigastric or dorsal pain point, or both. If in addition to the foregoing, which, by the way, are the most reliable symptoms of ulcer, there are evidences of hyperacidity as expressed in acid eructations, vomiting of sour material, headaches, and constipation, then we may safely conclude that the case before us is one of ulcer, and we should lose no time in instituting appropriate treatment. It is not necessary to wait for hematemesis to confirm the diagnosis, and we may rest assured that sooner or later this positive symptom will appear if we but wait for it. Hematemesis occurs in about one-third of the cases of ulcer, but it is almost always a late symptom and therefore preventable. Absence of hemorrhage is usually the cause of failure to diagnosticate ulcer.

The Relation of the Physician to Sanitation and Hygiene.—H. P. Sights believes that physicians should be more careful than they usually are to instruct their patients as to many things which medical science has proven —such as the agency of the common house-fly in the transmission of disease. They should take a more decided stand as to the right of the people to a healthful atmosphere and good water. Cordial support should be given to all Health Departments in their efforts to stamp out contagious diseases. The lessons of moral prophylaxis, etc., should be impressed on all our college students. Gonorrhea should not be looked on as merely a matter of hard luck to the sufferer, but shown up to be the forerunner of stricture, prostatic disease, rheumatism, and uterine and various pelvic troubles. Many foolish notions exist among the laity as to bacteria and their mode of action. The truth must be taught. Patients who have pulmonary tuberculosis should be told they have it, so that they can properly care for themselves. Finally, physicians should be absolutely truthful when certifying as to the cause of death in any case.

Berliner klinische Wochenschrift, August 27, 1906

A Simple Method of Demonstrating the Presence of Carbonic Oxide in the Blood.—Horoszkiewicz and Marx, in the course of their investigations on the hemoglobin derivatives formed in blood that has been subjected to the action of quinine, hit upon the following test for the presence of carbon monoxide in blood. The specimen to be examined is mixed with an 8 per cent. solution of hydrochlorate of quinine in the proportion of 2 c.c. of blood to 4 c.c. of the quinine solution. This mixture is gently heated in the Bunsen flame until it has boiled up once; after allowing it to cool slightly, two to three drops of perfectly fresh ammonium sulphide are added and the mixture is immediately well shaken. In the presece of carbonic oxide a clear red color results, while normal blood turns a dirty brownish-green. The change in color is said to be very striking and as the specimen keeps for weeks without change, the test is a particularly useful one in medicolegal work.

The Treatment of Lupus Vulgaris by a Combination of Resorcin and the X-Ray.—Reines speaks highly of a combined form of treatment for this affection, in which the disease foci are first denuded of epidermis by the application of 33 per cent. resorcin paste and then subjected to the x-ray, the theory being that by removing the superficial epithelial layers the rays are enabled to act directly on the diseased tissue with unabated potency. The paste is applied to an area not larger than the palm of the hand once daily for five or six days, at the end of which time it will be found possible with a bit of gauze or a curette to remove the superficial epithelium overlying the lesions, while the healthy skin will remain intact. The Roentgen rays are then applied and the sessions repeated at regular intervals, epidermization of the lesions being prevented by repetitions of the resorcin application as needed. In order to prevent too great irritation periods of rest under boracic ointment are given. The method is said to be particularly advantageous owing to the saving of time in treatment it effects.

Münchener medizinische Wochenschrift, August 21 and 28, 1906.

The Cultivation of Typhoid Bacilli on Bile.—Conradi calls attention to the shortcomings of the present methods for the early recognition of typhoid. Examination of the feces, for example, gives a positive result only in about one-quarter of the cases during the first week, while the Widal reaction becomes marked only during the second. Blood cultures seem to furnish the most reliable early test, although the method is not ordinarily applicable in practice. As bile is known to favor the growth of the typhoid bacilli, Conradi added a small quantity to the blood procured from the patient and then plated the mixture on agar. For convenience, ox bile is preserved in sterile glass tubes, into which the blood from a puncture in the lobe of the ear is allowed to flow, and then the tube may be sent to the laboratory. It has been successfully used in a large number of cases.

Hyperemia in the Treatment of Otitis.—Hasslauer has subjected a number of acute and chronic cases of ear suppuration to this method of treatment with good success. The chronic cases were not apparently benefited, unless an acute exacerbation had occurred. In several instances an unfavorable action must be attributed to the method, for a diffuse extension of the suppurative process took place into the external ear. In the acute cases better results were obtained, and in fourteen cases of pronounced otitis media. five were absolutely cured, absorption of the exudate taking place very rapidly. The procedure advocated by Keppler and Stenger was the one found most effective.

Alcohol and the Neuroses.—Loewenfeld contributes an extensive review of this subject, which leads him to the belief that alcoholism must be regarded as a highly important factor in the etiology of the functional diseases of the nervous system, and that it is of significance not only on account of the frequency of its action, but also on account of the gravity of the consequences induced by it. It may lead to neurasthenia, even in the absence of any predisposition; it may evoke epilepsy in those who inherit a tendency to the disease, and it may greatly increase the severity of the malady when already present. It may greatly aggravate a hysterical constitution, and induce acute outbreaks of mild or severe hysteria, and may also exert a very unfavorable effect on other types of the neuroses. Furthermore, all of these disorders possess in common the property of predisposing to alcoholic excess, and one does not need to be an advocate of total abstinence to realize that in all functional nervous diseases it is advantageous for the patient to refrain entirely from the use of alcoholic beverages. While even small amounts of alcohol may be decidedly injurious to epileptics, it is not necessary to be quite so strict in cases of hysteria and some forms of neurasthenia. Although in such cases some concessions may be made to the patient's inclination, as a rule it is desirable to avoid the habitual use of alcohol even in moderation in all cases of functional nervous disorders, and it appears highly undesirable to com-

plicate the therapeutic problem in these diseases, which are supposed to depend largely on some toxic action, by the continual introduction into the body of another toxic agent, such as alcohol.

The Course of the Intramuscular Nerve Trunks and Its Significance in Plastic Operations on the Muscles.—Wollenberg endeavors to explain the irregularities observed in the results of operations in which muscle transplantation is resorted to, by a study of the course of the nerve fibers in the larger muscles. Microscopical studies show that the nerve trunks for the most part follow the course of the blood-vessels, and by injecting these with mercury and then making radiographs, the author was enabled to demonstrate that in most muscles, except a very few, such as the gracilis, the semitendinosus, the gastrocnemius, and perhaps also the peronei and the tibilias anticus, the course of the vessels and therefore of the nerve filaments is transverse, rather than parallel to their long axes. In making muscular flaps it is apparent, therefore, that there is great likelihood of cutting enough of these transverse branches to render it very unlikely that the flap will retain the power of independent control. The practical conclusions drawn by the author are that in such operations the flap must not be too narrow, and the split must not extend higher than about the middle of the muscular belly. Small muscle flaps can be used only in dealing with those muscles that have longitudinal nerve trunks.

The Curability and Treatment of Tuberculous Meningitis.—Reibold says that so far four cases of what appears with reasonable certainty to have been tuberculous meningitis have been reported, in which recovery followed. To these he adds a fifth, in which he thinks the favorable outcome was brought about by persistent resort to spinal puncture. The patient was a girl of sixteen years, and in all 574 c.c. of cerebrospinal fluid were withdrawn at twenty-four punctures, which at first were repeated at daily intervals and later on less frequently. The author believes that the beneficial effect of the therapeutic measure was very evident in this case, and urges that it be more frequently resorted to. He considers that the spinal canal should be punctured at least once a day as long as the pressure exceeds 25 to 30 c.c. of water, and the amount flowing out at a final pressure of 10 to 12 c.c. equals 25 to 30 c.c. or more.

Deutsche medizinische Wochenschrift, August 23 and 30, 1906.

The Relation of the Diplococcus Intracellularis Meningitides to the Gonococcus.—Ruppel publishes the results of his recent experiments, by which he succeeded in cultivating the meningococcus in a fluid medium after repeated failures. It was also possible to produce the characteristic disease in animals by inoculation, and then to obtain the organism again in pure culture from the pleuritic exudates, the blood, and the cerebrospinal fluid. These strains were also found to be very virulent, which would serve as a means of testing the immunizing sera as regards their potency. Horses inoculated with the virulent cultures were found to produce a serum which had a high protective value in mice. The relation between the meningococcus and the gonococcus is believed by the writer to be very close, and it is probable that by analogous culture methods an antigonococci serum may likewise be produced. He thinks that the differences between the sera are merely quantitative.

The Therapeutic Effects of Antistreptococcus Serum.—Aronson contends again that the unfavorable results following the use of the antistreptococcus sera are due to the indiscriminate employment of the method without preliminary bacteriological cultures. Zangenmeister used the serum in several cases of septic infection after operation for carcinoma, and condemned it as useless. Aronson shows, however, that in order for the serum in question to become effective it is necessary that the leucocyte production be preserved intact, so that the cocci may be taken up and rendered innocuous. This property is not present in a condition of systemic intoxication, such as that associated with the active growth of carcinoma. Aronson is doubtful whether even an active immunization would be efficient in such cases.

Death Through Suffocation Caused by a Necrotic Bronchial Gland.—Reunert says that some instances of reported thymus death, in which no autopsy was made to confirm the diagnosis, may not improbably have been the result of other causes. He describes one instance of sudden death in a child which was the result of suffocation caused by plugging of the trachea by a mass of necrotic material, resulting from the breaking down of a tuberculous bronchial gland. The patient was a boy two and one-half years old, who died suddenly shortly after having been put to bed. At the autopsy the pharynx and larynx were found to be normal, but in the trachea, just below the crycoid cartilage, was a soft, cheesy mass, completely occluding the lumen of the tube, and in the right bronchus, near the bifurcation, there was a perforation leading into a cavity containing cheesy bronchial nodes. The left lung was normal, but the middle and lower lobes of the right lung were tuberculous. Death was evidently the result of the occlusion of the trachea by the mass of necrotic tissue, which the child had been unable to expel.

Ocular Palsies Following Spinal Anesthesia.—Mühsam says that three cases have already been reported, in which paralysis of the external muscles of the eye has followed the induction of spinal anesthesia. He adds to the list two cases which have come under his own observation. The first patient was a man of twenty-six years, who on the tenth day after spinal anesthesia developed a typical right-sided abducens paralysis, which had disappeared again entirely twenty-one days later. The second patient was a woman of twenty-seven years, in whom right-sided abducens paralysis appeared on the fourth day after operation, and persisted for twenty-two days. In both of these cases diplopia was very marked. In another communication, Lang describes two more similar cases; one in a man of sixty-one years and the other in a man of forty-one years. In the first case the ocular weakness appeared on the eleventh day, the right abducens being involved. The other patient suffered from a left-sided abducens paralysis, which appeared on the eleventh day and disappeared on the sixteenth day. The condition still persists, though in diminished degree, in the older patient.

The Treatment of Pulmonary Tuberculosis by Means of Artificial Pneumothorax.—Forlanini says that in the past ten years he has treated twenty-five cases of pulmonary tuberculosis by the induction of artificial pneumothorax, brought about by the injection of nitrogen into the pleural cavity. The results he considers have been very satisfactory, and a number of histories are given in which cure was apparently effected. The underlying principle is the complete immobility secured for the affected lung, and the collapse of all its cavities. Essentials in carrying out the treatment are to have the pneumothorax extensive enough to maintain complete immobility of the lung, to induce the pneumothorax very gradually by the daily introduction of very small amounts of gas, and to maintain a constant pressure in the pleural cavity. The author has devised a special apparatus for this purpose, which is described and figured.

French and Italian Journals.

Hysterical Hematemesis.—Mathieu and J.-Ch. Roux admit the possibility of hysterical hemorrhages of the stomach. These authorities speak of three classes in which hysteria by itself seems to explain hemorrhage without previous ulceration. The first class, or mucous hemorrhage, is an esophageal vomiting, tinted red by a small quantity of blood. The patient feels a sensation of suffocation and suddenly ejects from about forty to sixty grams of bloody liquid. This liquid looks like currant juice diluted with water. As to the pathogenesis, it is probably due to a bloody salivation or to a slight esophageal hemorrhage. The second class is rare and is called hysterical hematemesis coexistent with multiple hemorrhages of nervous origin. The history of a young hysterical woman is reported, who suffered from repeated attacks of hematemesis and hemorrhage from the left ear, without the slightest appreciable lesion of the skin. The third class includes patients who suffer from a sudden attack of hysterical hematemesis, but who neither before nor after show any sign of dyspepsia.—*Revue Française de Médecine et de Chirurgie*, June 25, 1906.

Tobacco and the Auditory Function.—Luigi Chierici states that, although there is no drug that gives more pleasant sensations than tobacco, still we must acknowledge that consumers of tobacco, as well as those who work in it, are subject to alterations of the auditory functions, due to pathological conditions of the middle and internal ear. The middle ear complications are of inflammatory nature, due to the extension of diseases of the pharynx, a result of the irritation of the ammonia that is produced in the process of burning of the tobacco, as well as of some of the alkaloids contained in the drug. There are nine alkaloids in tobacco, several of which are poisonous. Nicotine produces a dehydration of the tissues which irritates the nasopharynx, and the use of tobacco is one of the commonest causes of chronic nasopharyngitis. The ammonia irritates the conjunctiva and the olfactory nerve, as is shown by lacrymation and sneezing. Catarrhal auditory symptoms due to tobacco are vertigo, noises in the ears, and loss of hearing. Lack of hearing is also produced by secondary lesions of the auditory nerve. These are probably due to vasomotor changes due to nicotine, which causes vasoconstriction, resulting in anemia of the auditory nerve, and when continued this results in loss of hearing.—*Gazzetta Medica di Roma*, June 15, 1906.

Book Reviews.

Walter Reed and Yellow Fever. By Howard A. Kelly, Professor of Gynecological Surgery, Johns Hopkins University. New York: McClure, Phillips and Company, 1906.

By this timely volume Dr. Kelly places under obligation to himself both the medical profession and all who are interested in scientific progress. The book is a biography of Reed and also a historical and scientific account of yellow fever, its ravages in the past, modern work on the subject, and a description of the relation between the mosquito and the spread of yellow fever. The whole book is written in plain and straightforward language, controversy and technical discussions being omitted. The author rightly emphasizes Reed's services to the world, and at the same time draws attention to the fact that appreciation of Reed's great work has been slow and inadequate. The author says: "The inspiration of Reed's life lies to me in the fact that, though a man of war, he ravaged no distant lands, he destroyed no tens of thousands to make his reputation, but by quiet methods, when there was no strife, he saved countless lives and swept away a hideous plague, which from time immemorial had periodically visited our shores, devastated our fair land, and too often snatched from the years of peace and plenty all their blessings." A chapter is devoted to the work of the other members of the Yellow Fever Commission of 1900, viz., Carroll, Lazear, and Agramonte. Every physician should read this interesting volume and pass it on to patients and friends: it is historical, scientific, and patriotic.

Problems in Animal Metabolism. A Course of Lectures Given in the Physiological Laboratory of the London University at South Kensington in the Summer Term, 1904. By J. B. Leathes, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Philadelphia: P. Blakiston's Son and Company, 1906.

The increasing interest in the study of biochemistry that has characterized recent years has led to the appearance of many volumes on this subject, so that there is now no scarcity of books devoted to it. The present series of lectures, or perhaps more properly essays, forms a highly suggestive disquisition on some of the more intricate aspects of metabolic activity, the author's object being to point out that the study of animal metabolism is daily becoming less the study of the sum total of chemical change in the body, and more the study of the individual chemical reactions, the items that go to form the final sum. The lectures have the following titles: Introductory, Physiological Chemistry and Metabolism; The Assimilation and Synthesis of Carbohydrates; The Catabolism of Carbohydrates; The Assimilation and Synthesis of Fat; The Catabolism of Fat; The Assimilation and Synthesis of Proteids; The Catabolism of Proteids; The Metabolism of Cyclic Formations.

Infection, Immunity, and Serum Therapy. In Relation to the Infectious Diseases Which Attack Man; with Considerations of the Allied Subjects of Agglutination, Precipitation, Hemolysis, etc. By H. T. Ricketts, M.D., Instructor in Pathology, University of Chicago. Chicago: American Medical Association Press, 1906.

The lore of immunity and its allied subjects is still—and apparently is destined for some time to remain—in so complicated a state that the average medical reader finds it difficult to orient himself satisfactorily in this comparatively new field of investigation. So far our knowledge consists for the most part of a formidable mass of individual observations which have been ingeniously incorporated in a web of fine-spun theories whose ultimate fate is still uncertain. Most of this work has been published in special journals not readily accessible, and authoritative résumés of what has been accomplished are therefore highly desirable. The recently published English versions of Metchnikoff's "Immunity in Infective Diseases" and Ehrlich's "Collected Studies on Immunity" are well calculated to serve in this capacity, but suffer to a certain extent, from the standpoint of the general reader at least, in that they present the necessarily somewhat biased views of the leaders of two different schools, whose tenets, though not wholly incompatible, are not altogether easy to reconcile. The present volume is an admirably judicious conspectus of the whole field, in which the complicated terminology of the subject is made clear, the various theories are considered in detail, and their practical application is set forth. In the first part, devoted to general considerations, the underlying principles of natural and acquired immunity, toxin and antitoxin formation, the phenomena of agglutination and of precipitin formation, phagocytosis and its relations to the side chain theory, serum therapy, etc., are discussed. In the second part the application of these considerations to special diseases is taken up and separate sections are given to each of the infectious disorders, including diseases of doubtful etiology. An appendix brings the text well up to date, and a short but useful bibliography as well as an excellent index contributes to the value of the work. The volume is much more than a mere compilation, for the author's own personality is prominent on every page and his critical commentaries are always well advised. It is a pleasure to commend what is undoubtedly the most complete exposition of this subject at present available in English.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. Edin., Consulting Surgeon to the Royal Infirmary and to the Royal Edinburgh Hospital for Sick Children. Sixth Edition, Thoroughly Revised. New York: William Wood and Company, 1906.

This is one of the best instruction books for nurses that it has been our privilege to see. It is written in the lecture or conversational style and contains the substance of the lectures which the author has been delivering to the nursing staff of the Edinburgh Royal Infirmary for the past quarter of a century. All the subjects which concern nursing in surgical cases are taken up and treated briefly, but clearly and interestingly. Not the least useful of the lectures is the final one, containing "general advice to nurses"; the hints and the dont's and the practical advice herein contained may well be taken to heart by all young women about to enter the nursing profession.

A Nurse's Hand-Book of Medicine. By J. Norman Henry, M.D., Clinical Professor of Medicine, Woman's Medical College of Pennsylvania; Assistant Physician, Philadelphia Hospital; Physician to Out-Patient Department and Lecturer to Nurses, Pennsylvania Hospital. Philadelphia and London: J. B. Lippincott Company, 1906.

This most practical book of instruction to nurses comprises the substance of the course of lectures delivered annually by the author to the class of nurses at the Pennsylvania Hospital. In these days a trained nurse must not only know how to take the temperature and pulse of her patient, to measure the doses of medicine prescribed by the physician, and to make her charge as comfortable as may be; she must also be trained to know the symptoms of his disease and to be alert to detect any signs of good or evil omen which may declare themselves in the intervals of the physician's visits. She must be the physician's assistant, not his servant, and to fulfil this rôle satisfactorily she must have a medical training. To this end, in all good training schools a course of lectures is given by some member of the hospital staff, but in addition to the lectures a course of reading is necessary. For this there is no better book, so far as the purely medical side is concerned, than the one before us. The author has happily avoided the fault of speaking above his audience, and his lectures are adapted to the comprehension of readers who are not grounded in all the details of anatomy, physiology, and pathology. The student nurse who will study this book, supplementing it with one on surgical nursing, such as the "Notes on Surgery for Nurses," reviewed in the present issue, and one on obstetric nursing, will be well fitted for the work that is before her.

New Serum-Therapy. By D. Montgomery Paton, L.R.C.S. and L.R.C.P. Edin. New York: William Wood and Company, 1906.

This little volume contains the results of several years' experience, on the part of the author, with serum therapy. The book may be roughly divided into three parts, the first being more or less introductory and at the same time referring to unsatisfactory results with serum therapy, which may be due to either the serum, the patient, or the physician. The second part, which forms the bulk of the book, is the report of several series of cases in which the serum therapy was tried. These cases include almost every kind of possible ailment, and for purposes of reference are arranged alphabetically, extending from appendicitis to traumata. The third part deals with the theory of the action of the sera orally administered; tissue resistance and immunity are also discussed in this part. The action of the sera when administered by the mouth is explained on the theory of increased tissue resistance and is regarded as being neither antitoxic nor antibacterial. The book, which represents considerable work on the part of the author, is clearly and concisely written, and is well worth reading. While there are reports of nearly three hundred cases treated by the method here advocated, no extravagant claims are made for the new serum therapy, the author's conclusion being that while serum therapy has been of great service it has not fulfilled the bright hopes of its inception.

Society Reports.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-first Annual Meeting, Held at Hot Springs, Virginia, May 22, 23, and 24, 1906.

The President, Dr. Richard B. Maury of Memphis, Tenn., in the Chair.

Is Gynecology Dead? Or Gynecology Against Overdone and Misapplied Surgery.—Dr. E. C. Gehrung of St. Louis protested against unnecessary, if not criminal, surgery that had been and was still being practised in cases that could not be benefited by the knife, and in others that could be as well or better treated by other and less radical means. In many of these latter, the knife might obtain a quicker and perhaps just as good result, yet at the cost of mutilation. Many women complained of various kinds and degrees of suffering, yet a most careful examination did not disclose anything on which to operate. Such women might be treated gynecologically with good results. All uterine displacements should be considered in the light of ptoses and herniæ. These enteroptoses might be of minor degree only, or might extend to the kidney or other abdominal organs, and thus produce symptoms for which the simple uterine displacement would not account satisfactorily. Concerning forward displacements, the situation was altogether different. Since anatomists said that anteversion and anteflexion were the normal positions of the womb, the pathologist denied pathological effects to antedisplacements, and the practitioner was only too happy to ignore a state of affairs for which the means of relief were so imperfect apparently and so difficult to apply, with so little or no results in prospect. The wearing of a pessary he considered as much a cure as the wearing of a cicatrix.

Dr. George M. Edebohls of New York said that his views in regard to anteversion and anteflexion of the uterus had undergone radical changes since he began to practise gynecology. Whenever he found on examination that the uterus was anteverted or anteflexed, it led him to suspect that he had to deal with excessive mobility of the uterus; in other words, it was the therapeutic equivalent of retroversion of the uterus, and he treated it like a case of retroversion, where the uterus was flexible or nonattached, by shortening the round ligaments, and invariably his efforts had been crowned with success.

Dr. J. Riddle Goffe of New York expressed himself as having been convinced for many years that anteversion was a normal position of the uterus, and he taught that anteversion should be stricken out of the list of pathological positions of the fundus of the uterus. He had not found in later years any occasion whatever to interfere with a fundus that lay well to the front. He believed the symptoms of which patients complained could be accounted for by other conditions than the position of the fundus, and he invariably found some pathological condition to account for the symptoms. As to anteflexion, he regarded it in a different light, and believed that the anteflexed uterus was, as a rule, unless the flexion was acquired, an undeveloped uterus, and he treated it by improving its nutrition, stimulating its circulation, and developing the organ. If the case was one of acquired anteflexion, he treated it very much in the same way, but did not interfere with it surgically by shortening its ligaments or by attaching the fundus to abnormal tissue.

Enteroptosis.—Dr. Richard R. Smith of Grand Rapids, Mich., discussed this subject with special reference to body form, and the mechanical conditions governing the position of the abdominal organs, as well as the use of the *x*-ray in demonstrating stomach and intestines. He said that the subject was of especial importance to the gynecologist since the majority of the patients that came to him for relief showed more or less signs of this condition. It might form merely the background of the picture which the physician had before him, or it might be the complete picture without other pathology. It could be left out of consideration as far as treatment went in patients presenting neoplasms or pelvic inflammatory diseases. It was of great importance in considering lacerations, the various displacements of the uterus, as well as that large class of patients presenting pelvic symptoms, so called, with slight or undemonstrable lesion. One should consider the matter of operation in such cases with great care, and be most guarded in his prognosis. Above all, in case operation was done, it was very necessary that a proper course of treatment be carried out afterwards if one expected to get results. Enteroptosis and fair health were not incompatible. The treatment of enteroptosis should really begin in childhood, and it meant all that proper hygiene could do for children. If a woman came suffering from the symptoms which accompanied enteroptosis, she should be put to bed. She should have an abundant, easily digested diet, be massaged, and any necessary indications as to the bowels and digestion should be met. Pain usually decreased rapidly under this plan. He advised many of his patients practically as he would a patient suffering from tuberculosis. If the abdomen was prominent or very flabby, and the woman had general abdominal tenderness, and more especially if he found that by standing behind her and placing the hands over the lower abdomen (the patient standing) and lifting up, relief was obtained, he advised a well-fitting abdominal bandage. If the patient was young, the thorax more or less mobile, he had often given a system of breathing exercises with the idea of increasing the lung capacity and the size of the upper abdomen.

Dr. Charles P. Noble of Philadelphia thought it was a mistake to teach that all patients who had loose kidneys had enteroptosis. It was only in a minority of cases that a loose kidney was complicated with enteroptosis. Many patients who had enteroptosis had loose kidneys, but the converse, in his judgment, was not true. He had seen a few cases of loose kidney due to traumatism, but the number was very small. The great majority of women who had loose kidneys were unmarried; therefore the question of child-bearing was a very small factor in these subjects. He recalled three cases in which he had operated with satisfactory results.

Dr. Matthew D. Mann of Buffalo, N. Y., said the all-pervading style among civilized women of constricting the waist line was an important causal factor of enteroptosis. The universality of this mode of dress had a great deal to do with the condition mentioned, as it was more commonly found in women than in men. Men who wear tight belts, like blacksmiths, and men who constrict their waists with bands, were the subjects of enteroptosis. He condemned the use of corsets as worn by young women, and said the thorax could never attain its proper shape; the abdominal muscles lacked supportive power, and the contents of the abdomen would be forced down into an abnormal position. He had not been satisfied with operative procedures for the relief of the conditions mentioned.

Dr. John G. Clark of Philadelphia had had twenty-one cases of various ptoses of the viscera, chief among which were ptoses of the transverse colon, especially of the sigmoid flexure. He recalled several cases of ptosis of the sigmoid flexure, where a loop of bowel had been caught, in which there was alternating constipation and diarrhea, the patient going three or four or five days before the bowels would move, and then possibly suffering from a copious diarrhea. As to the etiology, his own feeling was that in many of these cases inattention to the bowels was one material factor.

Dr. J. Riddle Goffe asked what percentage of these cases came to operation.

Dr. Clark replied a very small percentage, as medical men relieved the great majority of them.

Dr. J. Clifton Edgar of New York called attention to the

too early getting up of women after confinement as a causal factor of enteroptoses. Women, when they got up too early after confinement, complained of stomach trouble, and drifted into the hands of a stomach specialist, who found dropping of the stomach or intestines, yet they had not complained before. Such women were prone to attribute their discomfort to uterine trouble, to uterine displacement, etc. Constipation, alternating with relaxation of the bowels, produced by the constant administration of cathartics given during pregnancy, was one of many causal factors. There was a faulty involution of the intestinal supports. As to prophylaxis, massage was a valuable means. He believed in women wearing an abdominal support for three months after confinement, especially primipara.

Dr. J. Riddle Goffe, in referring to the corset as a part of woman's dress, said he believed the new-fashioned straight-front corset was an improvement over those previously worn. He thought it was a beneficial garment to women. Instead of using abdominal supports, as was formerly his custom after laparotomy, he put a woman in a straight-front corset, which was carefully made by a woman who carried out his idea. He had also recommended this corset to be worn by women with pendulous abdomens. He reported two cases of gastroptosis which were relieved by operative procedures.

Dr. Smith, in closing, said a tight corset would exaggerate such conditions as he had referred to, but it must be remembered that enteroptosis was not due to the wearing of a tight corset nor to tight lacing. Enteroptosis was quite common in Arabian women.

Thrombosis and Embolism Following Abdominal Operation.—Dr. Joseph Taber Johnson of Washington, D. C., said that these complications occurred most frequently after supravaginal hysterectomies for fibroid tumors, although they might follow any abdominal section, notably after suspension of the uterus. The left leg was most frequently affected; both might be alternately. The symptoms generally appeared between the second and third weeks. Suppuration was rare. Recovery was the rule, although convalescence was protracted. Pulmonary, cardiac, or cerebral embolism might result, and prove rapidly fatal. The author reported two such cases. He gave the histories of six cases of thrombophlebitis with slow recoveries. Was this form of phlebitis the result of infection, or was the thrombus caused by an extension of the inflammatory process along veins injured during the operation?

Postoperative Embolism.—Dr. Eugene Boise of Grand Rapids, Mich., said that it affected the pulmonary artery and its branches in the great majority of cases. An embolus presupposes a thrombus. For the formation of a thrombus three elements were necessary, fibrinogen and calcium salts, which existed normally in the blood, and nucleoproteid, which was never found in normal blood. Nucleoproteid was formed by the degeneration of blood plates and leucocytes. Certain conditions of the blood and blood-vessels predisposed to thrombosis, as anemia or chlorosis, sepsis, excess of calcium salts, retardation of rate of blood current, traumatism, inflammation of coats of vessels, pressure, etc. Conditions calling for operation often involved one or more of these conditions. Fibroid tumors, which showed the greatest percentage of postoperative emboli, were coincident with excess of calcium salts in the blood and degeneration of the musculature of the heart, with consequent imperfect contractions, and residual blood, with retardation of blood flow, predisposing to heart clot. Indications for treatment were mostly looking toward prevention. When pulmonary embolism occurred, nothing was of much avail except the administration of oxygen.

Dr. Charles P. Noble said of 7,130 women operated on in the Johns Hopkins Hospital, in 48 phlebitis occurred. He did not think sepsis had much to do with the production of phlebitis or embolism.

Dr. Reuben Peterson of Ann Arbor, Mich., said that the mystery in the etiology of thrombosis and embolism made it doubly interesting. These conditions came on not only immediately after operation, but a month or six weeks afterwards. He had a patient in the University Hospital with an aggravated form of femoral thrombophlebitis which appeared in the third week after operation. The operation consisted of removal of nonpurulent, nonadherent appendages. There was not enough sepsis connected with the case to warrant one in thinking that any such condition would develop. He had taken statistics from his clinic for the last four and a half years, but which did not include the case mentioned. Of 3,000 operations performed during this period, at the University Hospital Clinic, there were six cases of femoral thrombosis. There were 1,050 women operated on. As regarded the time of its occurrence after operation, in one case it occurred eleven days after operation, in two cases fourteen days, in two cases nineteen days, and in one case twenty-one days.

Dr. Edward Reynolds of Boston said thrombosis had occurred most frequently in his experience in cases treated for the correction of retrodeviations of the uterus, in which there had been a great deal of congestion before operation. He was inclined to believe that thromboses were more frequent now than they were a dozen or fifteen years ago.

Dr. Andrew F. Currier of New York said the tendency of surgeons in these days to get patients up in a hurry after the performance of serious operations, had doubtless something to do with the production of thrombosis.

Dr. Seth C. Gordon of Portland, Me., agreed with Dr. Currier, and expressed the belief that too early getting up of patients after operation was causative of phlebitis.

Dr. T. J. Watkins of Chicago said evidence had been brought forth to show that thromboses were in some cases due to infection. Thromboses were common in infectious diseases, where there was no traumatism. They were common after typhoid fever. If statistics were worked up, he believed it would be found that thromboses were nearly as frequent after typhoid fever as after abdominal section.

Dr. J. Montgomery Baldy of Philadelphia said that, while sepsis, pressure by retractors, and traumatism of the pelvic veins were possible causal factors, none of the explanations so far offered seemed sufficient to explain a large number of cases. The subject was further discussed by Drs. Le Roy Broun, New York; John G. Clark, Philadelphia; M. Dührssen, Berlin, Germany; George M. Edebohls, New York; Richard R. Smith, Grand Rapids, Mich.; Richard C. Norris, Philadelphia; Henry P. Newman, Chicago, all of whom reported cases substantiating and corroborating the observations of both essayists.

Anomphalosis.—Dr. A. H. Buckmaster of Charlottesville, Va., read a paper on this subject.

Artificial Dilatation of the Cervix Uteri; Indications and Method.—Dr. George Tucker Harrison of New York said that, among indications for the artificial dilatation of the cervix might be cited in the first instance, local morbid conditions which interfered to such an extent with the dilatability of the os uteri and cervix that the natural forces were inadequate to the end to be attained. In addition, direct danger to mother and child might furnish an indication for the artificial dilatation of the cervix, a danger only to be averted by a speedy delivery of the child. An indication for the incision of the os uteri was given when immediate delivery was a matter of paramount importance, the os uteri not being sufficiently dilated, the cervical canal, on the contrary, unfolded. The deep incisions of the cervix usually combined with deep vaginal and perineal incisions opened up a wider field of operative intervention. The advantages of this procedure were pointed out. Mechanical dilatation of the cervical canal and external os uteri could be effected by distention with the fetal body after bringing down a foot; by the hand; by the use of expanding foreign bodies, such as tents, dilators, iodoform gauze, rubber bags, or balloons.

Dilatation of the Parturient Uterus.—Dr. Philander A. Harris of Paterson, N. J., in referring to manual dila-

tation, said he wished to be distinctly understood as referring to a method which he had employed for the past twenty-two years, and to no other method. By this method a far greater tonic strain could be applied upon the musculature of the cervical ring than by any other manual method. It relied mainly upon the flexor muscles of the fingers and hands. Not all cervices were dilatable. Cancer of the cervix might render it undilatable. A cervix which had been partly cut away, and amputated and sewn, or resewn, might contain so much white fibrous tissue that it was undilatable The average time required to dilate the cervical ring safely to a circumference of eleven or twelve inches should be forty-five minutes. If the cervix was not effaced, the average time of ninety minutes would be necessary to safely dilate the cervical ring to a circumference of eleven or twelve inches. The special advantage of knowing how to dilate the cervix manually was that the operator always had his hands with him, and they would scarcely ever fail to dilate the cervix if properly used. The advantages of instrumental dilatation, as accomplished by the instrument which the author presented, were that it would dilate any cervix that was dilatable. The instrument was easy of introduction. It did not have to be withdrawn and reintroduced over and over again, as would happen in the long operation, when done by the hand. It was provided with a dynamometer which showed not only the number of pounds pressure which was being exerted upon the cervical ring, but also whether the ring was dilating under the pressure. The instrument had a safety device, so that extensive laceration could not occur if it were properly used. A good deal of study was required to prepare one to use the instrument safely.

Advantages of Bimanual Dilatation of the Pregnant and Parturient Uterus.—Dr. J. Clifton Edgar of New York said that no method of manual dilatation could ever entirely supplant instrumental dilatation and incision. Dilatation by hydrostatic bags, the fingers of one or both hands, and branched dilators was feasible in most instances and was to be preferred to methods by incision. Incision of the uterus for purposes of dilatation was rarely indicated. The best method of cervical dilatation was the one which most closely imitated nature's method of dilatation; hence the advantages of hydrostatic and manual dilatation. He preferred the bimanual method of dilatation for the following reasons: "(1) The bimanual method is a closer imitation of the natural process than any other method of manual dilatation, being in this respect analogous to the bag of membranes or the hydrostatic bag, because the force used for dilating the cervical ring is directed from above downward. (2) Far greater force can be brought to bear upon the cervical ring, if need be, by the bimanual method than by any other, because the fingers of both hands are brought into play, and the stronger flexor muscles of the fingers and hand are the ones made use of. (3) There is no danger of prematurely rupturing the membranes, as there is when the fingers of one hand are passed through the cervix. (4) There is no interference with the original presentation or position, since the finger ends closely hug the lateral uterine wall; this cannot be said of any other manual method of dilatation, nor even by hydrostatic bags. (5) The bimanual method is far less fatiguing than any other method, because the strain is distributed in both hands, and the sense of touch of the operator's fingers is unimpaired, as there is no constriction of the hands as there is when one hand is used."

Dilatation versus Incision of the Gravid Uterus.—Dr. Egbert H. Grandin of New York, in a paper with this title, said the subject must be considered from the standpoint of elective operation and from the viewpoint of emergency operation. Incision should never be resorted to when the complication calling for intervention justified delay. Thus induction of labor in a case of pelvic contraction, interference in many cases of impending toxemia, as also in most instances of placenta previa, called for dilatation. On the other hand, the acute toxemias, the urgent instances of placenta previa, called for incision. The operative methods to be considered were abdominal and vaginal incision, and manual and instrumental dilatation. Broadly stated, in pelvic contraction, whenever it was doubtful that dilatation or vaginal incision would permit of delivery, abdominal incision was called for. In the acute toxemias, where the time element entered as a factor, and in rare acute cases of placenta previa, vaginal incision was justifiable; else dilatation should be the rule after a prescribed technique. Such devices as the Bossi dilator should receive the unqualified condemnation of American obstetricians. They were needless where the educated hand existed; they were dangerous under any condition. In the event of incision being indicated, the vaginal cesarean section was to be commended as preferable to the Dührssen incisions. The indication for either was extremely limited.

Vaginal Cesarean Section. — Professor Dührssen of Berlin, Germany, summed up the indications for this operation as follows: Vaginal cesarean section was indicated when in the case of an imperfectly dilated cervix, which would not permit of dilatation by gentler means, the life of the mother or the child was brought into danger. Also the presence of an operator experienced in vaginal operations was required. Imperfect dilatation of the cervix might be caused by pathological changes in the neighborhood of the lower uterine segment, or danger to the mother and child might arise when the pains had as yet caused insufficient opening of the os. In the first, the case was that of an absolute, while in the second, it was that of a relative, obstruction to delivery. The first must be removed because it would lead to danger for the mother and child. In the second, the danger was already present, and required the immediate emptying of the uterus. Among the special indications he mentioned that of eclampsia. He first established the principle that on account of the independent nature of eclampsia it was best, as soon as the diagnosis was made, to empty the uterus by narcosis. Investigations of the last few years, which recognized eclampsia as an intoxication produced by pregnancy, had shown that he was right. He had collected 376 cases of vaginal cesarean sections, with forty-eight deaths, a mortality of 12.7 per cent. This high mortality was not due to the dangers of the operation, but to the serious diseases for which operation was undertaken. This proved that the greater operation, namely, the radical vaginal cesarean section, had a lower mortality than the conservative vaginal cesarean section. Of 53 cases of extirpation of the uterus after vaginal cesarean section, this combination of operations, only five died. This further proved the low mortality of the conservative vaginal cesarean section, in clinics where immediate deliveries in cases of eclampsia had been effected according to the author's teachings and directions. Veit had only one death in 33 cases, Bumm only one death in his last 40 cases.

Development of Cancer in the Cervical Stump Following Supravaginal Hysterectomy.—Dr. Andrew F. Currier of New York said that the cases in which this complication might arise were usually those in which the uterus had been removed for myoma. That myoma frequently coexisted with cancer was a matter of common observation. Piquand had collected 45 such cases, in 24 of which it was thought that the fibromuscular elements had been transformed into epithelial cells, although in some of them there were preexisting cells which proliferated and developed malignancy. These cells were supposed either to have been derived from the embryonic remains of the Wolffian or Muellerian canal, or to be simply epithelial ingrowths into the fibrous tissue. The author was satisfied from his own experience that the coexistence of cancer and myoma was much more frequent than Piquand would seem to think. Noble, in an analysis of 1,188 cases of fibroid tumor operated upon by various surgeons, found 29 in which cancer of the corpus uteri was a complication, 12 in which there was cancer of the cervix, and 1 in which there was can-

cerous infiltration of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia. The author had not yet seen any conclusive evidence that myoma was transformed into carcinoma, and histologically one would not expect such a sequence. The suggestions which occurred to him in connection with the consideration of this subject were the following: (1) The necessity of more careful clinical and pathological records, both public and private, in all the cases in which supravaginal hysterectomy was performed. This would probably result in the discovery of cancer of the endometrium in cases in which it was not suspected, and would probably bring to light additional facts in regard to the history of the evolution of cancer. (2) The periodical examination of those who have undergone the operation in question at not longer than six months' intervals. This was especially desirable for those whose tissues were in a bad condition of nutrition or who suffered from an hereditary taint. (3) Complete removal of the uterus offered greater security from cancer than retention of the cervix. If the patient's history revealed any conditions which suggested the possibility, near or remote, of future degeneration of tissues, complete extirpation should be the invariable rule.

The Search After Truth.—Dr. Richard B. Maury of Memphis took this as the title of the President's Address. He referred feelingly to the deaths of Drs. A. Palmer Dudley of New York, James R. Chadwick of Boston, Arthur W. Johnstone of Cincinnati, and R. Stansbury Sutton of Pittsburg, which had occurred during the year. The President then made some remarks on the subject of uterine displacements and referred to a discussion on anteflexion before the society in 1888, which was participated in by T. Gaillard Thomas, Graily Hewitt, Sir William Priestley, and others, the conclusion having been reached by those men at that time that the man who would not use pessaries in the treatment of anteflexion was unfit to practise gynecology. The intrauterine stem had passed out of the history of gynecology, perhaps forever, and would never again come into favor. The knowledge of pelvic inflammation was so fully disseminated that every practitioner realized the peril to a woman from its use. Dr. Maury discussed at considerable length how the uterus was sustained almost entirely by its ligaments, but said that some of the teachings regarding this matter were erroneous, in that the proper supports of the uterus were not the ligaments, but the various structures which constituted the two segments of the pelvic floor, as was demonstrated by Hart and Barbour. He discussed the various methods of the repair of injuries of the pelvic floor. In conclusion, he thanked the members for the distinguished honor conferred upon him in electing him President.

Results of Vaginal Section and Drainage in Early Cases of Ectopic Gestation.—Dr. Willis E. Ford of Utica, N. Y., reported twelve cases, which were all seen before rupture had occurred, and some of them as early as in the eighth week. In all the cases the incision was made cautiously into the sac, the finger being used to open into it, and the contents examined before the finger was wholly withdrawn, so as not to lose the landmarks. In no case was all the blood emptied at the time of the incision, but gauze was carefully passed into the opening and very firmly packed to prevent hemorrhage, and allowed to remain for a week before removal. In this way hemorrhage was avoided, and the operation was almost trivial in its consequences. The fact that the cases operated on by him early left almost no trace of anything wrong in the pelvis afterwards, and that the operation was so safe and so certain in its results, had impressed him that the society should urge early diagnosis and early operation in all cases of extrauterine pregnancy. If the teaching in the medical schools could be so modified as to impress upon medical students a more careful consideration of the subjective symptoms until skill enough had been acquired to enable the verification of the diagnosis to be made with certainty, he was sure that these cases of ectopic gestation would be seen early enough to be operated, and thus prevent rupture and hemorrhage in a large number of instances.

Review of the Surgery of the Female Pelvic Organs.—Dr. Seth C. Gordon of Portland, Me., presented the following conclusions: (1) That the Battey operation was one that did an immense amount of good in the practice of men of experience and skill in operating. The results in many cases were often delayed for obvious reasons. Undoubtedly much more harm than good was done because of inexperience in pathology and operative skill. (2) So-called conservative gynecology in too many instances was but a conservatism of diseased organs, in whole or in part, and not conservative of the health of the patient. (3) The sentiment was already changing from this extreme conservatism to a more careful consideration of the future condition of the patient, as instanced in a more general belief in hysterectomy for fibroids of the uterus instead of myomectomy. (4) In resections of the adnexæ regard should be paid to the history of the cause of infection rather than to the macroscopic condition, as the virulent germs produced changes that required total removal, together with the uterus, as the only safety to the patient. (5) In malignant disease of the uterus efforts should be made to discover it early, when panhysterectomy might be done to advantage. Advanced cancer might be treated tentatively by curettage and actual cautery. The extremely extensive operations of attempting removal of a wide margin around the uterus had produced unsatisfactory results, with a very high mortality and early recurrence. (6) Surgical measures for displacements were still *sub judice*, so far as any agreement as to any special method was concerned.

Conservative Operations on the Ovaries.—Dr. J. Montgomery Baldy of Philadelphia said, among other things, that sentiment had no place in deciding what should be done in the presence of a diseased ovary. Nor was the anatomical limit of disease and health in this organ the only thing to consider. It was difficult to tell what was and what was not disease in the ovary even microscopically, and in a very large number of instances it was necessary to decide the question by the symptoms and not by the make-up of the organ. Conservative operations on the ovaries were so commonly mixed up with the removal of adhesions, replacement of the uterus and other accompanying procedures, that it was utterly impossible to distinguish between results. Immediate results and end results were different. End results were not always reliable. It was only by the survey of the whole case, general as well as local, together with a profound practical knowledge of human nature, as well as a sublime respect for the vagaries of women's nerves, that one could appreciate the full truth. Again, end results were important in that large numbers of women were operated upon, the lesions corrected, and yet no good or only temporary results obtained. Cases were cited in point. Putting the facts squarely before the ordinary woman, giving her full, unprejudiced freedom of decision, in twenty-four cases out of twenty-five he believed she would decide for a complete operation. Sentiment existed largely in the doctor, not in the woman, and the few who were influenced by it had been educated up to that point by the class of doctor who objected to the removal of the ovaries because he found on analysis of a group of cases that "78 per cent. subsequently suffered a notable loss of memory; 60 per cent. were troubled with flashes of heat and vertigo; 50 per cent. became irritable, less patient, and some so changed as to give way to violent and irresponsible fits of temper; 42 per cent. suffered more or less from mental depression; 35 per cent. increased in weight, and some became abnormally fat," his general intelligence being such as not to appreciate that the picture he drew as one of bad results following faulty judgment was merely the symptoms of the natural and inevitable menopause and which would in a short time leave the woman as surely as they came to her.

Facts and Figures of End Results in One Hundred Cases of Conservative Operations on the Uterine Appendages.—Dr. Walter P. Manton of Detroit, Mich., said that in order to ascertain his own experience along conservative lines, he had taken one hundred cases from his notebooks. Of the 100 women, there were 30 single, 64 married, and 6 not noted. The following operations were done: On the ovaries, resection of both ovaries in 17 cases; right ovary in 26 cases; left ovary in 13 cases. Puncture of both ovaries in 22 cases; right ovary in 8 cases; left ovary in 14 cases. In 19 women the ovary of one side was found to be so largely involved as to require removal; the right in 6 instances; the left in 13. Resection was done in both tubes in 13 cases, right tube in 4 cases, and left tube in 9 cases. It was found necessary to remove one tube in 10 of the patients, the right in 4, and the left in 6 cases. The opposite side was left untouched or resected. In the 100 women the immediate results were entirely satisfactory; that is, all the patients recovered from operation and were relieved from the sufferings of which they formerly complained. The mortality was therefore *nil*, and the results temporarily perfect. The majority of these patients remained under observation for at least three months. He maintained that his own statistics and those of others showed that the conservative surgery of the ovaries and tubes, having passed the experimental stage, had established itself as a legitimate and successful operation in all the conditions to which it might be properly applied, and that it should be the operation of choice in all instances during the child-bearing age, where the diseased state of the organs admitted of its employment.

The Technique of the Repair of Large Vesical Fistulæ.—Dr. William S. Stone of New York read a paper on this subject, in which he summarized as follows: "(1) The basic principle in the repair of the large fistulæ is an extensive separation of the bladder walls, especially of the upper part in front of the cervix, by means of which it is readily sutured to the more fixed lower portion. (2) The uterus, which has been made movable by the free dissection entailed in the separation of the bladder, or by an additional incision posteriorly in some cases, is a most valuable supplement in filling up the opening in the vaginal wall. (3) With these principles applied, it is a matter of little importance what kind of suture material is used, or what relation the vesical and vaginal suture lines have to each other."

The Treatment of Vesicovaginal Fistulæ.—Dr. I. S. Stone of Washington, D. C., said experience had shown that wounds of the bladder made during the performance of surgical operations healed readily after careful application of sutures. This occurred after injuries at the base, as in vaginal hysterectomies, as well as in those at or near the fundus, which were comparatively frequent in operations upon the uterus for the removal of tumors. Two principal causes contributed to this result. One was the healthy condition of the bladder itself, and another was the ease with which the muscular wall of the organ could be approximated when absolutely free from the uterus or vaginal wall. It had been his experience that the very large fistulæ afforded such free drainage as to secure perfectly healthy mucous surfaces of both bladder and vagina, the only exception being in one bedridden patient who had been indifferently cared for and whose fistula was covered with incrustations. It would be found in many instances that large fistulæ had persisted because they were associated with injuries of the vagina of a serious character which produced extensive cicatricial contraction. He had found it unnecessary to treat these cases by the tedious method of Bozeman, and now felt confident that any fistula could be closed satisfactorily by first liberating the bladder from any adherent surface or organ which prevented its closure, and then by uniting the margins of the fistula with catgut, and afterwards, at the same sitting, by utilizing the vaginal wall of the uterus as might be needed to support the line of sutures in the bladder wall. This was opposed to the contention of those who favored suture of the supporting base only—the vaginal wall, for example. Finally, one might draw the vaginal walls forward after suitable dissection, or he might utilize the uterus as suggested by Kelly, which was done by drawing forward the cervix and making it secure with sutures to the anterior margins of the fistula, or by using the Freund method of turning the fundus downward and then forward into the opening. This last method seemed to him quite objectionable, as it necessitated a new opening into the cavity of the uterus to provide for the escape of the menstrual flow. He had overcome the disadvantages of this method of Kelly's, and had obtained abundant mobility by drawing down the uterus, cutting away the anterior vaginal wall, and dividing the broad ligaments so as to cause less traction upon the sutures. This had also been accomplished by separating the bladder from the uterus and broad ligaments through an abdominal incision, and by a division of the broad ligaments at their upper border, where they were attached to the uterus. This method had been used for the relief of fistula of any description, and the profession owed acknowledgment to Mackenrodt for priority and for clearly establishing its usefulness in almost any fistula of whatever shape, position, or size. In the treatment of small fistulæ, the vagina was divided longitudinally, the bladder separated from the vaginal wall, then united, and the vaginal wall closed, each independently. He had found its best and most useful application in the closure of large fistulæ, and where failure had resulted after previous attempts at cure. Illustrative cases were cited, in which excellent results were obtained.

Dr. Howard A. Kelly of Baltimore read a paper in which he discussed the abdominal extraperitoneal and abdominal transperitoneal operations. He pointed out the best means of exposing a difficult vaginal fistula; also how to preserve the uterus, and when to sacrifice it, if necessary. The methods of approximation in one layer or in two were also expatiated upon.

Shortening of the Round Ligaments Within the Inguinal Canals Through a Single Suprapubic Transverse or Median Longitudinal Incision.—Dr. Reuben Peterson of Ann Arbor, Mich., said that in his hands the Alexander operation for shortening the round ligaments had proved the most satisfactory of all the operations for backward displacement of the uterus. However, the operation had two great disadvantages. It was limited to freely movable uteri, and it necessitated two incisions. In the operation now employed by the writer the work (1) was performed through a single incision, preferably through a suprapubic, transverse incision not more than three inches in length. (2) The external rings were easily exposed by such an incision. (3) They could be readily, although not so easily, exposed by the ordinary median longitudinal incision. (4) The operation was applicable to adherent as well as movable uteri, since the abdomen was opened in every instance. (5) By following out a certain technique the round ligaments could be definitely and quickly located in every instance.

Dr. George M. Edebohls of New York reported a third case of renal decapsulation for puerperal eclampsia.

Hypernephroma Renis.—Dr. J. Wesley Bovee of Washington, D. C., reported two such cases and said that hypernephroma was the commonest form of kidney tumor. Many kidney tumors formerly thought to spring from kidney structure were now known to originate in islands of suprarenal tissue included in the kidney. He spoke of the so-called renal nests. Such deposits of renal tissue were common along the genitourinary tract, were usually benign in character, but might become malignant. The treatment consisted of removal when they gave symptoms.

Dr. George H. Noble of Atlanta, Ga., followed with a paper in which he discussed intramural abscess in the puerperal uterus.

Officers.—*President*, Dr. Clement Cleveland of New

York, *First Vice-President*, Dr. J. Clifton Edgar of New York; *Second Vice-President*, Dr. Willis E. Ford of Utica, N. Y.; *Secretary*, Dr. J. Riddle Goffe of New York (reelected); *Treasurer*, Dr. J. Montgomery Baldy of Philadelphia (reelected); *Member of the Council*, Dr. Richard D. Maury of Memphis, Tenn.

The society will hold its next annual meeting in Washington, D. C., 1907, in connection with the Congress of Physicians and Surgeons.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, June 11, 1906.

The Vice-President, Dr. Ransford E. Van Gieson, in the Chair

Lupulin in the Treatment of Gastrointestinal Diseases.—Dr. Heinrich Stern read this paper. (See page 443.)

Some Remarks on the Relations of the Gastrointestinal Tract to Nervous and Mental Diseases.—Dr. Robert Coleman Kemp read this paper. After briefly reviewing the relations of the gastrointestinal functions to toxemia, the writer stated he wished to call attention to the following propositions: (1) That epileptiform seizures or even true epilepsy might in some cases result from autoinfection; (2) that nervous, neurasthenic, or even melancholic symptoms might result from toxemia; (3) that in many cases of nervous or mental disease, derangements of the gastrointestinal functions, with resulting autoinfections, might aggravate the original condition from which the patient might be a sufferer, and thus create a vicious circle; (4) that it was the duty of physicians, both in asylum and private practice, to place their patients in the best possible physical condition. On a patient's admission to an institution for the insane, a thorough investigation should be made in each individual case into the existing conditions of the gastrointestinal tract, and appropriate treatment instituted. By this means alone could a scientific study of the relations of toxemia to nervous and mental diseases be made, and the results of treatment obtained. The late Dr. Emmet C. Dent was one of the first to appreciate the value of this method, and it had already been instituted at the Manhattan State Hospital on Ward's Island. Dr. Kemp said there seemed to be an unfortunate disposition on the part of neurologists to consider various gastrointestinal disorders invariably as the result of nervous or mental disease. While that was true in some cases, the speaker thought it had been fully demonstrated that in other cases the gastrointestinal disturbances were primary. All were familiar with the symptoms resulting from chronic constipation, such as headache, drowsiness, inability to concentrate the attention, general malaise, etc. Many nervous conditions, such as neurasthenia, mental depression, and melancholia, could be imputed to autointoxication. Autointoxication was common in alcoholism and drug habits. Epileptiform attacks were directly connected with putrefactive conditions in the intestines. Another interesting class of nervous cases resulting from autointoxication were those in which ptosis of the gastrointestinal tract was the primary factor. There were various types of this condition, from those of mild degree to the extreme condition described by Glenard. With descent of the stomach and intestines, there was a nephroptosis of the right kidney, sometimes of both, and there might be, in addition, ptosis of the liver and spleen. The gastric condition might be one of hyperchlorhydria, or of hypochlorhydria, or even achylia gastrica. Undoubtedly many cases of neurasthenia treated with brilliant results by the Weir Mitchell rest cure were the result of gastroptosis. Rest, and the putting on of fat to increase intraabdominal tension, were of value in ptosis. Rose's adhesive plaster belt was of service in the treatment of these cases, as it supported the organs and increased intraabdominal tension. The speaker said he considered mucous colic to be one of the manifestations of Glenard's disease, and the neurasthenic condition present in those cases to be the result of autoinfection. He also held the view that many cases of neurasthenia in women were due to autoinfection, associated with ptosis of the viscera. In closing, Dr. Kemp again emphasized the fact that the study of the relations of the gastrointestinal tract to nervous and mental diseases was of great importance.

Appendicostomy and Cecostomy for the Relief of Chronic Diarrhea: Report of Nine Cases.—Dr. Samuel G. Gant, in this paper, stated that chronic diarrhea was primarily the result of disease located in the colon, especially the sigmoid and rectum, very much more frequently than was supposed by the profession at large. The following were the pathological conditions of the lower bowel which most frequently gave rise to the condition: Carcinoma and other tumors within and without the bowel which obstructed its lumen; stricture; procidentia; invagination; polyps; fecal impaction; deviated coccyx; foreign bodies, colitis, and ulceration. Of these, the most common cause of the diarrhea was colitis, and the inflamed and ulcerated condition of the mucosa might be the result of a simple inflammation of the membrane, or it might be due to trauma, gonorrhea, syphilis, tuberculosis, or amebic dysentery, the latter proving quite common in this country since the recent war with Spain. When diet, internal medication, and irrigations had failed to arrest the progress of the disease, it was time to resort to such surgical procedures as colostomy, cecostomy, or appendicostomy. Dr. Gant said the object of his paper was to give his personal experience in the treatment of nine cases of persistent, ulcerative colitis and chronic diarrhea by means of appendicostomy or cecostomy. In eight of these cases the appendix was brought up, attached to the skin, and opened, in order to permit through-and-through irrigation. In the remaining case the cecum was opened and a catheter introduced after the method of Gibson, for the same purpose. The experience of Dr. Gant with these operations was most gratifying, and he said he had no more hesitation in advising these procedures for the relief of ulcerative colitis than he would of advising appendectomy for the relief of appendicitis. The operation of appendicostomy was comparatively simple; it could be quickly performed, and was no more dangerous than an interval operation for appendicitis. In performing this operation, the different operators varied the technique but little. The following, in brief, was the technique as practised by the writer: The abdomen was opened by a short intermuscular or gridiron incision, such as was made for appendectomy. The appendix was located, freed, if adherent, brought outside the abdomen, opened, and a probe inserted to make sure of its patency. If found to be too short, strictured, or otherwise unsuitable, it should be removed and a cecostomy substituted. If, however, the appendix was sufficiently long and patent, it was ligated and cauterized. The cecum at its base was sutured to the abdominal wall, and the parietal peritoneum, muscles, and skin closed with plain catgut sutures. The appendix was anchored to the skin by one or two sutures, and the wound covered with protective tissue and gauze, held in place by adhesive plaster. In some cases the mesoappendix was left intact, while in others the artery was ligated and the peritoneum stripped off. Usually the part of the appendix external to the ligature sloughed off about the fourth or fifth day, leaving the open stump projecting about one-fourth of an inch above the skin. The irrigations were begun immediately, using saline solution, ice water, or solutions of boracic acid, potassium permanganate, carbolic acid, krameria, ichthyol, bichloride of mercury, or nitrate of silver. In practically all the cases the abdominal discomfort and frequent evacuations ceased immediately after the operation or after the first irrigation, and within a few days the stools became almost normal, containing but little blood or mucus. It appeared to make but little difference what irrigating fluid was employed, provided that it was

used daily and in sufficient quantity to thoroughly cleanse the bowel. The operation had not been followed in any case by serious shock or great discomfort. Primary union occurred in all excepting two or three cases, where there were stitch abscesses. Only when the opening was small or showed a tendency to close was a catheter found necessary to enlarge the opening and allow free irrigation. The appendix was kept open for periods varying from three to twelve months, closing spontaneously in some cases, while in others it was necessary to cauterize the mucosa in order to close it. The only unpleasant sequela in the writer's series was a small ventral hernia. In one attempted appendicostomy the appendix was found short or completely occluded, necessitating its removal and the performance of cecostomy. In another case, the operation of appendicostomy was successful, but through-and-through irrigations were impossible because of a stricture of the transverse colon, which was detected at a second operation, when the appendix was removed and the abdomen closed. Dr. Gant then gave in detail the history of eight cases of appendicostomy and one of cecostomy, which demonstrated the value of these operations in ulcerative and inflammatory conditions of the colon, sigmoid, and rectum.

Dr. William H. Thomson said he would confine himself to a discussion of Dr. Kemp's paper, as the entire subject under discussion was almost limitless. He began by saying that we could treat disease successfully only by rational therapeutics, which were based primarily on an understanding of the nature of the disease. There was a radical and fundamental difference in nature between organic disease of the nervous system and functional disease of the nervous system—as much as there was between diabetes mellitus and smallpox. Nor should we treat functional nervous diseases and organic nervous diseases alike, because there was scarcely anything in common between them excepting the production of the nervous symptoms. For example, a case of hemicrania due to the presence of a syphilitic gumma was an instance of brain disease, although the patient might also suffer from vomiting and other symptoms. On the other hand, a case of hemicrania due to migraine was not an instance of brain disease. A case of general paralysis of the insane was again an instance of brain disease, while a case of melancholia had nothing to do with the brain. Organic brain diseases were always due to a demonstrable lesion or injury, or to a degeneration of some part of the nervous texture, while a functional nervous disease had nothing to do with the brain texture, but was invariably due to toxemia. It was of the utmost importance that we should recognize this distinction. With any derangement in the mechanism of an organ, there was a corresponding derangement in its function, or the mechanism of an organ may be perfect and the source of its function may be deranged. Thus all functions of the nervous system depended on the blood supply. In dealing with functional nervous diseases, the idea should first be gotten rid of that they were of less importance than those of an organic character. On the contrary, many of the more severe nervous diseases were purely functional. Among such might be mentioned tetanus, hydrophobia, and epilepsy; all functional nervous diseases, depending on the presence of certain toxins in the blood. Of course, the exciting causes of epilepsy were numerous, but the important factor was the toxin in the blood. An organic nervous disease, due to an actual change in the nervous texture, was permanent, while intermittency was a characteristic of all forms of functional disorders. There was absolutely nothing in the whole range of pathology that explained intermittency excepting a toxemic condition. The same was true of neurasthenia and hysteria, and the study of the toxemias that gave rise to these various functional nervous disorders was still in its infancy. In that connection the study of the processes of digestion, which had recently received so much attention, played a most important rôle. After referring to the interesting investigations of Pawlow in connection with the secretions of the gastrointestinal tract, Dr. Thomson said that unquestionably we had in those organs a more or less constant generation of toxins, in which the liver also took an important part. He was firmly convinced that it was along these lines that the solution of the problem of functional nervous diseases would ultimately be found. Since he had come to regard epilepsy in the light of a functional disorder, he had found that it was relatively a curable disease. Some of the most unpromising cases of many years' duration had yielded, not to the routine bromide treatment, but to treatment directed toward correcting an intestinal toxemia. The important point was to find the source of the poison. In hysteria, the attacks were almost invariably accompanied by a history of constipation. The function of the kidneys should also be investigated, as many of these patients habitually excreted a very low percentage of urea.

Dr. Achilles Rose said he wished to emphasize the point raised by Dr. Kemp in regard to the relation of certain mechanical conditions to various gastric and nervous disorders, and he called attention to the fact that the crosswise fibrous arrangement of the three flat muscles of the abdominal wall, the obliquus abdominis externus and internus and the transversus abdominis, was especially capable of effecting a narrowing of the cylindrical abdominal cavity. The abnormal effects of pressure and traction, as witnessed in atonia gastrica, caused pathological changes of the circulation and innervation. Ideas as to therapy would suggest themselves by balancing the various mechanical forces against each other, and by the intelligent exclusion of one factor or another. Mechanical expedients would in a great measure help in the achievement of good results. The object in utilizing mechanical force was to change the degree of involvement, to lighten overburdened points, and to place more work upon those which bore too little. That object we were able to accomplish by supporting bandages. Here there was a scientific foundation which in the chemistry of medicine was frequently conspicuous by its absence. Medicinal treatment was frequently but a blind experimentation with unknown quantities. This could best be seen by comparing the medicinal with the mechanical treatment of gastroptosia in some cases of neurotic affections, such as neurasthenia, hysteria, and mucous colic. It suggested itself to treat gastroptosia, which was present in most, if not all, of these cases, by means of plaster strapping. Such mechanical treatment must not necessarily be the exclusive therapy, but it may often be the most important. The speaker said he had also found the treatment by means of plaster strapping very satisfactory in cases of chronic diarrhea associated with atonia gastrica.

Dr. Edward Waitzfelder said he regarded the so-called functional diseases not as diseases, but as reflex manifestations from the cerebral or spinal centers, the irritation resulting from a change in the amount of blood supply. He believed they were hemic in their origin, and resulted from toxemia, which, acting on the smaller blood-vessels of the brain and spinal cord, induced a condition of either angiospasm or angioparesis, in all probability the former. He thought, speculatively, the condition was somewhat as follows: An error of digestion was followed by the production of certain (as yet unknown) bacteria, these germs and their toxins entered the blood, and the chemical irritation of these foreign substances on the centers in the brain and cord was followed by the nervous symptom-complex of the so-called functional nervous diseases, motor sensory, trophic, or psychic. The condition was parallel to that seen in the nervous symptoms accompanying chronic uremia, the toxemia of pregnancy, etc. Should this local angiospastic condition involve the vessels of the medulla and pons, a perversion of the functions of those organs would result, among which was a gastrointestinal angioparesis; this in turn would aid in the process of autoinfection, possibly by lessening the normal number of

phagocytes, enzymes, or other bactericidal agents, the nature of which would still have to be worked out. The speaker said he did not recognize hysteria, neurasthenia, chorea, exophthalmic goiter, epilepsy, or, in fact, any of the so-called functional nervous diseases, as an entity, but merely as nervous symptoms complex of a remote condition having a pathologicoanatomical or pathologicophysiological basis. He believed that the further development of pathological physiology would lead to a better understanding of the etiology of the so-called functional nervous diseases. He agreed with the previous speakers that the treatment of these cases should be carried on along the lines of causation, and not that of symptomatology; that the latter was merely blowing away the smoke, leaving the fire untouched. In the treatment of epilepsy, he believed that the elimination of toxins, together with the correction of errors of digestion by medicinal or mechanical means, would lessen the number of attacks, although he doubted that it would effect a cure after a number of years of the disease, when the "epileptic habit" had been established. In his opinion, after the function of a part had been impaired for a long time in consequence of an alteration in its nutrition, organic changes occurred of a fibrous, degenerative character, and an organic disease resulted, the lesions of which were permanent, and from which complete restoration of function was impossible. This was seen in epilepsy, exophthalmic goiter, paralysis agitans, and the various nervous diseases following arteriosclerosis.

Dr. William M. Beach of Pittsburg, Pa., said he firmly believed that colitis was a prolific cause of functional nervous disorders, and he expressed the opinion that the operaiton of appendicostomy, as applied by Dr. Gant, would be more generally practised in the future for the relief of chronic catarrhal conditions of the lower bowel after other methods of treatment had been exhausted.

The discussion was closed by Drs. Kemp and Gant.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held February 8, 1906.

Dr. Matthias Nicoll, Jr., in the Chair.

The Dosage of Diphtheria Antitoxin from an Experimental Standpoint.—Dr. William H. Park said that all knew that the diphtheria antitoxin was simply and absolutely used only against the toxin of diphtheria. Not only the poisonous substances produced by other bacteria, but even some of the intracellular poisons contained in the bodies of diphtheria bacilli were left unaffected by the diphtheria antitoxin. He said the question at issue was as to how much antitoxin injected into the tissue was required to neutralize the amount of diphtheria toxin produced in disease. He emphasized the point that when speaking of 1,000 units of antitoxin, one was speaking of a large amount of antitoxin, and that 10,000 units was a very large amount. The latter quantity was sufficient to neutralize five quarts of the strongest toxic bouillon obtainable. If all the antitoxin injected could meet the toxins as they were manufactured in the tissues it probably would not require a great amount of antitoxin to neutralize all that came from the tissues. The question arose as to how much toxin was present in each case. In diphtheria in man there was no way of judging this exactly, but in all probability, judging from animal experiments, there were not more than ten fatal doses for a man in the tissues of any case twenty-four hours prior to death; therefore, allowing for weight, each case would probably not have toxin to neutralize more than 100 units; probably not that much. This led one to consider the extent and rate of absorption of the antitoxin after the injection. If 10,000 units of antitoxin were inserted into the veins of a 1,500-gram rabbit and, one hour later, that rabbit's blood was tested, 30 or 40 units per c.c. would be found in the rabbit's blood. On the day following only 10 units per c.c., this drop from 30 to 10 units not necessarily showing any destruction, but possibly only the passing of the antitoxin into the general fluids of the body. If this same amount was given subcutaneously and the blood examined one hour later, instead of 30 or 40 units per c.c. being obtained, there would be obtained not more than 3 or 4 units. Therefore, it took a longer time for the antitoxin to get into the diseased tissues when administered subcutaneously than when given intravenously. If one wanted to get an immediate effect in a desperate case the antitoxin should be injected into the veins. Dr. Park, in considering the question as to whether one dose, or repeated doses should be given, said that while in moderate cases a single large dose was often sufficient, that several doses gave better results in bad cases than when a large amount was given at once. The administering of several doses would saturate the tissues several times. It must be kept in mind that antitoxin did not kill the bacilli, and in some cases a single dose, even when very large, did not seem sufficient. With regard to the length of time after the toxin had been injected and absorbed that antitoxin could be expected to do good, he said that he had tried to show this by giving animals ten fatal doses of toxin and, after varying periods of time, giving a certain quantity of antitoxin. In one animal, weighing 265 grams, to whom ten fatal doses had been given, and antitoxin one hour later, injecting 5 units, or five times the amount needed when given with the antitoxin, died on the seventh day. Another animal, weighing 330 grams, given the same fatal dose, with antitoxin given one hour later, .5 units injected, lived. Another animal, weighing 320 grams, that was given ten fatal doses, the antitoxin being given five hours later, 50 units being iniected, lived two and a half days, the same as one getting no antitoxin. Another animal, weighing 360 grams, and that was given four fatal doses, and the antitoxin being given one hour later, .04 being injected, died on the sixth day. Another animal, weighing 355 grams, that was given four fatal doses, the antitoxin being given on the fourth hour, 0.1 unit being injected, lived. From these and many more experiments it seemed certain that only a few hours could elapse after the blood had absorbed a fatal dose of toxin that antitoxin could have an effect. The greater the amount of toxin absorbed the shorter was the interval during which antitoxin was useful. He believed, with all the help possible from experiments, that the only way to get at the exact dosage of antitoxin was to watch carefully the cases receiving different doses. In hospitals the best way would be to have two series, one set treated according to those who believed in small doses, and the other according to the idea of those who believed in large doses of antitoxin, and then to alternate the cases. Dr. Park said that for three years he had studied experimentally the effects of large and small doses, alternating them, and he was fairly convinced on certain points. Those patients that received but 1,000 units at the first injection did worse than did those who received 2,000 units; the latter did not do quite as well as those getting 3,000 units. Those that received 1,000 units as an initial dose certainly did not get enough antitoxin, and the severe cases getting 2,000 units did not do nearly as well as one would confidently expect with larger doses. With still larger doses, however, the differences between those getting the different amounts was less and less manifest; thus, between those getting 6,000 and 12,000 units no definite differences were noted. During the last two years he personally had not had direct observation of the cases, but those who had charge of the diphtheria cases at the Willard Parker and Kingston Avenue Hospitals had informed him that the larger doses did better than the smaller ones. While not believing in the need of over 20,000 units in any case, he had not seen bad results from the administration of 30,000 to 50,000 units.

The Dosage of Diphtheria Antitoxin as Administered in the Hospitals of the Department of Health. — Dr. Wm. E. Studdiford presented this communication, which was read by Dr. Park. The majority of the cases entered the hospitals at the beginning of or the end of the third day, and a large percentage of them were laryngeal cases. About one-third of the deaths occurred within the first twenty-four hours. At the Riverside Hospital there were 563 cases, with 43 deaths, a mortality of 7.5 per cent. The tube cases numbered 269, with 123 deaths, a mortality of 45 per cent. The general mortality among 832 cases showed 166 deaths, a mortality of over 19 per cent. The maximum dose of antitoxin administered was 40,000 units, the minimum, 2,000 units, an average dose being 15,000 units. In the ordinary cases the maximum dose of antitoxin administered was 70,000, the minimum dose, 2,000, with an average of 10,000 units. There was among these a mortality of 6.4 per cent. Excluding the moribund cases, the mortality was 5.2 per cent. At the Kingston Avenue Hospital the total amount of antitoxin administered was 3,340,025 units. The total number of cases was 211. The average dose of antitoxin given was 11,090. The maximum dose was 45,000 units, the minimum dose, 2,000 units. The total number of tube cases was 65, with 34 deaths, a mortality of 52.3 per cent. Of these 65 cases 27 recovered, 34 died, and 4 remained. The total number of straight cases was 146, with 16 deaths, a mortality of 10.9 per cent.

New Preparation of Diphtheria Antitoxin.—Dr. Park said that a new preparation of antitoxin was gradually being given on the fourth hour, 0.1 unit being injected, next month (March), nothing but this would be supplied. It had seemed to him for years that they should get rid of much of the deleterious matter in the antitoxin, which gave rise to rashes, joint symptoms, etc. In 1900 Mr. Atkinson, the chemist in the Research Laboratory of the New York Board of Health, fractionated the serum and got rid of all but the globulin substances. This was tried in children, but it did not seem to give rise to less rashes than did the whole serum. About a year and a half ago Mr. Gibson improved on Mr. Atkinson's work by eliminating about one-third of the globulins. The question then was, Would this serum with albumins, non-proteid constituents, and about one-third of the globulins removed, give better results? At first many rashes developed, and then Mr. Gibson tried one modification after another, and, by and by he learned that it was rather the condition under which the globulins existed rather than their presence which was most important. He thus finally obtained an antitoxin solution which at present gave less rashes. In 200 cases only about 8 per cent. showed rashes and these were moderate urticarias. In all probability further fractionating was possible. The Health Department would furnish, after next month, only two strengths, one of 500 units per c.c., the other of 800 units. The serum would be supplied in 1,000, 2,000, 3,000, and 5,000 unit vials. In a few stations vials of 10,000 units would also be supplied. So far as the effect upon children went, there might be no harm in giving 15,000 or 20,000 units; but when only 5,000 or 10,000 were needed, that amount only should be given, because it was a serious matter to add so greatly to the cost of treatment, whether that was borne by the individual or the State. Dr. Park requested that, if rashes developed during the use of this new antitoxin serum, he might be notified by the physician in charge of the case.

Dr. John S. Billings, Jr., said that the inspectors of the Department of Health in Manhattan administered diphtheria antitoxin in 2,849 cases last year; of these 1,123 were proven not to be diphtheria, or admitted to the department hospitals and counted in their figures. Of the 1,726 diphtheria cases injected by the inspectors and remaining at their homes, 95 died, a mortality of 5.5 per cent.; there were 240 laryngeal cases and 41 died, a mortality of 15 per cent.; the number of cases intubated by the inspectors was 48, and 11 died, a mortality of 23 per cent. In 1904 the mortality among the operative cases was 44 per cent., just double what it was in 1905, and he could give no reason for this. In the borough of Manhattan in 1905 there were reported 7,553 cases of diphtheria, with 660 deaths, a mortality of over 11. The inspectors injected 1,726 of these and obtained a mortality of but 5.5 per cent. There were 642 cases treated in the hospitals, with 120 deaths, a mortality of 18.5 per cent. There were 684 cases reported by physicians who injected antitoxin furnished free by the Department of Health, with 68 deaths, a mortality of about 10 per cent. If now the three classes of cases be added together and deducted from the total, it would be shown that there remained about 4,500 cases and 377 deaths, a percentage of about 8 per cent., a very good showing, indeed. In Brooklyn the mortality was about 12 or 14 per cent., while in Queens it was 13 per cent., and in the Bronx, 20 per cent. The inspectors used for the first dose, as a rule, from 2,000 units up, seldom using as much as 7,000. In the average case they used about 5,000 units, although in very severe cases they might use as much as 7,000 or 8,000, and occasionally 10,000.

The Dosage of Diphtheria Antitoxin in Private Practice.— Dr. Charles Gilmore Kerley said that with the increased knowledge gained from the successful employment of antitoxin in many cases we were now in a position to lay down more definite rules for its administration. It had been learned at what period of the disease antitoxin could be given to the best advantage, the necessity for a variation in the dosage in the different forms of diphtheria, and the clinical signs which called for a repetition of its use and its dosage at such repetitions. The ultimate amount of antitoxin which a given case might require could only be determined by noting the effects as produced on the disease. Early in the use of diphtheria antitoxin 1,000 units was given as the initial dose; now many physicians rarely gave less than 5,000 units, even though the case was seen on the first or second day. He stated that in regard to dosage he made no age distinction. In diphtheria we could not temporize or trust to chance, no matter how mild the case might appear at the onset. On the first or second day 5,000 units was given. In the majority of his cases, when this large initial dose had been given, a repetition was not necessary in the non-laryngeal cases. Even if a child recovered under repeated small injections, the attack was prolonged, increasing the chances of various complications. If improvement was not apparent in eight or twelve hours, as indicated by a broken granular appearance of portions of the membrane, with lowered temperature and improved general condition, the dose was repeated not later than twelve hours after the first injection. If an extension of the membrane had taken place, double the amount, 10,000 units, should be given. If the case was seen on the third day with marked toxic symptoms, 10,000 units should be the initial dose, and should be repeated at ten- or twelve-hour intervals until no longer required. In laryngeal cases 5,000 units should be the initial dose, repeated in eight hours if relief did not follow. He cited a case in which 11,000 units were given in nine hours, and another in which 9,000 units were given in twenty-four hours, both of which recovered. In his observation laryngeal intubation cases required from 10,000 to 15,000 units, even when used early. Antitoxin should be used even in apparently moribund cases. In mild nasal cases without fever 3,000 units had been sufficient to clear up every case. For immunization not less than 1,000 units should be given. In several cases in which he had known diphtheria to develop within a few days after an immunizing dose the patients required smaller subsequent dosage than was necessary in those by whom they were infected.

Dr. B. Franklin Royer of Philadelphia, in discussing Dr. Kerley's paper said we should strive to harmonize our views as nearly as possible in regard to the dose of antitoxin required for diphtheria in the various sites. We

should try to learn the number of hours that might elapse after absorption of toxin before chemical action with body cells took place. From experiments it was evident that we could do nothing with toxin absorbed twenty-four hours ago. He thought that manufacturers of antitoxin and boards of health were responsible for the small doses given in private practice. It would seem advisable to have antitoxin dispensed in larger-sized doses than it was at present. If larger doses were given fewer injections would be necessary, and the public dread of administration would be decreased. In his experience at the Municipal Hospital in Philadelphia, during twenty-nine months, more than 2,400 diphtheria patients were admitted. While treating these they had striven to determine the dose suitable to the various conditions. They had concluded that the best guides to determine the dose were, first, the amount of pseudomembrane present; second, the location of the pseudomembrane; and third, the duration of the disease. Age was not considered in determining the number of units to be injected. A single tonsil covered with pseudomembrane required a small dose; both tonsils covered, with overlapping of pillars and appearance of membrane on the uvula meant that a still larger dose was to be injected; while with these parts involved and nasal, pharyngeal, or laryngeal involvement a very large dose was indicated. The location of the exudate was important. If the disease was of nasal or nasopharyngeal type it was more highly toxic than if in other locations. Mechanical removal of toxin from the tonsils by washing a portion of it into the esophagus, diverting a portion to the stomach, might secure a lessening of toxicity by action of digestive fluids. With exudate in the larynx and trachea we could judge of the amount present only by the stenosis and prostration. Here, too, a large dose was indicated. The initial doses were as follows: A single tonsil covered with pseudomembrane, 2,500 units; both tonsils covered, 5,000 units; both tonsils and pillars or uvula, 7,500 units; nares and larynx, 7,500 or 10,000 units; nares and larynx, or tonsil and larynx, 7,500 to 10,000 units. We might repeat the dose in twelve hours in greatly prostrated cases or anginose cases. On each successive morning until the pseudomembrane had disappeared, in good part, an injection as large as the initial dose, or as much smaller as the remaining exudate would seem to require, was given. He favored twelve- and twenty-four-hour intervals with large doses, as it lessened the occasion of giving pain and the danger of infection. The dose might not yet be large enough, but the mortality among patients reaching them the first day had been nil, while among those coming the second day the mortality had remained below 5 per cent., this including many laryngeal cases. The death rate among patients admitted the third day had been about 12 per cent., and those coming later showed higher death rates.

Dr. L. Emmett Holt believed that the amount of membrane in a given case was a better guide than the age in determining the initial dose. Antitoxin was not given early enough, nor did one use, as a rule, large enough amounts. A single large dose at the start, he said, would accomplish as much as two or three times that amount when given later. It was impossible to tell at the beginning of the disease whether the case would be a bad one or not, or whether much toxin would be produced; therefore it would be decidedly better not to give too little. The secret of success in the treatment of diphtheria lay in giving a single large dose as early in the disease as possible. The Boston statistics, in his opinion, did not show any better results than elsewhere where such enormous doses of antitoxin were not given. He hoped that the Health Department would provide a larger number of units in their packages.

Dr. William P. Northrup emphasized the importance of giving the antitoxin as early as possible with an initial dose of 5,000, preferable 6,000 units. The prophylactic dose was from 500 to 1,000 units. To show that large doses would not have a very deleterious effect, he referred to one case of cerebrospinal meningitis that was given 125,000 antitoxin units and it did not kill.

Dr. Henry W. Berg said that the problem in all cases was to introduce sufficient antitoxin to antagonize not only the free toxins in the blood, but the toxins which had become united with the animal cells, particularly those of the heart muscle. The combined and semi-combined toxins were important elements to be considered in giving the antitoxin. As guides to the amount of antitoxin to be given, he made use of the pulse and temperature, and not the extent of the membrane, which was Dr. Royer's guide. Every case of diphtheria had a rapid pulse, due to a myocarditis, and if he found the pulse would not go down within twenty-four hours after the injection of the antitoxin the dose was repeated. When temperature was present, after a single injection of antitoxin it would drop, as a rule, by crisis; there would be either a crisis or a pseudocrisis. If this did not occur, the dose of antitoxin was repeated. Behring of Germany gave less antitoxin than was given in this country. Dr. Berg had never had occasion to inject more than 6,000 or 7,000 units, even in the very severe cases. He did not believe in extravagant doses.

Dr. Henry Koplik said that the uncomplicated cases of diphtheria should be separated from those that were complicated or the bottom of the question would never be reached. In the kind of cases described by Dr. Royer, the bull-neck cases, in which the gland involvement showed a mixed infection, and, in some cases, a pneumococcic infection, he had seen them liberally dosed with antitoxin, the mucous membrane clearing away, and yet the patient died apparently from the mixed infection, probably a streptococcic infection. The uncomplicated cases of diphtheria were easily managed.

Dr. H. Norton Mason said that at the New York Infant Asylum during the past four months immunizing doses of antitoxin had been administered to four hundred patients, 1,000 units for adults and 500 for children. They all failed to contract diphtheria when exposed to it. No untoward effects from the antitoxin resulted save a few cases of urticaria and two or three cases of a slight rash, which lasted about twenty-four hours.

Dr. Louis C. Ager of Brooklyn said that the antitoxin of diphtheria was not used so universally in Brooklyn, because of the prejudice engendered against it caused by an unfortunate result occurring in the practice of one of the most prominent physicians there. Three deaths from heart failure following its use in small doses were reported; he believed that if larger doses had been given these deaths would not have occurred.

Dr. L. E. La Fetra emphasized the importance of seeing the cases of diphtheria often and noting if improvement took place during the course of treatment; if improvement had not taken place after the initial dose of antitoxin, then that initial dose had not been large enough. The toxins were manufactured in the body and united chemically with the cells, especially of the nervous system and myocardium, and it was very important to neutralize them as early as possible. For an initial dose he advocated giving from 3,000 to 5,000 units; if at the end of twelve or twenty-four hours the membrane did not begin to curl up, the dose of antitoxin proper for that time should be given.

Dr. L. Emmett Holt considered 3,000 units to be a fair early dose of antitoxin in most cases of diphtheria.

Dr. Charles G. Kerley believed that it was far better to use an initial dose of antitoxin of 6,000 units; even if that was more than the child required it would do no harm. Too much stress was laid upon the amount of pseudomembrane present; the important point to consider was, had the child diphtheria?

Dr. William H. Park, in answer to Dr. Royer's question, said that when antitoxin was injected under the skin

it was absorbed about one-half as rapidly as when injected into the muscles; but when injected into the veins, it was at the end of an hour six times as abundant as when injected under the skin. He thought that all were in accord that the first dose should be large, and also that if one gave a large dose of antitoxin, and within twelve hours no improvement was noted, a second or even a third dose should be administered. He doubted whether one could give in every case such a large initial dose that a second would never be required. With regard to immunizing doses, Dr. Park did not believe that more than 1,000 units were necessary. The limit of its usefulness as an immunizing agent might be reached in ten days, and then another dose might be required.

Dr. Berg asked Dr. Park if he understood him as recommending the injection of antitoxin directly into the veins.

Dr. Park replied that in those cases in which a fatal termination was feared he would advise an intravenous injection, but not in the ordinary cases. In the reports of cases so treated no mention had been made of any bad effects.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, Held in Toronto, August 21, 22, 23, 24, and 25, 1906.

(Special Report to the Medical Record.)

(*Concluded from page* 434.)

Intestinal Obstruction in Association With the Vermiform Appendix.—Mr. George Gray Turner of Newcastle-on-Tyne read this paper, and, for the sake of convenience, considered his subject under the following headings: (1) Obstructions due to appendicitis, or its results; (*a*) during acute attack, (*b*) during convalescence or after operation for acute appendicitis, (*c*) in recurrent cases, or after interval operations, (*d*) at some period remote from the acute attacks. (2) Obstructions produced by the appendix, but without appendicitis. To show the frequency of intestinal obstruction he said he had collected forty-seven cases in six years, and he showed that its frequency was one obstruction to fifty-three cases of appendicitis. There were in his series of cases but three cases of obstruction due to appendicitis occurring during the acute attack, and he related the histories of these patients. There were twenty-three cases of obstruction occurring during convalescence, or after the operation for appendicitis. The average time of the onset after operation was twelve days, and the obstruction was most commonly due to shrinkage of an abscess. Obstruction caused by bands was not so common. There were but two cases among the recurrent, or after interval cases, and the pathology in these did not differ from that noted in the remote cases. This was made a distinct group, in order to emphasize the danger. There were nineteen instances of obstruction occurring at some period remote from the acute attacks; the average length of time of the onset was three years and six months. The longest interval was seventeen years, and the shortest was four months. Acute obstructions were most common. The most difficult cases were those which had recovered from general septic peritonitis. He insisted upon early operation in all acute cases.

Dr. N. A. Powell of Toronto dealt with some personal experiences and with some points in treatment. He said that obstruction at the time of an attack, or following an attack, must be comparatively rare. His personal experience was limited to but two cases out of 350 submitted to operation. In one case, that of a young man, he had to operate at night in a badly lighted room; in this case the peritoneal edges were not approximated properly and angulation and strangulation followed. The second case was a wonderful one. Eight hours after the beginning of his third attack of appendicitis, Dr. Powell was consulted. Operation was performed twenty-six hours after the initial symptoms. On the fifth day the patient began to have pain, with distention of the upper half of the abdomen, and vomiting frequently. Upon opening the abdomen a distended coil of black intestines presented. The appendix wound was in perfect condition. On the left side there were old and dense adhesions, forming an annular band. Conditions were very bad, and he was compelled to evacuate the bowel by means of a tube, which he presented. This was very difficult because of the great danger of soiling the peritoneum. He then excised over two feet of intestines, and brought the divided ends together, using Murphy's button, which was passed five days after operation. This patient, in spite of his frightful condition at time of operation, made a good recovery. He emphasized the great importance of preventing the chilling and drying of the exposed bowel by running hot saline solution over it.

Dr. J. B. Murphy of Chicago appreciated the insistence upon early operation. There was no time for procrastination when there were evidences of intestinal obstruction.

Congenital Dislocation of the Hip.—Dr. Jenkins of King's College, London, explained this condition on developmental grounds, as arising from the prechondral stage. He made blackboard drawings to make his explanation clear.

The Treatment of Acute Septic Peritonitis.—Mr. Charles John Bond of Leicester read this paper. He first considered the physiology of the peritoneum with special reference to the great importace of the diaphragmatic portion, and the peculiar sensitiveness of that covering the small intestines. Under pathology he told of the way in which the peritoneum reacted to infection and the protection of the endothelial layer by the formation of a fibrinous deposit. Chemical peritonitis was not seen clinically. The peritonitis accompanying the intraperitoneal extravasation of blood was generally due to the *Staphylococcus albus*. Gonococcal peritonitis was not of a very high degree of virulence. In ruptured gastric and duodenal ulcer, the infection was not highly virulent, but the necessity for immediate operation was most urgent. The infection could be frequently arrested by irrigation, with or without drainage. Septic peritonitis due to infection from the alimentary canal below the duodenum was then considered. The frequent and early migration into the peritoneum of the *Staphylococcus albus* in many cases of septic peritonitis acted beneficially by stimulating phagocytosis, and had an important bearing on the treatment and the question of irrigation. Streptococcal peritonitis was highly virulent and generally fatal, in spite of treatment. He referred to the frequency of pneumococcal peritonitis in female children, and the primary and secondary varieties, and the importance of the observation of the naked-eye characters of the exudate and the appearance of the inflamed membrane, especially in this variety of peritonitis. After speaking of the treatment by drugs, morphine, purgatives, serum, and expressing a want for a polyvalent antibacillus coli serum, he took up the surgical treatment. He emphasized the importance of respecting the diaphragmatic area, and the risk of removing phagocytes by indiscriminate irrigation. The prime object was to attack the primary focus of invasion and arrest further infection. The next point was to treat the infected general peritoneal cavity. In cases of moderate severity the safest course was the efficient treatment of the primary focus by dry sponging or local irrigation and drainage, combined with the least amount of interference with the general cavity, unless collections of fluid exudate in the pelvis or loins required drainage. Highly virulent streptococcal infections might require free irrigation, with even partial evisceration. Cases of slight virulence were best treated by free irrigation, either with or without subsequent drainage. In giving his general conclusions, he said that irrigation was beneficial where the peritoneum contained foreign material capable of removal by

flushing, such as blood, gastric or duodenal contents, fecal matter, pus, infected urine, or bile. It was harmful in cases of fibrinous, sticky exudate, and when used to wash away a turbid exudate containing active phagocytes, or when instrumental in spreading infection. Free drainage or tamponage was essential in the treatment of local abscesses, necrosis of bowel, or where the treatment of the primary focus of invasion must be necessarily incomplete. It was generally harmful when used in the upper peritoneal area, unless this was primarily infected. It was generally of little use in the small intestine area. It was most frequently useful in the lateral areas and in the pelvic basin. The efficiency of peritoneal drainage depended on the integrity of the endothelium in the area drained.

Dr. William Howitt of Guelph said he wished to emphasize the deleterious effects of morphine; its administration should be condemned in every case in which there was the slightest suspicion of the existence of peritonitis. In postoperative treatment only evil effects followed the use of opiates. Purgatives should be condemned as well. In the absence of pronounced bowel distention the important points to be borne in mind in the surgical treatment were early operation, gentle but complete removal or adjustment of the cause of the septic peritonitis, and irrigation when not contraindicated and provided there was a free escape for the fluid. Judicious drainage and posture were of the utmost importance. Hypodermics of strychnine and saline solution by rectum and subcutaneously played an important rôle in the treatment. He preferred the posterior method of draining, using a perforated flexible rubber tube. In females it was introduced through the vaginal wall; in males, through a stab wound in the lumbar region. Fowler's posture should be adopted before operation. Out of thirty-four desperate cases he had been able to save all but five.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Transactions of the American Ophthalmological Society. Vol. X., Part III. 8vo, 661 pages, illustrated, paper. Published by the Society, at Hartford.

Medizinal-Berichte ueber die Deutschen Schutzgebiete, für das Jahr, 1903-04. 8vo, 305 pages, illustrated, muslin. Ernst Siegfried Mittler und Sohn, Berlin. Price, 7.50 M.

Infection, Immunity, and Serum Therapy. By H. T. Ricketts, M.D. 12mo, 600 pages, muslin. The American Medical Association Press, Chicago, Ill.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. I. March, 1906. 8vo, 304 pages, paper. Lea Brothers & Co., Philadelphia. Price, $6.00 per annum.

A Nurse's Hand-Book of Medicine. By J. Norman Henry, M.D. 8vo, 268 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

Second Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. 8vo, 452 pages, illustrated, paper. The Henry Phipps Institute, Philadelphia.

The Eye and Nervous System. Edited by William C. Posey, A.B., M.D., and William G. Spiller, M.D. 8vo, 983 pages, illustrated, muslin. The J. B. Lippincott Co., Philadelphia.

Studies from the Rockefeller Institute for Medical Research. Reprints, Vol. V., 1906. 8vo, 477 pages, illustrated, paper.

The Combined Treatment in Diseases of the Eye. By G. Herbert Burnham, M.D., F.R.C.S., M.R.C.S. 12mo, 92 pages, muslin. H. K Lewis, London, W. C. Price, 3 shillings.

Nomenclature Anatomique en Quatre Langues. By Dr. Paul Rodet. 12mo, 76 pages, paper. Masson et Cie., Editeurs, Paris. Price, 1 franc 50.

Ueber die Immunitätsverhältnisse der Epilepsie. Von Prof. Dr. Gustav Aschaffenburg in Koln a. Rh. 8vo, 55 pages, paper. Carl Marhold in Halle a. S. Price, Mark 1.60.

The Practical Medicine Series. Vol. III.—The Eye, Ear, Nose, and Throat. Edited by Casey A. Wood, M.D., Albert H. Andrews, M.D., Gustavus P. Head, M.D. Series 1906. 12mo, 368 pages, illustrated, muslin. The Year Book Publishers, Chicago. Price, $1.50.

Trachomtherapie in der Verseuchtesten Gegend Ungarns. Von Dr. Marczel Falta, Redigiert von Sanitatsrat Dr. Max Ohlemann. 8vo, 104 pages, illustrated, paper. S. Karger, Berlin. Price, Marks 2.

Operative Otology, Surgical Pathology, and Treatment of Diseases of the Ear. By Clarence J. Blake, M.D., and Henry Ottridge Reik, M.D. 8vo, 359 pages, illustrated, muslin. D. Appleton & Co., New York.

Fifth Annual Report of the Metropolitan Water and Sewerage Board. January 1, 1906. Public Document No. 57. 8vo, 237 pages, illustrated, muslin. Wright & Potter Printing Co., State Printers, Boston.

The Urethrotomies and Kidney Capsulotomy in Diseases and Injuries of the Urinary Organs. By Reginald Harrison, F.R.C.S. 8vo, 96 pages, illustrated, muslin. John Bale, Sons & Danielsson, Ltd., London, W. Price, 2s. 6d. net.

The Teeth and Their Care. By Thaddeus P. Hyatt, D.D.S. 16mo, 43 pages, illustrated, muslin. The King Press, Brooklyn, N. Y.

Arbeiten aus dem Pathologischen Institut zu Berlin. Herausgegeben von Johannes Orth, Direktor des Instituts. 8vo, 662 pages, illustrated, paper. August Hirschwald, Berlin. Price, Marks 18.

Letters from a Surgeon of the Civil War. Compiled by Martha Derby Perry. 8vo, 225 pages, illustrated, muslin. Little, Brown & Company, Boston, Mass. Price, $1.75 net.

Moderne Phthisiogenetische und Phthisiotherapeutische Probleme in Historischer Beleuchtung. Von Prof. E. v. Behring. 4to, 156 pages, paper. August Hirschwald, Berlin.

Les Empoisonneuses; Etude Psychologique et Medico-Legale. Par le Dr. Rene Charpentier. 8vo, 232 pages, illustrated, paper. G. Steinheil, Paris. Price, 6 francs.

Problems in Animal Metabolism. By J. B. Leathes. 8vo, 205 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price 2.00

A Complete Handbook for the Hospital Corps of the U. S. Army and Navy. By Charles Field Mason, Major and Surgeon U. S. Army. 8vo, 545 pages, illustrated, muslin. William Wood & Company, New York. Price $4.00. net.

Natality and Fecundity. By C. J. Lewis, D.Sc., and J. N. Lewis. 8vo, 170 pages, muslin. William Wood & Company, New York. Price $2.00 net.

La Cure de Dechloruration. By Dr. Fernand Widal and Dr. Adolphe Javal. 12mo, 96 pages, muslin. J. B. Bailliere et Fils, Paris. Price 1 fr. 50.

Eczema. By Samuel Horton Brown, M.D. 12mo, 105 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price $1.00.

A Compend of Pharmacy. (Quiz-Compends.) By F. E. Stewart, M.D., Ph.G. Sixth Edition, Revised and Enlarged. 12mo, 187 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price $1.00.

A Treatise on Surgery. By George R. Fowler, M.D. Vol. 2. 4to, 714 pages, illustrated, muslin. W. B. Saunders Co., Philadelphia.

Yellow Fever Prophylaxis in New Orleans, 1905 (Liverpool School of Tropical Medicine-Memoir XIX). By Rubert Boyce, M.B., F.R.S. 4to, 62 pages, illustrated, paper. Williams & Norgate, London. Price 5s. net.

Heart Disease and Aneurysm of the Aorta, with Special Reference to Prognosis and Treatment. By Sir William H. Broadbent, Bart., K.C.V.O., M.D., etc., and John F. H. Broadbent, M.A., M.D., F.R.C.P. 8vo, 479 pages, illustrated, muslin. William Wood & Company, New York. Price, cloth, $4.00; sheep, $5.00 net.

Gastric Surgery. By Herbert J. Paterson, M.A., M.B., B.C., F.R.C.S. 8vo, 181 pages, illustrated, muslin. William Wood & Company, New York. Price $2.00 net.

New Serum-Therapy. By D. Montgomerie Paton, L.R.C.S., L.R.C.P. 12mo, 311 pages, muslin. William Wood & Company, New York. Price $2.25 net.

The Nature and Treatment of Cancer. By John A. Shaw-Mackenzie, M.D. Third Edition, Revised and Enlarged. 12mo, 99 pages, muslin. William Wood & Company, New York. Price $1.25 net.

Les Embolies Bronchiques Tuberculeuses; Etudes Cliniques. By Dr. Ch. Sabourin. 12mo, 264 pages, illustrated, flexible muslin. Felix Alcan, Editeur, Paris. Price 4 fr.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Oct	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	October	1
Arkansas*	J. P. Runyan, Little Rock	Little Rock	October	9
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	October	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Nov.	13
Delaware	P. W. Tomlinson, Wilmington	Dover	Dec.	11
Dis. of Col'bia	W. C. Woodward, Washington	Washington	October	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	October	17
Georgia	E. R. Anthony, Griffin	Atlanta	October	9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	October	2
Illinois	J. A. Egan, Springfield	Chicago	October	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October	23
Iowa	J. F. Kennedy, Des Moines	Des Moines	December	11
Kansas	T. E. Raines, Concordia	Topeka	October	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	23
Louisiana	F. A. La Rue, 624 Gravier St., New Orleans	New Orleans	October	19
Maine	Wm. J. Maybury, Saco	Portland	Nov.	13
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	November	13
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	October	9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	October	2
Mississippi	J. F. Hunter, Jackson	Jackson	October	9
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov.	20
Montana*	Wm. C. Riddell, Helena	Helena	October	2
Nebraska	Geo. H. Brash, Beatrice	Lincoln	Nov.	7
Nevada	S. L. Lee, Carson City	Carson City	Nov.	5
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	October	16
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	Sept.	25
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	1907
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	October	2
Ohio	Geo. H. Matson, Columbus	Columbus	Dec.	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Sept.	25
Oregon*	B. E. Miller, Portland	Portland	January	1
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg	Dec.	—
Rhode Island	G. T. Swarts, Providence	Providence	October	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	1907
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May,	1907
Texas	T. T. Jackson, San Antonio	Houston	October	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	October	1
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Clarksburg	Nov.	13
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne	December	5

*No reciprocity recognized by these States.
†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Reciprocity.—Dr. E. B. Harvey, Secretary of the Massachusetts State Board of Examiners, objects to so-called interstate reciprocity. In the *Journal of the American Medical Association* he emphasizes the various methods at present prevailing in different States; he also contends that the practice of admitting and recognizing the credentials of physicians from other States, and allowing them to practice without further examination, destroys the protection against incapacity. He further maintains that reciprocity confers exclusive and unfair privileges on outsiders, and that it tends to lower the standard of medical education. By quotations from statistics he shows the laxity of some States as compared with others; and he claims that the migratory incompetent is the man who benefits by reciprocity.

Illinois now reciprocates—in the case of licenses issued after examination—with the following States: Indiana (after January 1, 1905, only), Iowa, Kansas, Maine, Maryland, Michigan, Minnesota, Nebraska, New Jersey, North Dakota (after July 1, 1905, only), Ohio, South Carolina, Vermont, Wisconsin, and Wyoming. The Illinois State Board of Health does not reciprocate in the case of licenses issued on the presentation of diplomas, without examination. The Illinois State Board of Health subjects all applicants for a State certificate to practice medicine in Illinois, to an examination, in accordance with the provisions of the medical laws of the State of Illinois, and allows, in the examination, a credit of five per cent. on the required average of seventy-five per cent. for each five years of reputable practice since graduation. At the recent examination (in July) sixty-four physicians were successful out of a total of seventy-six.

Texas.—At the June examination there were one hundred and forty-four applicants; of this number one hundred and two were successful.

District of Columbia.—At the July examination twenty-four candidates were successful and twelve failed to pass.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending September 15, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	351	150
Diphtheria	184	19
Measles	53	2
Scarlet Fever	74	4
Smallpox	2	—
Varicella	6	—
Typhoid Fever	134	18
Whooping Cough	38	7
Cerebrospinal Meningitis	14	5
Malarial Fever	.....	.....
Totals	856	205

Preliminary Report on Bacillus Muco-aërogenes Capsulatus.—Wm. Litterer describes an organism belonging to the group of the *Bacillus mucosus capsulatus*. He states that there are certain peculiar cultural characteristics of this undescribed member that render it so very different from all other species that a separate and distinct class is apparent. Last year this bacillus was isolated from a virulent case of gangrenous appendicitis, and about six months later the identical germ was again demonstrated in a case of gangrene of the intestines. Inoculations of this organism are highly virulent for the ordinary laboratory animals. When the organism was weakened by artificial cultivation and then inoculated subcutaneously there invariably developed gangrene at the site of inoculation. The formation of gangrene is greatly increased by the presence of other bacteria. This organism will ferment all sugars except saccharose, and is able to form a small quantity of gas from proteids, as shown by its being produced in a dextrose-free gelatin stab, as well as in the fermentation tubes of sugar-free bouillon. When planted on agar slants, the organism has a marked tendency to grow anaërobically, as evidenced by its burrowing into the solid culture medium which tends to break up. Gas bubbles develop in the substance of the solid media, even though the bacteria are on the surface. No special staining method is necessary to demonstrate the capsule.—*Nashville Journal of Medicine and Surgery*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 15, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Louisiana, New Orleans	Aug. 25–Sept. 1	3	..
North Dakota, State	July 1–31	8	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	July 21–28	1	..

SMALLPOX—FOREIGN.

Argentina, Buenos Ayres	June 1–30	..	177
Brazil, Bahia	July 28–Aug. 11	6	2
Pernambuco	July 15–31	..	4
Gibraltar	Aug. 19–26	1	.
Italy, General	Aug. 8–16	3	
Panama, Colon	Aug. 19	3	..
Turkey, Constantinople	Aug. 12–19	..	1

YELLOW FEVER.

Cuba, Habana	Aug. 10	1	
Guatemala, Gualan		2	1

CHOLERA—INSULAR.

Philippine Islands, Manila	July 14–28	126	115
Provinces	July 14–28	908	594

PLAGUE.

Australia, Carma	July 14–21	1	
Sydney	July 7–14	1	1
Brazil, Bahia	July 28–Aug. 4	1	1
Rio de Janeiro	July 8–15	2	
Egypt, Alexandria	Aug. 10–14	3	2
Port Said	Aug. 11	2	
Suez	Aug. 11–16	3	2
Garbieh Province	Aug. 13	1	1
India, General	July 14–21	953	706
Japan, Formosa	Aug. 1–10	3	0

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Original Articles.

PERCUSSION OF THE SKULL AS A MEANS OF PLACING THE INDICATION FOR THE PERFORMANCE OF LUMBAR PUNCTURE;

WITH SPECIAL REFERENCE TO ITS APPLICATION IN CEREBROSPINAL MENINGITIS OF THE EPIDEMIC TYPE.

By HENRY KOPLIK, M.D.,

NEW YORK.

LUMBAR puncture as first practised by Quincke may be applied both as a diagnostic and therapeutic agent. As a diagnostic means of precision, it has become of great utility, not only in making a diagnosis of the presence or absence of meningitis, but of the various types of meningitis, especially of the seropurulent or tuberculous variety. As a method of diagnosis we apply lumbar puncture in those cases, in which clinically there are the symptoms of meningitis, but in which the symptoms are to a certain extent indefinite, and in which it is necessary to establish firmly the diagnosis of meningitis in a broad sense, or, being certain of the presence of meningitis, to fix its specific nature, whether tuberculous, meningococcic, or otherwise.

The nature of the fluid withdrawn may be negative to such an extent as to still leave doubt as to the exact diagnosis; such may be the case in brain tumor, or in serous meningitis, complicating otitic disease, or in cases of old cysts of the brain with reaccumulation of contents. In such cases there may have been a preceding abscess of the brain, which apparently remained after the causal mastoiditis had been healed. After a few years a cyst formation in the cerebral region may burst into the subarachnoid space, and give rise to symptoms simulating meningitis. The subarachnoid fluid, in such cases, may even become contaminated by streptococci, and mislead into a diagnosis of streptococcic meningitis. In spite of these drawbacks, however, lumbar puncture is our most valuable means of precision in cases which show clinical symptoms on the border line between various forms of serous, purulent, and tuberculous meningitis.

It is not the purpose of this paper to discuss this phase of lumbar puncture, but rather to fix definitely the therapeutic application of the procedure. As a therapeutic measure, lumbar puncture is applied in the various forms of hydrocephalus, acute and chronic, whether congenital or due to a preceding meningitis. It is applied in the various forms of meningitis, either to simply remove fluid as a mode of drainage, or to remove excessive fluid, which is causing pressure, and thus to relieve symptoms, if not to save life. Of questionable use as a therapeutic measure is the application of lumbar puncture in cases of tumor of the brain to relieve headache, questionable, because the removal of fluid in such cases is not devoid of danger to the life of the patient, even when the greatest precautions are employed, such as the use of a manometer for the registration of intracranial pressure. Even when these precautions are employed, the withdrawal of fluid may be followed by the sudden death of the patient. A questionable use of lumbar puncture as a therapeutic measure, is in cases of encephalitis, or so-called coma dyspepticum, or in pneumonia with cerebral symptoms; in the last disease mentioned lumbar puncture has been proposed as a means of relieving cerebral symptoms, such as delirium and headache, which we will show in pneumonia are not always due to an accompanying serous meningitis, but rather to toxemia, and thus no pressure can be relieved in these cases by lumbar puncture.

As a therapeutic measure, lumbar puncture was first introduced by Leonard Corning as a means of injecting drugs into the spinal space, and thus causing anesthesia. We will not discuss this therapeutic use of lumbar puncture.

As a therapeutic measure, we will consider more specifically the application of lumbar puncture in cerebrospinal meningitis, especially of the acute epidemic type. There is no monograph extant which will give the student any idea as to when the proper moment arises in this disease, either to apply lumbar puncture for the first time, or when to repeat it, after having once carried it out. All monographs speak of the relief of symptoms, such as excitement, sopor, delirium, headache, hyperesthesia, and convulsions in such a manner as to confuse a physician hopelessly, for it may be said here that there are certain cases of meningitis, in which these symptoms are present, but in which lumbar puncture need not be performed. Again, we are repeatedly told that lumbar puncture is performed to relieve pressure on the structures at the base of the brain and subarachnoid space, but there is no work at our disposal, which will tell the physician how to diagnose intracranial pressure, as actually present, before proceeding to puncture. There may be sopor, delirium, excitement, hyperesthesia, headache present in a case of meningitis as a result of toxemia without the presence of intracranial pressure.

Given a case of meningitis, the first result of intracranial pressure is an acute, subacute, or chronic distension of the ventricles of the brain with fluid, and it is the early detection of this fluid which gives us the absolute indication to relieve distension by lumbar puncture. The mode of detecting acute hydrocephalus, whether caused by acute distension of the ventricles on the first day of a cerebrospinal meningitis, or during the slow, insidious onset of a tuberculous meningitis, is by percussion of the skull. McEwen, in his work on the pyogenic diseases of the brain and spinal cord, describes very accurately the elicitation of a differential cranial percussion note, in which he shows that in various conditions, such as cerebral tumors, the lateral ventricles are distended with serous fluid. In such cases the per-

cussion note elicited at a given spot on the cranium, such as the pterion, varies according to the position of the head. While the person sits with the head upright, the most resonant note is brought out by percussion of the skull by means of the finger as in chest percussion towards the basal level of the frontal bone, and the squamous portion of the parietal. The percussion on the lower bone, as the head is inclined to one side, gives a tympanitic note. As McEwen says, the exact musical quality of the note is difficult to describe, but when heard gives an idea of hollowness. McEwen found this note in over forty children and young adolescents, who had distended ventricles due to various causes.

I have pointed out elsewhere that in children below two years of age, if there has been rachitis, even though the sutures and fontanelles are closed, we may obtain a tympanitic note, due to some excess of fluid in the ventricle of the brain, the children presenting no other abnormality.

In no work do I find any data as to the application of percussion of the skull in cases of cerebrospinal meningitis. I consider percussion of the skull the only definite means we have to-day of determining whether there is an increase of fluid in the ventricles or the subarachnoid space causing pressure effects, and therefore demanding immediate relief. I have recently shown in a paper read before the Association of American Physicians that there are cases of cerebrospinal meningitis with marked cerebral symptoms, in which puncture is scarcely indicated, because, though there are delirium, headache, hyperesthesia, and sopor, we cannot demonstrate that there is any increase of fluid in the subarachnoid space and ventricles of the brain; therefore, lumbar puncture would not relieve pressure or symptoms.

The early idea of utilizing lumbar puncture as a method of *drainage*, by which a certain amount of purulent or suppurative fluid is removed from the inflamed district is, I think, a rather unscientific mode of treatment, of at least one form of meningitis, the meningococus type. For this disease is self limited, and the physician should be ready to tide over critical periods of the disease, such as we see when intracranial pressure becomes extreme. We can best demonstrate our method of carrying out lumbar puncture by illustrating with an acute case.

Child, five years old, was taken ill with a slight sore throat and a high febrile movement with vomiting. Fever continued for twenty-four hours; there was some headache, but not to a great degree. The child was siting up in bed and playing with its toys. Suddenly, without warning, it became pale, the pulse rapid and feeble, the temperature rose to 105°, the surface of the body was pale. The child lay back in a collapsed condition, with shallow breathing, becoming quickly unconscious, and in this condition was seen by me with the attending physician. I found a child of delicate nutrition, unconscious, with sighing, labored respiration, rapid, feeble pulse, cold surface, and with very minute petechiæ on the inner side of its arms, scarcely noticeable, pupils dilated. Percussion of the skull on either side gave a hollow tympanitic note, evidence of an acute distension of the ventricles by fluid. The pulse in this case was 150, the respiration sighing and irregular. The diagnosis of distension of the ventricles by fluid thirty hours after the onset of cerebrospinal meningitis was made. Lumbar puncture was urged, and proved in the first place that we had really a case of cerebrospinal fever of the meningococcus type, and secondly that the fluid in the subarachnoid space was under great pressure, fully 50 c.c. being withdrawn before it seemed that the pressure was normal. After puncture the conditions of collapse, headache, depression, and cerebral prostration improved; after days the mental condition cleared up, and the patient made an uncomplicated and speedy recovery.

In another case to which I was called recently a child of six years had been ill for thirty-six hours. He began with fever and headache, and on the morning of the subsequent day he vomited and seemed a little more stupid than he had been. He developed a few petechiæ on his body. The sopor deepened into stupor, and toward evening of this day the patient was unconscious, had all the classical signs of a cerebrospinal meningitis, his body was covered with petechiæ, and he had also an exquisite tympanitic note by percussion over the ventricles of the brain, and on this indication lumbar puncture was immediately advised. I understand the child did well.

On the other hand, percussion of the skull by the method which I have described, is a useful mode of differentiating those cases of so-called meningism or the symptom complex of cerebral symptoms from the severer types of meningitis. I have seen cases of pneumonia with cerebral symptoms, in which it was proposed to puncture in order to relieve symptoms, or to diagnose the presence or absence of meningitis. The following case is illustrative. A short synopsis alone is necessary.

Female, four years of age. Past history: Had measles—no sore throats. Had pneumonia at one year. Since then has had slight dyspnea, cough and cardiac palpitation, and precordial pain on slight exertion. Bowels regular, urination normal. Present illness: Began suddenly three days ago with severe headache, anorexia, vomiting, and high fever; no chill or chilly sensations, convulsions, or cough. Two days ago symptoms continued about the same. Child always bright mentally. Delirium. One day ago neck was stiff for a few hours. Headache somewhat milder, vomiting stopped, but anorexia continued. No involuntaries. Chief complaints: Headache, vomiting, fever, anorexia, delirium. On admission to the hospital the child was of good physique, was delirious and irritable. There was some rigidity of the neck and a distinct Kernig. The child was hyperesthetic, and had, in short, all the symptoms of a beginning meningitis. The chest examination on the left side behind showed dullness and rude respiratory murmur from the angle of the scapula down, which two days subsequently developed into a distinct pneumonic consolidation, thus clearing the case. In this child percussion of the skull from the outset failed to give any signs of fluid causing pressure, or, as I call it, McEwen sign, and therefore this case was not punctured, though I feel that it so resembled a meningitis that the enthusiast might have been justly led to puncture on the ground of relieving the delirium and restlessness. In two days, however, our supposition that meningitis was only simulated was supported by the development of the pneumonia and the clearing of the mental state. I have histories of other cases of pneumonia with cerebral symptoms in which the careful percussion of the skull failed to reveal any increase of fluid in the ventricles or the tympanitic sound described with hydrocephalus. As a corrollary this would seem to disprove the supposition that in cases of meningism there is always a serous meningitis. If this were so, we would obtain a tympanitic note on percussion of the skull in these cases. In the absence of signs of fluid in the ventricles, we conclude that the meningism in such cases is due more to toxic than pressure effects.

These cases are simply brought forward to show on what grounds we can definitely conclude that not only is there an increase of pressure, but that, if we do puncture, we may be rewarded by relieving that pressure. I may say that this method, to my mind, presents the only indication for the performance of lumbar puncture.

Another case, which shows distinctly that at the beginning of the disease puncture is not necessary, but may become so in the course of the affection, is the following: A boy of nine years was taken ill with the typical symptoms of cerebrospinal fever of the moderately severe type. He had been perfectly well previously; had partaken of some indigestible food, complained of headache, and vomited once. He then developed rigidity and other symptoms of cerebrospinal fever, and ran a temperature at the outset which ranged from 102° to the subnormal, or from 105° to the subnormal daily. This boy, being highly intelligent, was conscious during the whole course of the disease up to the period to which I am leading. I percussed his skull every time I saw him in consultation almost daily, but failed to find any evidence of distension of the ventricles with fluid. In other words, no acute hydrocephalus. I advised against puncture. On the twentieth day of his disease, the headache which had been quite severe and accompanied by abdominal pains became more insufferable. He vomited and had chilly sensations; he passed gradually into a state of sopor within a few hours. At this time percussion of the skull revealed a tympanitic note over the left ventricle of the brain. Puncture was advised, and was rewarded with a slightly turbid fluid under considerable pressure, falling to the normal when 40 c.m. had been removed. Fortunately for this little patient, after the relief of the ventricles by this one puncture he became brighter, although still complaining of headache and pain in his ears, became more rational, his temperature dropped in a day to the normal, and no further puncture was necessary.

It may be asked at this juncture how are we to know whether repeated puncture is necessary as indicated in a given case? If, after having punctured a patient in the manner which I have indicated, there is an improvement in the headache and the patient becomes rational, although the temperature continues to run a high or low course, we may wait a few days, and see whether the previous symptoms return, or whether the patient continues to improve. Following this plan, I have found that after a puncture the objective symptoms may improve as well as the subjective ones, but the tympanitic note continues over the ventricle. If the patient is to improve, this tympanitic note gradually disappears, the symptoms improve, and on convalescence we no longer get signs of fluid in the ventricles. If the patient, however, is so unfortunate as to continue after a slight remission of symptoms with the symptoms he had before puncture, we will find that not only do the percussion signs of hydrocephalus continue, but there is a deepening of the objective symptoms, such as sopor and hyperesthesia and rigidity, and this gives us our cue for our second puncture within twenty-four or forty-eight hours or more after the original puncture.

In this way we can do no harm if we are certain there is an excess of fluid in the ventricles. But, having relieved an acute hydrocephalus, if there is no return of symptoms, there is certainly nothing to be gained by a routine continuance of puncture in the face of improvement of the patient.

More difficult to treat are those cases which, in spite of repeated puncture, continue not only with the original symptoms of hydrocephalus, due to the reaccumulation of fluid, but in some cases, as we continue to puncture, the amount of fluid obtained diminishes with a diminution of the pressure, and in these cases we may attain to a point where there is little or no pressure at all as the fluid flows from the cannula. These cases are hopeless, because in them there is matting together of the parts at the base of the brain by exudate and a blocking up of the canals of Magendie and Mierjewski, preventing the fluid from the interior of the brain flowing into the subarachnoid space, thus into the subdural space of the cord, and externally. These are the cases in which lumbar puncture fails to obtain the therapeutic end that we seek; not only the relief of the patient but the cure of the disease.

In the first case mentioned in this paper it will be seen how lumbar puncture is really in the acute distension of the ventricles a life-saving operation. In some of these cases of acute cerebrospinal meningitis, if this great pressure continues, we can easily understand how the life of the patient may be threatened.

I have tried to mark out in this paper a scientific method by which all may approach the bedside, and in a given case, whether such a case is tuberculous or acute suppurative meningitis, determine definitely, first, that there is an increase of fluid in the ventricles of the brain; second, that this increase of fluid is causing pressure, and third, that this pressure can be definitely relieved, thus aiding the patient to tide over either a crisis in this disease, as in the acute forms of meningitis, or to enable the physician to make a diagnosis as to the nature of the meningitis in a doubtful case, as in the tuberculous forms of meningitis.

THE PROBLEM OF LOCALIZATION IN RELATION TO HEAD INJURIES.*

By WILLIAM W. GRAVES, M.D.,

ST. LOUIS, MO.

The problem of localization of lesions due to head injuries does not differ essentially from that which arises in other conditions (tumor, abscess, apoplexy, etc.), excepting in those cases in which consciousness is immediately or subsequently becomes so completely and permanently obtunded that the injured cannot be made to react to stimuli of any kind. In such cases localization can be accomplished only by relying upon the history since the injury and upon the oftentimes meager objective evidence.

Head injuries frequently give rise to the involvement of the brain at a point remote from the discernible injury to the soft parts, skull, and underlying structures; hence the determination, if possible, of the point or points of injury to the brain should be the first consideration, and this can be accomplished only by carefully eliciting and weighing the focal nervous symptoms present.

The necessity for operative interference may arise when either general or focal symptoms or a combination of these are present; and when focal symptoms are present, localization becomes at once of paramount importance. Under such circumstances localization forms the best guide to the surgical procedure, since it may point unmistakably to the seat of the lesion.

In order that focal symptoms may not be over-

*Read before the St. Louis Medical Society, March 24, 1906.

looked, it should be the rule that all head injuries, with or without visible fracture, with or without focal symptoms, giving rise to general symptoms indicative of increased intracranial pressure (disturbance in consciousness, headache, nausea, vomiting, stasis papillæ, alterations in pulse, respiration, and temperature) should be subjected to a searching neurological examination before operative interference.

Were this the rule, instead of the exception, which, unfortunately, still prevails, many lives might be saved that are now lost and many cases of post-traumatic paralysis, Jacksonian "fits," and other serious nervous phenomena might be prevented.

The sharp distinction between so-called *concussion* of the brain and *compression* of the brain so frequently found in surgical text-books and existing in the minds of many physicians and surgeons, is no doubt responsible, on the one hand, for nonsurgical interference in those cases in which concussion is diagnosed, and on the other, for absence of or insufficient surgical procedure in those cases of compression in which slight focal symptoms are overlooked.

The feeble resistance of nervous tissue to injury, and the certainty of its rapid destruction when deprived of adequate blood supply, resulting in permanent abolition or perversion of function, render it doubly incumbent upon both physician and surgeon to endeavor to localize the injury at the earliest possible moment and by surgical means to render it as inoccuous as possible.

In the light of our present knowledge of structure and function of the central nervous system and of improved methods in its examination, rendering localization at times a matter of almost mathematical certainty, and in the light of modern surgical technique, head injuries offer a field in which surgeon and neurologist may work shoulder to shoulder in the saving of life and in the prevention and alleviation of suffering.

Focal nervous symptoms due to head injury may develop immediately, gradually, or remotely after the injury. Focal symptoms may be due to involvement of the structures of the convexity, the base or intermediary brain substance—they may be due to cortical or subcortical lesions. The lesion giving rise to focal symptoms may be a contusion, or a laceration; it may be simple compression, by bone fragments, or by hemorrhage, blood clot, epidural, subdural, or subcortical.

It would far exceed the time limit of this paper to attempt to consider, even briefly, the topography of the brain and its bearing upon localization or to indicate the focal symptoms which might be expected to ensue from injuries involving different regions. The problem of localization in head injuries and the necessity for its solution can best be presented by a few case recitals.

Before referring to a recent personal observation, let me give two cases reported by Harvey Cushing.*

Case I.—"A young man was tilted out of the back seat of a wagon by the unexpected starting of the vehicle and landed upon the back of his head on the hard road. After some hours of unconsciousness he was found to have a homonymous hemianopsia and aphasia. Instead of investigating the cause of these symptoms, presumably due to local hemorrhages in the right occipital lobe, and, by contrecoup, in the left inferior frontal region, his physician, owing to the fact that there was neither a scalp wound nor any external evidence of fracture, and because the patient was making a progressive though slow improvement, decided against operation. Two months later there occurred an epileptic attack with a peculiar uncontrollable motor-speech (jargon) aura. These attacks increased in frequency and severity. Finally, a year later, the lower frontal convolutions were exposed, disclosing an adherent dura and a depressed scar over Broca's convolution. The epileptic attacks have ceased, but the visual defect and aphasia remain as before."

Case II.—"In the following case a different course was followed: A college boy sustained a severe blow on the head during a football scrimmage, and soon became unconscious. There was no indication of any external lesion. Though his symptoms had in large part subsided by the following day, he remained somewhat stuporous, responding slowly and reluctantly to inquiries. The movements of the face, tongue, and arm on the right side seemed somewhat less free than those of the corresponding parts on the opposite side, and when roused and questioned the patient stated his hand was 'numb.' Bloodstained fluid was found within the lumbar meninges. Through an intermuscular incision in the left temporal region a subdural clot, about a centimeter thick and covering the lower rolandic area, was bluntly scraped and irrigated away. The patient came out of the anesthetic with a perfectly clear and active sensorium, though with no memory of the events subsequent to the injury. His convalescence was rapid and he escaped the usual slow restoration to the normal—perhaps never quite to the normal—of these cases when left alone."

These cases need no comment. The lessons taught by them are obvious. They furthermore serve to emphasize the point made above that localization forms the best guide for surgical procedure since it may point unmistakably to the seat of the lesion.

A case recently seen in consultation with Dr. Willard Bartlett will serve to illustrate the immediate and gradually progressive development of general symptoms, the value of slight and easily overlooked localizing symptoms, and furthermore, that the injury to the brain may be remote from the visible injury to the soft parts.

Case III.—At 6 P.M., March 8, 1906, a previously healthy individual, aged 27, residing in Washington, Mo., received a sharp blow on the right side of head from the crank of a windlass. He was immediately rendered unconscious and his nose bled profusely for a while after the injury. In the course of about twenty minutes he was sufficiently revived to walk with assistance to his home, a distance of about 300 yards. He was immediately put to bed and a physician summoned, who found only a slight lacerated and contused wound in the right temple. The patient was dazed and drowsy, but could be easily aroused, and complained only of intense pain about right side of head. No evidence of motor weakness about face, tongue, or extremities; no bleeding from the ears; pulse and respiration increased but regular. Patient was very restless for several hours after the injury, vomited several times, and complained of great pain in head, but by the following morning this had ceased; he had now become more drowsy and could be aroused with difficulty. The tissues about both orbits had become swollen and discolored during the night, on the right more so than left.

Pulse and respiration were now slower than normal, but still regular. During the next twenty-four hours patient became stuporous, marked lessening in pulse and respiratory rate ensued, the former thirty and the latter ten to twelve per minute and irregular.

Bulletin of the Johns Hopkins Hospital, March, 1905.

The free administration of stimulants and injections of strychnia seemed to improve pulse and respiration somewhat and the stupor became less profound. No decided improvement occurring within the next few hours, the patient was brought to St. Anthony's Hospital, arriving there about sixty-five hours after the injury. He was seen shortly thereafter by Dr. Bartlett and myself and the following findings were noted: Sensorium greatly obtunded; reacts only when spoken to loudly and repeatedly and to painful stimuli and relapses immediately into stupor. Repeated commands to move arms or legs meet with no response, but protrudes tongue slightly, and this does not deviate. Pulse, 40, full and regular; respirations 14 and somewhat irregular; temperature normal. There is no difference in local temperature between the right and left sides of body. Tissues about orbits blackened and edematous; subconjunctival hemorrhage on right, none on left; bilateral chemosis; the eyeballs are in primary position, pupils are of medium dilation, right slightly larger than the left, both reacting to light in a normal manner. Facial innervation symmetrical. Both arms are in position of flexion and resting on chest and to passive movements show slight resistance, but no rigidities. There is likewise nothing suggestive about position of either upper extremity of a central lesion. The lower extremities also show no rigidities and no abnormal position excepting in this, that there is decided "foot drop" on the left. Pricking soles of feet with pin causes retraction of leg with extension of ankle on right, whereas on left the ankle remains in a flexed position. Typical Babinski and Oppenheim reflexes are present on left, absent on right. Knee jerk and Achilles jerk on right active; on left, knee jerk is absent and Achilles jerk much less than on opposite side. Radial and triceps reflexes absent on left, present on right; cremasteric reflexes equal; abdominal reflexes present on right, absent on left; respiratory movements less pronounced on left than on right. Examination of skull reveals a slight but infected lacerated and contused wound of right temple, with no evidence of fracture at this or any other part of skull as far as can be determined by palpation. Percussion discloses an area as large as the palm of hand extending an inch anterior to the rolandic area involving pretty generally the parietotemporal region, in which the percussion note is decidedly flatter than in the corresponding area on the opposite side or in the adjacent areas on the same side.

A consideration of the history since the injury, which was to the effect that following a brief period of unconsciousness the patient was able, with assistance, to walk to his home; that he was restless for several hours, during which time vomiting occurred; that the restlessness gave way to somnolence, and this to stupor, with increasing diminution in pulse and respiratory rate, could lead to but one conclusion—that a gradual compression of the brain had developed since the injury, and that this was probably due to hemorrhage. The profound disturbance in patient's sensorium, the absence of discernible injury to the skull, and the absence of palpable focal symptoms made it necessary to depend wholly upon the objective findings for a localizing diagnosis. The difference in the size of the pupils' right greater than left; diminished respiratory excursions on left; absence of abdominal reflexes on left; the presence of Oppenheim's and Babinski's reflexes and the presence of "foot drop" on left pointed conclusively to an involvement of the motor tracts in the right hemisphere. The absence of seventh and twelfth nerve involvement practically excluded, and extensive subcortical or capsular involvement of these tracts, and at the same time indicated that the lesion involved the convexity and at a point above the lower rolandic area. Thus a consideration of the history and the focal nervous symptoms made it highly probable that a hemorrhage either epidural or subdural involving the right rolandic area was responsible for the focal symptoms present. The additional evidence obtained by skull percussion strongly supported this conclusion and rendered the localization practically certain.

The patient was immediately placed upon the table and prepared for operation. Dr. Bartlett made the usual incision, and on reflecting the scalp the exposed area of the skull showed a normal condition. The skull was opened at a point just beneath the wound of scalp, or at a point corresponding to the middle third of the second frontal convolution. Neither epidural nor subdural hemorrhage was found at this point, but the exposed area of the brain manifested evidence of increased intracranial pressure. The opening was enlarged in all directions, especially posteriorly, when, as the Rolandic fissure was encroached upon, epidural clots were extruded in considerable number; enlarging the opening still further backward and downward enabled the operator to thoroughly remove the extravasated blood. The dura had not been lacerated. The separation of the dura from the skull had occurred somewhat toward the vertex, especially posteriorly, and toward the base extending in this direction downward into the middle fossa. There was found a fracture involving the parietal bone beneath the squamous portion of the temporal bone, and several fragments were removed. The wound was closed, but a light gauze pack was left in the epidural space extending downward in the direction of the middle fossa to control possible secondary hemorrhage. Before the patient left the operating table the pulse and respiration had become nearly normal. Consciousness was regained four hours after the completion of operation, when it was ascertained that the patient had no recollection of events since the morning following the injury. The patient has made an uninterrupted recovery. He was for the first week somewhat somnolent, but was readily aroused, and was then always fully conscious of his surroundings. Two days after the operation the "foot drop" had entirely disappeared; the knee jerk had returned on the left, and the tendon reflexes of the right lower extremity, while no longer active, were slightly stronger than on the left. Abdominal reflexes were now present on both sides and equal, the respiratory excursions were equal on the two sides, and Babinski and Oppenheim reflexes had disappeared. A sensory examination made at this time showed slightly diminished pain and tactile perceptions of the entire left side of the body with no disturbance in posture and stereognostic senses. Four days after operation even this slight sensory disturbance had disappeared, and as far as can be determined patient's nervous system is now (March 24, 1906) normal.

I have reported this case rather at length, because it seemed to elucidate in an instructive manner the problem of localization and the necessity for, and the possibility of, its solution in head injuries.

In conclusion it may be stated that a satisfactory solution of the problem of localization in traumatic lesions of the brain will depend upon: (1) A consideration of all symptoms and their order of development since the injury; (2) the degree of consciousness manifested by the patient and his

reactions to stimuli; (3) a degree of involvement of areas of the brain of known function sufficient to cause focal symptoms; (4) the carefulness and thoroughness with which the examination is made.

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THE SURGICAL TREATMENT OF TRIGEMINAL NEURALGIA.*

A STUDY OF THE CAUSES OF RECURRENCES AFTER OPERATIVE TREATMENT, WITH SUGGESTIONS AS TO THE BEST METHODS OF OBVIATING POST-OPERATIVE RECURRENCES.

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In order to understand the various methods that have been devised in the treatment of trigeminal neuralgia, a short review of the pathogenesis is necessary. Despite the fact that the pathology of trigeminal neuralgia has been so extensively studied, there is no agreement in the views of the numerous observers. The changes that have been found may be classified under two headings, first, those that have been found in the peripheral nerves, and secondly, those that have been found in the Gasserian ganglion.

The pathological changes in the peripheral nerves.—Dana[1] found an obliterating endarteritis, but no changes whatever in the nerve elements. Putnam[2] in ten cases found as the most frequent pathological change an endarteritis and a general fibrosis. Horsley[3] found an increase in the fibrous tissue content of the nerve, or what is generally termed a sclerosis, which he attributes to a chronic inflammatory process. In a subsequent communication,[4] however, he finds that in every instance the epineurium is shrunken and sclerosed; he also qualifies this statement by attributing his findings to the long duration of the disease in his cases, and suspects that, had the patients been operated in their earlier stages, an active congestion and edema might have been found. He finds an endarteritis in some cases, but not in others. Schweinitz and W. Rose (quoted by Krause) found in addition to an obliterating endarteritis, that the axis cylinders appeared either swollen or shrunken, and occasionally absent; the myelin sheaths were swollen and showed on cross section a number of indistinct concentric rings; the sheaths of Schwann appeared shrunken and markedly rich in nuclei. The endoneurium was increased, particularly in the neighborhood of the blood-vessels. The changes resembled those of a chronic neuritis, and as they were more marked in the periphery than in the center, Rose assumed that the lesion was an ascending one. Krause's[5] examinations of nerve trunks, obtained by the evulsion method of Thiersch, showed only occasionally a thickening of the nerve sheaths, and nothing else.

The pathological changes that have been found in the Gasserian ganglion.—Schuh (quoted by Krause) examined the ganglion, obtained at autopsy, from a patient who died of pyemia, the result of a resection of the inferior dental nerve, and found a pigmentation of the ganglionic cells; the ganglion itself was swollen and the vessels turgescent with blood; so that he assumes an exudative inflammation. (The findings in this case cannot be regarded as valid, because they may have been due to an extension of the inflammation from the suppurating focus.) Rose (quoted by Krause) found in his first case of extirpation of the ganglion a thickening of the interstitial connective tissue and irregularity in form of the ganglionic cells; on the basis of these findings he regards the disease as a chronic inflammatory process, resulting in contraction and compression of the nerve cells. Horsley[4] says that he has not seen more degenerative changes in the ganglion than could be accounted for by the age, condition, and habits of the patient; in three cases, however, he found both the ganglion and roots firmly matted by adhesions to the walls of the cavum Meckelii. Antonio d'Antona (quoted by Krause) merely found a sclerosis of the ganglion. Krause,[5] in an examination of a large number of cases, found no sclerosis or endarteritis, but only a degeneration of the ganglionic cells and nerve fibers. He concludes his remarks by saying that whatever the pathological changes may be, the origin of the disease must be in the Gasserian ganglion, because recurrences did not take place in any of his cases of complete extirpation of this organ, particularly as, in some cases, three and one-half years had elapsed since the operation. Inasmuch, however, as Krause himself in a subsequent communication[6] reports two recurrences, this statement requires qualification. Furthermore, if this view of Krause is correct, how can he account for the benefits, if sometimes only temporary, that are obtained by peripheral operations? Also, how can he explain the almost complete immunity of the ophthalmic division? In this connection it may be remarked that some observers have held that the disease originates in the sensory root of the fifth nerve; were this the case, we should also expect involvement of all three branches, which only rarely occurs.

The argument of many observers that the disease is a neuritis can probably be negatived; with the exception of the symptom of pain, trigeminal neuralgia presents none of the symptoms and physical signs of any of the other well-recognized neuritides, such as anesthesia, paralysis, or the electric reactions.

Davis[7] examined a ganglion by the Nissl method of staining, and describes his findings in the following words: "There are a large number of cells of normal contour and staining properties. There are also, however, a large number of cells in advanced state of degeneration, irregular in outline, with a peripheral position of the nucleus, which is also at times irregular in outline, and containing at one end of the cell considerable masses of yellow pigment. There are other cells in which the nucleus has entirely disappeared. These cells stain a deep purple by the Nissl method. A few cells, while irregular in outline and appearance, take the stain very faintly. There are several empty capsules, caused evidently by a complete disappearance of the cells. By the hematoxylin eosin stain the above results are confirmed. The capsules of the degenerated cells are irregular in outline and show a tendency to collapse, when the degeneration is very advanced. Many concentric calcareous bodies are seen among the nerve fibers and in the stroma of the distal end of the ganglion. By the Weigert sheath method the pigment in the ganglionic cells looks of a dark brown, almost black, color." Frazier[8] says: "Not a great deal is known of this (pathology) phase of trigeminal neuralgia. But from our present knowledge it can be safely asserted that there are two or three distinct types of trigeminal neuralgia—one, in which the lesion is primarily a neuritis of the peripheral branches, which subsequently may or may not extend to and invade the ganglion; the other, in which the primary lesion first appears in the gan-

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glion; and a third, perhaps, in which the lesion is neither in the ganglion nor in its branches, but in the central nervous system. The lesion may be of a degenerative type, an intestitial neuritis, or a neoplasm." Spiller,[9] who has examined ten Gasserian ganglia removed by Keen, describes his findings as follows: "The lesions in the Gasserian ganglion in the more advanced cases of tic douloureux consist of much swollen medullary sheaths, swollen axis cylinders, atrophied fibers, empty nerve sheaths, nerve bundles in which the nerve elements have been destroyed and only connective tissue is left, atrophied ganglion cells, cells faintly stained, and sclerosed blood-vessels, in some cases even without a lumen."

All the observers quoted above have regarded the pathological changes as primary and in direct etiological relation to the disease. Assuming even that many of the changes which they describe have actually occurred, we cannot accept their findings as primary, because all the pathological changes can be easily accounted for as secondary products. These secondary influences might be classified as follows: (1) Rough handling of the nerve or ganglion as the result of the necessary manipulations in the course of the extirpation. (2) Incomplete preservation of the ganglion after removal. (3) The age of the patient. As is well known, the disease occurs mostly in patients past middle life, in whom endarteritic and sclerotic changes are very prone to occur. (4) Ascending changes in the nerve or ganglion as the result of previous peripheral operations. That this possibility has been well appreciated by investigators is revealed in the researches of Monari,[10] Schwab,[11] and Coenen.[12] In order to exclude this possibility these observers report the examination of five ganglia, in cases where no previous peripheral operation had been performed. It is significant that these five ganglia were found to be entirely normal.

As opposed to the positive findings of the above authors, Billroth, among the earlier observers, and Hutchinson and Cushing in more recent times, found no changes in the ganglion or nerve whatever. In the words of Cushing, no lesion sufficiently characteristic to consider it typical of a particular disease is present.

It cannot be denied that occasionally gross pathological changes, as sarcomata, fibromata, neuromata, psammomata, cholesteatomata, etc., either of the ganglion or nerves, or of adjacent structures, have been found, and with a mistaken diagnosis the Gasserian ganglion has been extirpated, but these do not properly come into consideration, inasmuch as they are not true cases of neuarlgia.

I do not like to sumbit any theory that cannot be proved by definite pathological or physiological evidence, but it has occurred to me, whether trigeminal neuralgia cannot be accounted for by assuming some variety of vasomotor disturbance; it might therefore be classified with such diseases as Reynaud's disease, intermittent claudication of Erb, erythromelalgia, etc. There are a few clinical data that are common to both; the intermittent character of the pain, the age of the patient, and the relief which is often obtained by the administration of such drugs as nitroglycerin or aconite (vasodilators), or strychnine (vasoconstrictor).

As I have indicated, we know practically nothing of either the etiology or pathology, or even the site where trigeminal neuralgia originates. This is unfortunate, because it prevents us from attacking the disease in a rational manner, and compels us to treat the neuralgia on a purely symptomatic basis; as I shall show, that even the most radical operation, the extirpation of the Gasserian ganglion, can only be regarded as a symptomatic cure.

The treatment of trigeminal neuralgia having resolved itself to the relief of pain, the simplest operation that can be devised would be one which prevents sensory impulses from passing to the brain; in other words, a neurotomy. In recording the evolution of the various operations for trigeminal neuralgia, we find, in fact, that neurotomy was the first operation that was performed. This was done as early as 1748 by Schlichting. Similar operations followed by Louis in 1766 and Viellart in 1768. The immediate results were very good, but as was to be expected, they were followed by relapses in short order. These recurrences were evidently the result of regeneration and reunion of the divided nerve.

It was therefore merely a short step to the next operation, which consisted in the extirpation or resection of as large a segment of the nerve as could be exposed by the operation; in other words, a neurectomy was performed. This operation, however, was also followed by disappointment, inasmuch as constant recurrences took place, although they ensued at a later interval than after simple division. While this operation is even now performed occasionally by some surgeons, we find that as early as 1845 Dieffenbach had already condemned the operation in his work on operative surgery.

No material progress was made for several decades. Acting upon the assumption that the operations hitherto performed failed because they were done too near the peripheral distributions, surgeons next turned their attention to the more centrally located portions of the fifth nerve; namely, at their exit through the foramina at the base of the skull.

Technically correct operations have been devised for the division of the second branch by Carnochan, by Luecke,[13] and subsequently in a slightly modified form by Lossen,[14] and by Braun;[15] other methods for reaching the second branch are the operations described by Gussenbauer[16] and Friedlander.[17] For the exposure of the third branch extracranially Kroenlein[18] has devised an excellent and much practised method; other methods have been described by Kocher[19] and Mikulitz-Madelung.[20] The second and third branches together may be reached by a method devised also by Kroenlein.[21 22] That all of these operations are technically feasible is proven by the fact that all have been performed with greater or lesser frequency; at the same time it cannot be denied that they are difficult of execution; the space afforded, even after resection of the zygomatic arch and extirpation of the coronoid process of the inferior maxilla, is a very limited one; the wound itself is very deep, and filled with adipose tissue and large vessels, and the hemorrhage, though controllable, is sometimes very severe. Excluding, however, the technical difficulties, these operations have been found wanting because of the frequency of recurrence of the malady in a large percentage of cases; and just as in neurotomy and neurectomy, the cause of the relapse in the cases examined has in every instance been due to a regeneration of the divided nerve. As a matter of fact, if critically analyzed, these operations at the base of the skull are merely neurotomies and neurectomies, which have simply been performed at a higher level; so that the reported relapses are not at all to be surprised at.

The next step in the evolution of the treatment of trigeminal neuralgia was in some respects a recourse to the older operation of neurectomy. The occasional (though few) fatalities, and especially the

large percentage of relapses after the major infracranial operations, again led the attention of Thiersch to the peripheral distribution of the fifth nerve, and in 1889[23] he came forward with his method of evulsion (neurexairesis) of the nerve.

The method is so well known that it hardly needs a lengthy description; suffice it to say that the affected nerve is exposed through a small incision, usually at the periphery, at its exit from one of the foramina. It is then firmly grasped by forceps, especially constructed for the purpose, and slowly, utilizing at least half a minute for one turn of the forceps, the proximal and distal portions of the nerve are twisted, until both tear off. Usually the proximal portion gives way first, very probably because the nerve breaks over the edge of a deeper foramen; the distal portion can be evulsed to a greater length, so that practically the entire peripheral portion, to its finest endings, is evulsed. In this manner beautiful anatomical specimens, eight to ten cm. or more in length, can be obtained.

This method marked a great step in the treatment of trigeminal neuralgia. As might be expected, the immediate effects were excellent, and the earlier reports speak of it with enthusiasm. After the patients, however, had been observed for a sufficient length of time, there appeared the reports of recurrences, which increased in frequency, as sufficient time is allowed to elapse after the operation. In his very first communication Thiersch already describes a recurrence of supraorbital neuralgia, which, however, he ascribes to some anatomical abnormality; he argues that a regeneration of 6 cm. of nerve tissue cannot be conceived; it is more than probable, however, that his very first case of recurrence was due to regeneration, as subsequent recorded cases have proven.

Angerer,[24] for instance, records a goodly percentage of recurrences after nerve evulsions, but ascribes these to a faulty technique. There is no necessity, however, to quote lengthy statistics of recurrences after the Thiersch operation; they are well known, probably, to all of you; I also have seen a number.

The poor results obtained by the peripheral operations that I have described led surgeons to the idea of attacking the intracranial portion of the fifth nerve. Mears[25] suggested the operation in 1884, but never had the opportunity to perform it. As far as I can ascertain, the first intracranial operation was performed by Rose,[26] who extirpated the ganglion; he chose the pterygoid route for its exposure. Shortly thereafter Horsley, in 1891, divided intracranially the roots of the fifth nerve. I may add here that this operation has again been warmly advocated by Spiller and Frazier;[27] it has also been performed by Keen, and, according to von Gehuchten,[28] by Lauvers in three cases.

Ganglionic extirpation was, however, placed on a firm footing only when it was accurately described and performed by Hartley,[29] and independently by Krause.[30] Since then the technique of the operation has been modified by various observers, notably by Cushing,[31] who suggests the transzygomatic route; by Hutchinson,[32] who performs only a partial extirpation of the ganglion, leaving the infrequently affected first division, for the reason that its removal is fraught with such dangers to the eye; by Rose, who performs a high section of the roots of the fifth nerve, and by numerous French observers, who report complicated methods of attack. The underlying principle in all these operations is, however, the same, namely, that the Gasserian ganglion is extirpated, after division of its branches.

After this operation the number of recurrences suddenly diminished. No one can, however, deny that this has been dearly bought; the operation is one of the most severe that surgeons can perform, and is attended by a comparatively high mortality. Thus Tiffany[33] has collected 108 cases of the operation, with 22 per cent. mortality; Turk,[34] in a later series, reports a mortality of 17 per cent. in all the collected cases. This is not surprising when we consider the deep location of the Gasserian ganglion, the important and delicate surrounding structures, which are exposed to much handling in the course of the operation, *e.g.* the meninges, the brain, the cavernous sinus, etc. Death seems to have been due in most of the fatal cases either to infection, or hemorrhage, or shock.

The results in the very large percentage of operative recoveries are excellent; we must acknowledge, however, that even this severe operation has been attended by undoubted instances of recurrences. Such are reported by Friedrich,[35] Garre,[36] Parmenter,[37] Sapejko,[38] Schwartz,[39] Marchant and Hebert,[40] and Perthes.[41] To these might safely be added also two cases of Krause[42] of distinct and undoubted relapse, though the author ascribes the recurrence in the one case to hysteria, and in the other to a neuralgia of central origin. That there are many recurrences after incomplete extirpation of the Gasserian ganglion is not surprising. If it is furthermore considered that many of the cases are reported after a very short period of observation (in some instances less than two weeks), we cannot but believe that a report after a much longer period of observation would swell the list materially.

With the demonstration of this appreciable list of undoubted recurrences after complete extirpation of the Gasserian ganglion, we cannot but believe that the operation is not based on correct principle. Even one authentic case, such, for instance, as that of Perthes, in which Marchand performed the autopsy, is sufficient to invalidate the operation. We are bound, therefore, to come to the following conclusions regarding the Hartley-Krause operation: (1) The operation is attended by a very high mortality; (2) it undoubtedly gives the greatest number of complete recoveries; (3) occasional, though rare, recurrences have been met with after this operation, even in competent hands; (4) the relapses are due to a regeneration and reunion of the divided nerves.

In summing up the results of the operative treatment of trigeminal neuralgia, as I have outlined it, we find that in all cases of recurrence this has been due to a regeneration of the divided or extirpated portions of the nerve. It is not within my province to discuss here the causes and process of regeneration; nor is it of great importance for the purposes of my paper to take sides in the question, whether the nerve regenerates from the central or from the distal end, or from both; the important point to realize is that it does regenerate; this I believe I have amply proven by the cases cited, and have demonstrated it to my own satisfaction in cases of my own. (Those interested will find a complete résumé of the question in Schütte's article in the *Zentralblatt für Allgemeine Pathologie,* 1904, Vol. XV, p. 917.)

I lay no claim to the discovery of this principle, as subsequent search of the literature has taught me; the principle was, however, brought home to me in a striking fashion in a case which I shall now describe.

The case was one of severe neuralgia of the inferior dental nerve. I operated upon the patient

in the following manner: An incision one inch in length was made, extending from the angle of the jaw forward; the masseter and periosteum were separated from the ascending ramus and retracted upward; with a narrow gauge, a groove was now chiseled into the ascending ramus, until the inferior dental canal was exposed for a distance of about one inch. The inferior dental nerve was carefully isolated from the accompanying vessels, and one and one-quarter inches were resected. The masseter and periosteum were replaced and fastened by sutures, and the skin closed. Primary union followed, and patient was discharged, free from pain.

One year later patient presented himself at the hospital, with a recurrence of pain, which was quite as severe as before. I reopened the old cicatrix, and after retracting the masseter upward, found the groove in the external surface of the ascending ramus of the lower jaw, with smooth, rounded edges and filled by cicatricial tissue. Within the canal I exposed distinctly a newly-formed inferior dental nerve of normal appearance. I again extirpated about one and one-half inches of the nerve, and with the idea of preventing regeneration I filled the canal with silver foil and hammered it in until it was tightly packed. Again I sutured the masseter into place, and closed the skin incision. The silver foil remained *in situ*, and has remained there ever since; the patient up to the present time—ten months—has been free from recurrence.

Some two weeks after this operation, I received a number of the *Deutsche Zeitschrift für Chirurgie*, containing an article on trigeminal neuralgia by Perthes,[41] already referred to. There was a short appendix to this article, which was of the greatest interest to me. This appendix dealt with an experiment which Perthes carried out on a large dog. Upon the left side he exposed the infraorbital nerve and evulsed by the Thiersch method 9.5 cm. of the nerve. Upon the right side he divided the nerve at the foramen, and had Dr. Fritzsche, a dentist, plug the foramen with gold. Seven months later the dog was killed, and at autopsy the following condition was found: Upon the left, *i.e.* upon the side on which the nerve was evulsed, a newly-formed, complete nerve was found; upon the right side the filling was found intact, and naturally there was no union between the divided ends of the nerve. I saw, therefore, that experimentally, at all events, I was antedated by Perthes.

The principle (which I thought I had discovered) had also been made use of by Abbe,[43 44] who interposed a piece of rubber tissue between the intracranially divided ends of the second and third divisions of the nerve. I regard this operation as the only intracranial operation that is founded on correct principle. Hutchinson[32] devotes considerable space to arguments against this operation. The arguments advanced by Hutchinson I regard, however, as superficial and based on fallacious theories as to the cause of recurrence after removal of the Gasserian ganglion.

I would not, however, defend the Abbe operation in its entirety. I believe the weak part of the operation consists in the use of rubber tissue as an intervening medium. It is too soft and yielding to be accurately handled, and, furthermore, I believe that by the action of phagocytosis it may crumble and disintegrate in time, and even disappear, thereby enabling the nerves to regenerate. A more suitable substance would be fine celluloid, such as is used in photographic films. I have also had made thin, flat gold buttons, provided with suitably sized shanks, which can easily be inserted into the foramina. I have had no occasion to use either of these appliances, but shall do so at my earliest opportunity.

Among other suggestions that have been advanced by some surgeons may be mentioned those of Morse,[45] who advised Horsley's bone wax, and Chippault, who suggested the use of dentist's amalgam.

I cannot conclude a review of the operative treatment of trigeminal neuralgia without referring to the intraneural injections of osmic acid, which have been so warmly advocated by Murphy. There is no doubt that this operation gives temporary relief, but I believe that in the great majority of cases a recurrence follows sooner or later. A very thorough clinical and experimental study of this procedure has recently been published by Eastman.[46] He found that pathologically the injected nerve was in no way affected by the osmic acid injections, and that therefore he could not see why the neuralgia should not always recur. He admits clinical recurrences, and states that the operation will probably have to be repeated over and over again.

Conclusions.—I believe the treatment of trigeminal neuralgia may be summed up as follows:

1. Eliminate any possible etiological factors, such as tumors, carious teeth, antral disease, malaria, syphilis, etc.

2. Determine accurately the nerve branch or branches involved.

3. The operation should be performed as near to the periphery as possible.

4. The operation should be performed early. This is important, because the earlier the case, the more chances there are that a peripheral operation will be of benefit.

5. Whatever the character of the operation may be, the dominant principle must be the *prevention of regeneration* of the affected nerve. More specifically, the operations may be classed under two headings, depending on the nerve or nerves affected:

(a) Peripheral operations. If the supraorbital, infraorbital, mental, malar, or inferior dental branches, either singly or collectively are involved, the operation consists in division of the nerve, and plugging up of the foramen by a gold or silver button or wire.

(b) Central operations. If the neuralgia involves the upper teeth and palate (superior maxillary division) or tongue (inferior maxillary division), existing either singly or together with the other nerves described above, the operation as outlined by Abbe must always be performed, substituting, however, celluloid or a gold button, instead of rubber tissue.

6. Finally, I believe that if the above principles of treatment of trigeminal neuralgia are carried out, the operation of extirpation of the Gasserian ganglion will become entirely unnecessary.

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ONE HUNDRED AND THREE CASES OF EPILEPSY.

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Epileptics suffer a temporary suspension of consciousness, recurring at intervals, usually accompanied by muscular spasms, and followed by stupor.

The above statement is my definition of the disease. It is estimated that there are 150,000 epileptics in the United States. This large army of afflicted persons may well occupy our attention for a time. Of that number, I have notes upon 103 cases in private practice, dispensary, and hospital.

Age.—The young are most affected. Of 1,700 patients treated at the New York University Children's Clinic, eighteen cases were epilepsy, *i.e.* about one per cent. The youngest began at two weeks of age, and others at three months, four months, seven months and eleven months, and then at practically all ages. Thirty-nine cases began under five years, sixteen between five and ten years. Of my one hundred and three cases, eight are recorded as being five years of age when seen, thirty-one between five and ten years, fifty-two between ten and twenty years, and twelve over twenty years of age.

As thirty-nine cases began under five years of age, and sixty-three are under treatment at four times that age, it is apparent that epilepsy has little tendency to shorten life or to be readily cured. It is found that children of uncertain nervous equilibrium are most easily subject to convulsions. At the periods of dentition and puberty such a child is prone to convulsions if there be indigestion, or any acute disease developing. This is true also of women at the menstrual period. A series of spasms having begun, the nerves readily acquire the convulsive habit, and what was at first a group of symptoms becomes a disease.

Heredity.—Children of unhealthy or neurotic parents are more liable to become epileptic than are those of perfect ancestry. The following cases are cited as examples: Case iii., brother insane; case x., mother paralyzed; case xvi., parents moderate drinkers; case xx., mother epileptic; case xxxi., parents heavy drinkers; case xxxix., mother hysterical, father intemperate, uncle and two aunts very nervous; case xiv., father intemperate; case liv., father intemperate, and mother suffered from neuralgia for years; case lxvii., father phthisical; case lxxxvi., girl of eight years, spasms since four years old, seems hysterical, mother had convulsions, and so had two brothers at dentition, another died at eight days old of convulsions; case xc., had fits from fourteen years to death at twenty-eight years; during a fit she overturned a table and lamp, which so burned her that death resulted in a few hours. She left two children, one five years old, who is very nervous, but as yet has not developed any convulsions.

Many of the hospital cases have little or no family history, but they originate in a class of people used to poverty, overcrowding, and the abuse of alcohol. These evils cause bad heredity and injurious environment, which in their turn produce ill-conditioned bodies and impoverished nerves. Though convulsions cannot be directly inherited, a good preparation for them can be transmitted. Forty-nine per cent. of the children of epileptics become epileptic. This should be remembered when we are asked whether epileptics should marry or not. Spratling states that sixteen per cent. of epileptics have epileptic parents, fifteen per cent. have alcoholic parents, and that tuberculous heredity is found in fourteen per cent. of the cases. He also finds that the more unfavorable the hereditary combinations the earlier the age at which epileptic seizures begin. Cerebral palsies he finds to be the cause in eleven per cent. of his cases, and one-third of these are congenital.

Palsies appear in twenty-two of my cases, as follows: Left hemiplegia, 5; right hemiplegia, 15; left upper extremity, 1; right upper extremity, 1.

Direct Causes.—The immediate cause of the first convulsion may arise in many ways. For example, we find fright from swinging; fright from fire; burn from hot oil on the shoulder; in four cases from falling down stairs; fall from fourth story; fall of sixty-two feet when two years old; injury at birth—instrumental delivery, but no fit until ten years old (?); masturbation—also a questionable cause; phimosis; two cases of traumatic meningitis; beam falling on skull; cold steamed current dumpling at one year old; in two cases, run over by wagons; one knocked down by horse, which stepped on forehead; measles; scarlatina with dropsy; pertussis; sunstroke; eating oranges at seven months of age—

convulsions for four and a half hours; first fit due to green apples; another, fright in a three-year-old child. A case of peculiar interest was No. lxxi.—a girl of twelve years, whose first fit occurred when she was eleven months of age. Her mother nursed her just after receiving news of the sudden death of an older child. The shock so affected the milk that it gave the baby convulsions, which continued for four days, and were followed by facial paralysis for one week. Spratling finds 6½ per cent. caused by trauma, while the present series contains fourteen cases so caused.

Types.—Epilepsy is spoken of as "mild" or "severe" in form; or, more commonly, as *petit mal*, or *grand mal*. Of this series, fifty-three cases are recorded as *grand mal*, thirty as *petit mal*, and thirteen as mixed—some of the latter being in both the mild and severe column. In addition to these are examples of peculiar phases less commonly seen. Gowers finds one-third of the cases of psychic origin. The following fourteen are largely psychic in manifestation.

Peculiar Phases.—Case xv., violent temper, fighter, no cause; case xvi., violent temper; case xviii., barks and shrieks in attacks. (These are the cases that gave the ancients excuse for ascribing the disease to the malice of demons.) Case xxx., status epilepticus every three months, did not speak for six weeks, thought to be tongue tied; case lxviii, also status epilepticus every three months; case xxiv., wild delirium and dancing, contortions; case lxiv., amnesia, twice a year, lasts two weeks, wanders aimlessly for hours, like one coming out from delirium; case xliv., insane? case xlv., became insane—sent to Ward's Island; case liii. (1904), curses, bites himself, wild in talk and actions, (1906) idiotic; case lx., girl runs about suddenly, instead of having fit; case lxxxii., girl talks during attack; case xcii., screams, stands, has no idea of time, now *petit mal*, formerly *grand mal;* case c., runs, cries, does not fall, cause said to be fright; case ciii., boy eleven years old has periods of twenty-four to forty-eight hours during which he does not know what he does or what occurs; sometimes ends in a cataleptic coma; he was lost for a week two and a half years ago and was nearly starved; there is some question as to whether this was the cause of the spells or simply a prolonged attack; he has an epileptic sister.

Premonitory Symptoms.—Many epileptics experience some sensation which is a warning that an attack will shortly take place. This aura, or breath, is most common in cases of eccentric origin—Jacksonian. As the aura is the last record of consciousness, there will be no recollection of the fit in those without it. The warning gives to many time to save themselves from injury. This sensation may be peripheral, or it may arise in the special senses. Examples are as follows: From the scar of a burn; four have peculiar feelings in the stomach; five have headache; three have vertigo; a feeling of fear; pins and needles in the chin; machinery in paralyzed arm; peculiar smell and taste; feels like yelling; peculiar odor; peculiar sensation in the nose; shock goes through body, and patient fears that the ceiling will fall; sensation in the chest; swears violently; mental excitement; sudden feeling that all seen or heard has appeared before. The taste sensation is apparently rare. Sachs, in particular, mentions not having seen such a case.

Insanity and epilepsy are closely related or allied. 8.6 per cent. of the insane being epileptic (Allbut, viii., p. 335). Case xxxi.—A boy of fifteen years had from twenty to thirty fits a month; but once in six months would seem to be insane for a few days instead of having convulsions; in March, 1905, he had appendicitis and was operated upon; the appendicitis was cured, but the epilepsy remained as before. Case xliv.—A boy of twelve years; appears insane at times. Case xlv.—A boy of nineteen years; became definitely insane, and was sent to Ward's Island. Three per cent., therefore, is the proportion of insanity in this series.

The relation of the two diseases and the hereditary tendencies of each are full of interest, but my numbers are too small for conclusions. Gowers asserts that there is a family history of epilepsy in 66 per cent. of his epileptics, and a history of insanity in 33 per cent. of them. Repeated epileptic seizures must produce a profound effect on the brain, yet the mind is not always dulled. Mentality is recorded as good in twenty-six cases, fair in five, normal in three, while thirty-three cases are imbecile.

The children seen at the clinic were nearly normal mentally, while those in the hospital, being more severe or of longer standing, were of a lower mental grade. There are historic cases of epileptics noted for intellectual power, Julius Cæsar, Mahomet, and Napoleon Bonaparte being well known instances.

Anatomy of Epilepsy.—Hughlings Jackson divides the nervous system into three layers—(1) Lowest: Marshall Hall's spinal system, control of walking, respiration, etc.; (2) Middle: "Functionally definite, but anatomically not so readily definable;" corpus striatum, sensorimotor in character; (3) Highest: Intellectual centers—"organ of mind"—less automatic. Here are the psychic forms, periods of blankness, etc.—(Spratling: p. 105).

Physiology of Cause.—"Formerly nerve cells were thought to be the source of energy. Now, histologists teach that the function of the nerve cells is nutritional. We must regard the spongy gray matter as the source of nerve energy. In this arise the fibers that become axis cylinders. Impulses of health or disturbances of disease start here. They travel through the fibers, which traverse nerve cells, and then through efferent nerves reach muscle fibers, thus bringing about voluntary action, or causing spasm." Gowers says (Allbut's System of Medicine, vol. vii., p. 762) that we know nothing of the pathological anatomy of idiopathic epilepsy. "Any perceptible alterations are more likely to be the result of functional disturbance rather than the cause of it." He regards epilepsy as due to diminished resistance of inhibitory fibers in the spongy gray matter, the fault of the "neurous of association" rather than of the cells themselves. Hughlings Jackson regards the disease as one with increased nutrition, causing exalted function and strong discharges. Marinesco and Serieux give three specific lesions—(a) Partial disappearance of tangential fibers of the cortex, *i. e.* the "neurons of association;" (b) Infiltration of nerve cells by leucocytes; (c) Disappearance of the fine granules in the cell substance of cortical nerve cells (chromatolysis).

Responsibility for Crime.—Persons having psychic epilepsy, or the psychic equivalent of a seizure, sometimes commit offences which render them liable to be classed as criminals or insane. It is difficult to draw the line. This is the "Comitial ambulatory automatism" of Jones.

Treatment.—Having learned that the epileptic has an irritable nervous system, an unstable cortex, we try to improve general nutrition and quiet the nerve cells. A vegetable diet is advocated, with all that makes for good hygiene. Of drugs, seventy-

five are listed as good; the last one advocated is suprarenal extract. Epileptic children should not attend public schools, but should be taught where there is little strain and excitement—manual training there may be, but with a care about edged tools. No drugs stand the test of time like the bromides. If the patient is deprived of ordinary salt in his food, larger amounts of bromides can be tolerated, and do good. As intestinal disturbances provoke attacks, this part of the anatomy must be watched. The bromides, with general tonics, has been my plan of treatment almost always.

Surgery and Epilepsy.—Two of the cases were operated on for appendicitis, one had a double ovariotomy, and one was circumcised. Four were subjected to craniectomy—two because of injury to the skull from falls, one because of depressions owing to a falling beam, one for symptomatic reasons. There does not seem to have been any permanent or material relief. Usually a new scar is substituted for an old one. Pressure from traumatism must be relieved by immediate action after the accident, and not after fits have been established. Sachs says: "Our ardent hopes in this matter have not been realized." Jacobi's verdict is "Not dangerous, but inefficient."

Care of the Patient.—The proper care and treatment for epileptics is to be found in colonies like that established in Westphalia thirty-five years ago. There 6½ per cent. are cured and 20 per cent. are improved. Ohio, Pennsylvania, California, New Jersey, Massachusetts, and New York now have such colonies, ours being the well known Craig Colony at Sonyea.

Prognosis.—The less the hereditary influence the better the prognosis. The fewer the fits at night, the better the outlook.

Jacobi says: "The spasms and convulsions of infancy are serious manifestations, and if allowed to go unchecked may lead to explosions of genuine epilepsy, and later to insanity."

160 West Seventy-third Street.

A PLEA FOR A MORE THOROUGH COURSE IN PRACTICAL PHARMACY IN OUR MEDICAL SCHOOLS.

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It is a well-recognized fact that the course in practical pharmacy, as given in our medical schools, is greatly deficient in every way. If one carefully examines the curriculum of any medical school to-day, he will find an almost infinitesimal amount of time devoted to this subject, even in the best schools, and in some instances it is not taught at all; yet, almost without exception, a great amount of time is allotted to the major branches.

We all recognize the fact that each year the standards are being raised, both as to the preliminary requirements and also as pertains to the general course work, and rightly so; but is the amount of time devoted to practical pharmacy proportionately increased? Everyone must admit that it is not. But why not? Is a thorough knowledge of the drugs that we are to use in the treatment of disease of no value to the medical student? Is it of no value to the practitioner to know how to combine drugs so as to make desirable and palatable combinations, and preparations that are of a pleasing appearance?

Is it any wonder that homeopathy meets with the success that it does, when we note the nauseating, unsightly, and foul-smelling combinations that are often ordered by the physician? Every physician frequently meets people who give as their only reason for employing a homeopathic physician that their children take his medicine so much easier, and without resistance, and they themselves likewise prefer their medicine in a form easily administered. Everyone who has served behind the dispensing counter of a prescription store has compounded many horrible concoctions and remarked as he did so that "he is thankful that he is not the patient."

When a physician is called to see a patient it is necessary that he should first make a proper diagnosis of the disease with which his patient is suffering, and, in order that this can be done, the physician must possess a thorough knowledge of the fundamental subjects of medicine, viz., practice, surgery, gynecology, and the rest. This is a *conditio sine qua non* in order that he may intelligently treat that patient, but is it not equally essential that, in order that a cure may be effected, he should know what agents to employ, and how to administer them? Therefore, without a thorough knowledge of drugs (practical pharmacy) the physician cannot, and does not, cure his case; and, after all, is it not by our results that we are judged by the laity? There is no question but that a correct diagnosis and a proper treatment are equally important and essential to the successful practitioner. Now, if this be true, why is the one subject so thoroughly considered and the other almost entirely ignored in our medical curriculum? It can only be due to the fact that the medical profession does not recognize the true importance of a thorough knowledge of pharmacy, and this is especially applicable to those who represent the faculties of our medical schools. I was in conversation recently with a lecturer on pharmacy in one of our largest medical schools, and he told me that he has repeatedly petitioned the faculty of that institution for more hours to devote to his subject, and it has always been refused, on the ground that the time is already occupied, and no one desires to curtail his present course; some even had the audacity to tell him that he has already too many hours devoted to such an unimportant subject, and some of these very teachers write for the most disagreeable and incompatible combinations.

In an article by me in the *Journal of the American Medical Association* of January 7, 1905, entitled: "The Trend of Modern Prescription Writing," I showed, as the result of the careful examination of five hundred prescriptions from each of two of our leading pharmacies, that the trend of modern prescription writing was toward the use of proprietaries, as 35.9 per cent. contained them. Again, only 62.1 per cent. were written correctly, whereas this should have been near the hundred mark; and the great majority of these prescriptions were from the pens of our prominent teachers in our medical schools, the physicians, whom above all others should have a thorough knowledge of every branch of medical science. The criticisms in prescription writing applied to the endings used in designating the drugs or preparations, and the use of the proper official names as embodied in the inscription and the proper phraseology as applicable to the subscription.

A marked defect in the knowledge of prescription writing was especially noticeable among the recent graduates, and why? Several of these recent graduates who ranked as the "honor men" in their respective schools, and who likewise received the highest State Board averages, showed a most

noticeable deficiency in their prescriptions. Now, who is responsible for this deficiency? Is it the teacher, the defective means at his command, and insufficient time allotted for teaching the subject, or the student, that is at fault? The teacher is often a physician who has never received any practical pharmaceutical training other than the "smattering course" that he received as a medical student, and, as a rule, on account of limited training and lack of interest, he follows the same rut as his predecessor; as a consequence, the pharmaceutical laboratory is deficient in its equipment and very unattractive.

Because of these facts, officers and trustees consider this branch of medicine unimportant, and the student, not realizing the value of a pharmaceutical training, completes the course ignorant of its many valuable points; and usually not until he reaches the senior year, and commences to prescribe, does he fully realize his deficiency in the knowledge of the mode of preparation, appearance, administration, and effects of combining drugs, the very ammunition he is to use in firing his gun of knowledge, to combat disease. It is not, however, until as a physician, authorized to use blank and pencil and brought face to face with the patient, that he most seriously and keenly feels the sting of his pharmaceutic ignorance: he tries to formulate a palatable mixture, but fails; and, when he expects to find a nice, clear solution when he calls, he finds one with an unsightly and often dangerous precipitate. It is now after repeated failures that the horizon is filled with attractive-looking proprietary preparations, and these are substituted for the official drugs, because the label states that they are specific for the disease under consideration. As a result, this habit, once established, is continued through life, and this is the fault of the college, not the medical student.

One and three-tenths per cent. of the prescriptions examined contained dangerous combinations that would have resulted in serious consequences if administered as ordered. This shows two things: First, the importance of having our prescriptions compounded by competent pharmacists, who act as a "safety valve" when dangerous compounds are ordered, either through oversight or ignorance on the part of the prescriber. Second, the importance of every physician having a general knowledge at least of chemical combinations and how to combine drugs intelligently, in order to obtain the best results without forming dangerous compounds. A course in pharmacy in a reputable college is always a most valuable and useful foundation for the study of medicine when the student has the available time.

In order to determine how much time is devoted to pharmacy and materia medica in our medical schools to-day, and in order that I might convince myself as to the truthfulness of the reasons assigned for the above conditions, the latest catalogues of six of our leading medical schools, which are considered by everyone as the representative schools of this country, and whose standards are the highest, were examined with the results shown in the following table:

Course of Instruction	School No. 1	School No. 2	School No. 3	School No. 4	School No. 5	School No. 6
No. of hours devoted to lectures and recitations on Pharmacy and Materia Medica	15	72	45	60	72	48
No. of hours devoted to Pharmaceutical Laboratory instruction	16	24		60		16
No. of hours devoted to Prescription writing	Inc. in lect'res	15		Inc. in lect'res	Inc. in lect'res	15
No. of hours devoted to Prescription dispensing by the student	50					
Year of course in which instruction in Materia Medica and Pharmacy	Second year	Second year	Second year	First year	Second year	Second year
Year of course in which instruction is given in Pharmaceutical Laboratory	Second year	Second year	Second year	First year		Second year
Year of course in which instruction is given in Prescription writing	Second year	Third year		First year	Second year	Second & third year
Year of course in which instruction is given in Prescription dispensing	Third year					
Voluntary course in Pharmaceutical Laboratory. Optional. No examination			16			
Total hours devoted to Pharmacy, Materia Medica, and Prescription work	80	111	64	120	72	112

surprised that the average medical student is deficient in prescription writing? He could be nothing else. When we find that one of our leading medical schools would attempt to cover the subects of materia medica and pharmacy, and also prescription writing, in fifteen hours, and another not even mention it in the curriculum, what must we think of the regular class of schools?

The number of hours devoted to pharmaceutical laboratory work varies from none, in one school, up to sixty hours, with one school giving sixteen hours optional laboratory work. The subject is of so little importance that the student can exercise his own judgment in regard to it. The results can be readily anticipated. Only one school requires or even mentions practical prescription dispensing, and this school requires at least fifty hours. This is certainly a forward step, and one to be commended, as *no medical school can graduate competent men in the art of prescription writing without a thorough training in practical prescription dispensing, in which each student individually compounds various types of prescriptions.* Here lies the solution of the whole problem. Five schools give their instruction in pharmacy and materia medica in the second year, and one in the first year; this likewise applies to the laboratory work with the exception of one, which gives no laboratory work at all.

The course in prescription dispensing is best given in the third year, as the student is then better enabled to master the details pertaining to it.

The total hours devoted to the entire subject vary from 64 to 120, proving that some students receive double the instruction of others on these subjects.

As a result of the above investigation, the follow-

ing is recommended as the minimum requirements necessary to give a thorough course in practical pharmacy in our medical schools:

Ninety hours devoted to lectures and recitations on pharmacy and materia medica, with thirty hours laboratory instruction, in which representatives of all the official preparations should be made; this course is preferably given during the first or second year.

Thirty hours devoted to prescription writing, in which the student is thoroughly drilled in the formation and writing of prescriptions.

Thirty hours devoted to practical prescription dispensing, in which various types of prescriptions should be dispensed by the student. These two courses should be given during the third year, for reasons stated above.

Thirty hours should be devoted to a course in pharmacodynamics, in which the action of the most important drugs is demonstrated.

Total hours for entire subject, 210, in contrast to those of the above table. This, of course, should be supplemented by a thorough course in general and applied therapeutics during the third and fourth years.

If each medical college should adopt the above as a minimum standard on this important subject, then and only then would our medical graduates be able to write prescriptions correctly and for palatable preparations, properly combined. The treatment of disease would then be based on rational therapeutics, as it should be.

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SOME POINTS ON THE DIAGNOSIS AND TREATMENT OF THE PRETUBERCULOUS STATE.*

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As the term "pretuberculous state" *per se* is rather vague, I shall beg to premise that in this paper such a term refers to a particular condition of the system that predisposes a person to infection with the tubercle bacillus, or to the melting down of a preexisting tuberculous focus that in time had become latent. In our office practice we are consulted by a class of patients whose welfare seriously depends on an early recognition of the character of their trouble. The subjective symptoms may hardly amount to anything but a feeling of lassitude, loss of ambition, and indisposition to work. They are usually young people; may have no fever, no pulmonary signs, nor may we find tubercle bacilli present in their sputum, even if, on a most painstaking auscultation, we should elicit some subcrepitant râles. The pulse rate may be unduly increased by any little exertion. I have learned in my own practice to classify patients in two principal types of constitution, an acid and an alkaline one; and, as I am of the opinion that the alkaline type is very much less immune than the acid one to tuberculosis, it is my plan speedily to determine to which of the two classes a patient belongs. For such a purpose I apply two principal tests, one confirming the other. First, I determine the acidity of the urine passed some hours after a meal, by adding gradually a 1 per cent. solution of borax to 1 ounce of the urine, containing a piece of blue litmus paper. If much less than twenty minims are required to return a blue color to the litmus paper, I consider the urine subacid, and, excluding special known causes of a subacid—it may be neutral or even alkaline—urine, I suspect the patient with such a urine of belonging to the alkaline type. For the second test I resort to a microscopic examination of the blood. We shall need to gauge the basophile characters of the leucocytes, especially that of their nuclei; and, as this can be done only relatively, *i.e.*, by comparing the stained specimens with other ones taken from persons known to be robust, it is a prerequisite for our purpose that the technique be uniform.* After experimenting with a multitude of disappointing methods of fixing and staining, I have settled down on the following: Having taken smears in the ordinary way, heat them in a double-walled tin box. Not less than 12-15 minutes must be consumed to reach 290°F., and at 310°F. the gas is shut off. (My tin box is five inches high by five inches by six inches, and with a thermometer through the top, is placed six and a half inches above a circular gas stove.) Stain five minutes in 1 per cent. alcohol-soluble eosin in 70 per cent. alcohol; wash, and when dry stain one minute in 1-20 per cent. watery solution of methylene blue. The only test for the proper strength of the methylene blue solution is to see whether it stains the nuclei of the leucocytes of any person's blood alike. If the solution is sufficiently weak, we shall find different shades of blue with different patients. Anent the relations between the blood, the pretuberculous and the tuberculous state, Dr. Holmes of Denver† has presented some most valuable articles, to which the reader may be referred. Suffice it, however, for the present purpose to state that, if we find a low basophile character of the nuclei (hypochromatosis) and disintegration of spongioplasm, with a relative deficiency in number of the smallest lymphocytes, and possibly irregularity in the distribution of neutrophile granules, then a diagnosis of the alkaline type is confirmed, while the presence of a pretuberculous state should be suspected. We must base our opinion, however, not on the character of only one or two leucocytes, but on the predominating features as presented to us by a number of them. But let it be understood that an examination of the blood is never intended to postpone a diligent search for the tubercle bacillus. (Especially, because, when active tuberculosis has already supervened, and then the ominous polynuclear leucocytosis appears on the scene, it may happen that the nuclear staining qualities by way of defense of the organism become misleadingly normal. The softened contour provoked by the spongioplasmic disintegration of the leucocytes will, however, still be observed.) The disintegration of spongioplasm involving a softened contour of the leucocytes, it would not be unreasonable to conclude with Dr. Holmes that the same constituents of the more stationary tissues share a similar fate. Nor would it need a great stretch of our imagination, considering the lungs, to believe that a softened consistency and contour of the cells of the infundibula and alveoli may favor an ingress of the tubercle bacillus. Such a softened condition of the tissues, which also entails a diminished chemicovital resistance of the body, and frequently is accompanied with subacidity of the urine, I have allowed myself to couple with an increased alkalinity of the system. First, because the deficient basophile constituents, the chromatin and spongioplasm, are made up of

*Read before the Norwegian Medical Club.

*The experienced examiner will have established in his mind a normal standard for comparison, saving the work of taking smears from the healthy for that purpose.

†Medical Record, September 5, 1896; March 13, 1897.

nucleoalbumins; these are of acid reaction, and need phosphoric acid to be maintained. Secondly, because a subacid urine indicates deficiency of acid phosphate of sodium, and consequently a lack of some radical of phosphorus in the system; thirdly, because the nucleoalbumins—which were found in a state of disintegration—are soluble in alkaline fluids *pari passu* with the degree of alkalinity; and, lastly, because of my own clinical observations. Normal acid urine may, however, be met with in the pretuberculous state when the system contains too little calcium to bind the radicals of phosphorus, but such deficiency is compensated for by the presence of the still more alkaline cations, potassium and sodium. These elements, having a greater affinity than calcium for the phosphoric radical, and, as their (acid) phosphate combinations also are more diffusible than the corresponding calcium salts, it is only plausible that such circumstances would allow the phosphoric radical to be excreted in an amount that is out of proportion to what is actually retained in the system. Consequently, the alkaline type is then partly concealed and rendered manifest only by the low staining qualities of the nuclei, the softened protoplasm of the leucocytes, and, at least frequently, by soft and unduly translucent finger-nails.* Apparently, then, an examination of the urine might seem superfluous, yet it is necessary as having a bearing on the treatment. Now, then, if our patient, besides corresponding in the given manner to the blood test, and eventually to the urine test, tells of muscular debility, some loss of weight, increasing laxity of the tissues, and shows a thinning, softening, or high translucency of the nails, possibly also anemia, although the cheeks may be flushed, I should consider my suspicion of the pretuberculous state confirmed, especially if other tangible causes of deterioration can be eliminated. Increase of pulse rate, provoked even by a mere change of position, is ominous. Given a patient of the alkaline type, I should, in brief terms say that, while the alkalinity of his system heretofore may have been sufficiently low to allow a proper metabolism, now, when he is ailing, he may be in grave danger on account of an increased alkalinity. Katabolism, in consequence, is unduly increased, and creates a predisposition to tuberculosis, either by new infection or by the melting down of a preexisting focus. I believe that many a case of tuberculosis may be averted by recognizing the fundamental predisposing condition and instituting a rational method of treatment at an early date. We should especially be alert when we have before us patients between eighteen and twenty-five years of age, as they usually are the ones who present us with a pretuberculous picture, and cures of tuberculosis, developed at those ages, are exceptional. As for treatment, I should advise, besides an unrestricted amount of fresh air, phosphoric acid to maintain a normal acidity of the urine, also hypophosphite of calcium, almost raw, juicy beefsteak, and several raw eggs a day, with the view of promoting the anabolism of nucleoalbumins and fortifying the capsules of possibly preexisting tuberculous foci. Calcium salts are urgently indicated in the cases with acid urine to displace the more alkaline sodium element, as well as for the purpose of binding phosphorus to the system and preventing an excessive excretion of the latter substance. In the anemic cases we may add phosphate or hypophosphite of iron. The chief difficulty besetting our efforts would be the habitual tardiness of the public in seeking medical advice. But the fault lies partly with ourselves. The people, hearing so much of the rapid strides of medical science, expect from us anything short of miracles, and are led into procrastination with their troubles. They think that cure at any time depends only upon getting hold of the right man. It should be a part of our mission to inform the public that the practical outcome of medical achievements to date consists principally in prevention and early detection of disease at a time when cure may yet be possible, and that they must apply early if they shall expect to harvest from our progress. In fact, when disease has gained a strong foothold, we cannot, as a rule, with all our medical science nowadays, accomplish much more than was possible some thousand years ago. But this does not seem to be generally known, and the doctor is frequently unjustly blamed for his futile efforts, when really the late consultation by the patient and the shortcomings of science may be responsible for eventual failure.

[illegible] Century Building.

*Such cases with acid urine must not be confounded with what I previously have designated the "acid type," which is more susceptible to rheumatism than to tuberculosis.

EXAMINATION OF THE FECES OF TWENTY-FIVE STARCH-FED INFANTS, WITH A FEW CLINICAL OBSERVATIONS.

By JOSEPH H. LOPEZ, M.D.,

PHILADELPHIA

MEDICAL DIRECTOR OF CHARITY HOSPITAL; MEDICAL DIRECTOR OF ST. VINCENT'S HOME

Owing to the opinion in the minds of many practitioners that infants cannot digest starch, a chemical examination of the feces was deemed to be a more exact way of determining this than mere clinical observations. Knowing the quantity of starch given the infant and the percentage shown in the stools, an indication would be given as to the quantity digested and absorbed.

With this object in view, twenty-five infants of from two to six months of age were selected for the test, being put under close daily observation and the direct care of competent nurses, who prepared the babies' bottles strictly according to directions. They were fed as follows, five babies being in each class:

Class A, on wheat gruel: a day's feedings contained 1.5 per cent. of starch.

Class B, on arrow root gruel; a day's feedings contained 2.5 per cent. of starch.

Class C, on wheat and barley water; a day's feedings contained 2 per cent. of starch.

Class D, on home modified cow's milk.

Class E, on a highly saccharated food containing converted starch; a day's feedings contained 5 per cent. saccharated matter.

Infants fed on modified cow's milk (Class D) and the saccharated food (Class E) were so fed that results from these ways of feeding could be used for comparison.

Fifteen of the infants (some in each class) had perfectly normal digestion at the time of commencing the present work, while the other ten (some in each class) had suffered for some time from intestinal indigestion and had frequent bowel movements. The dejecta were collected daily for a period of ten days, in wide-mouthed bottles, and conveyed to the laboratory for examination.

It was found that the digestion of the infants of classes A, B, and C (both gastric and intestinal) was not impaired, and that those who suffered previously from intestinal disorders had less frequent bowel movements, increased in weight, and

were of better color and general appearance, indicating improved digestion and assimilation.

The amount of free starch found in the stools of the infants fed under the different classes was as follows:

Class A, .001 gram in 1 gm. feces.
" B, .051 " " " " "
" C, .027 " " " " "

It is interesting to note, by way of comparison, that the digestion of the infants was not impaired by the starch, while irregularities were frequently noted in those fed on home modified cow's milk (Class D), but this was corrected, and under a changed diet they continued to improve. This, however, cannot be said of those fed (also for comparison) on the saccharine diet, as in 50 per cent. of that class (E) gastric and intestinal disturbances were very frequent. The children in this class, after the test, were reduced in weight and appearance. They were eventually put on the same feeding as Class A, when they improved more rapidly.

The data on feces examination at hand were somewhat limited in detail, but the usual chemical methods, as follows, were adopted.

The feces were evaporated to dryness over a water bath. This was placed in a stoppered cylinder of at least 100 c.c capacity, and 50 c.c. of water and 3 c.c of sulphuric acid were added. The entire contents were boiled for three hours in order thoroughly to invert the starch. The water driven off by evaporation was replaced from time to time. After cooling it was filtered into a 100 c.c cylinder, washing the filter with water until 100 c.c. of filtrate were obtained. The glucose in this solution was determined by Fehling's solution, bearing in mind that 100 c.c. Fehling's solution represents .5 gram of pure anhydrous grape sugar, or .45 gram starch.

The experiments thus show that young infants can and do healthfully digest starch.

To Dr. Henry B. Ingle, pathologist to the Charity Hospital, we are indebted for his valuable aid in the above examinations.

SUPPURATING OMENTAL HERNIA: REPORT OF A CASE.*

By FORBES R. McCREERY, M.D.

NEW YORK

This case appears to me sufficiently unusual to merit reporting in detail. J. S., twenty-five years of age, single, born in Ireland, groom. About eight years ago, while at home in Ireland, patient was kicked by a horse in the right lower quadrant of the abdomen. At first he felt little pain, and was about to continue his work when he began to vomit. The abdominal wall became very "hard," but no lump or discoloration appeared. He remained at home one month, then was sent to a hospital. The vomiting and abdominal rigidity persisted, and it was thought that he would die. There was no pain. No operation was done, but his abdomen was blistered and he was bandaged. In about two months he recovered sufficiently to leave the hospital. He was soon able to work, but when he rode horseback he would occasionally have a "stitch in the side near the kidney." His previous health has otherwise been good, and there is no venereal or alcoholic history. Five or six months after the kick a lump appeared in the right inguinal region. This gradually worked lower until it entered the scrotum. At first it would go back when lying down. For five years it has not done so. He never wore a truss. During the late summer and fall of 1905 the patient's health failed so much that his friends feared he was developing either tuberculosis or typhoid fever. He had been exposed to typhoid. Late in November, 1905, I saw and examined him on several occasions. There was nothing to point to either of these diseases, but there was an irregular fever, sometimes absent for several days, again reaching 100° or 101°. No malarial organisms were found. On the right side a large, doughy mass extended from the internal ring to the testicle. Between the latter and the root of the penis was an accumulation of fluid, which I presumed to be pus, and thought to be distinct from the mass in the inguinal canal. The latter appeared slightly reducible, but did not fluctuate. No blood count was made. The kidneys and other organs were apparently normal. My diagnosis was irreducible omental hernia, with a scrotal abscess, distinct from the hernia, and of unknown origin, but possibly tuberculous. On December 2, 1905, with the assistance of Dr. Satterwhite, I operated. On exposing the mass it was found to be surrounded by old, dense cicatricial tissue. In attempting to isolate a sac an opening was made into a cavity containing grumous fluid. I closed the opening with a clamp, but soon made another. A number of small collections of pus were thus opened. The last one came from inside the abdomen, and was so deep that I could not reach the bottom with my finger. The entire mass of omentum seemed to be riddled with abscesses. The pus was odorless, and no tubercles were seen.

The omentum was tied off in sections, the stump secured just inside the internal ring, the sac sewn to the skin, and a cigarette drain passed to the bottom of the large intraabdominal abscess cavity. As much of the mass was then excised as was possible without risking injury to the cord. The scrotal wound was drained, and the intermediate portion of the wound sutured. I was anxious as to the fate of the testicle, as I feared that its blood supply might have been impaired. Recovery was satisfactory. Both wounds discharged profusely, and large masses of slough separated, especially from the scrotal wound. There was considerable induration around the stump of omentum, and I feared further trouble there. About January 1, after the patient had been up and out for a week or more, a residual abscess formed here, which finally opened into the old sinus. The scrotal wound healed about the third week of January. The abdominal sinus closed the first week of February. On February 16 both wounds are normal, the testicle apparently normal, and no sign of recurrence of the hernia. I expect that it will recur and a further operation be required.

The omentum was examined by Dr. George T. Biggs, who reports "interference with nutrition was chiefly responsible for the condition of the omentum in that hernia. There is demonstratable interference with blood supply owing to thickening of vessel walls. Also small foci of calcification in dead tissue. The abscesses are lined by granulation tissue. Cellular exudate is abundant, and there is much increase of fibrous tissue. Smears of the pus failed to show bacteria."

June 23, 1906.—About two weeks ago the patient returned for examination. A small hernia presented at internal ring. This I operated on on June 13. There was no sac, and on dissecting through the cicatrix, the general peritoneal cavity was opened, intestine and omentum presenting; the peritoneum was closed by purse-string suture and the usual operation done with apparent success. The ring admitted two fingers freely.

123 East Fortieth Street.

*Read before the Section on Surgery of the New York Academy of Medicine, May, 1906.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE HUMANITIES AND MEDICINE.

THE present age is one it is the fashion to call eminently practical. Men are striving for "results," by which they mean success in their undertakings and the acquirement of wealth, and this in the shortest possible time. It is the age of the young man, and if "success" is not attained within the Oslerian limit of forty years the man is accounted a failure. The age limit is applied in every walk of life; the laborer, the clerk, the man who would enter the public services must all be young to have any chance of securing a lucrative appointment. The result of this is that the youth must scramble. He must fit himself for his life work in the briefest time possible, else he will be distanced by his competitors. His education can no longer be "solid"—it must be "practical." There is no time for the preliminary training of the mind to put it into shape for work along any lines, but in the acquisition of knowledge only those subjects are to be studied which are supposed to have a direct bearing on the future profession. The result is a race of specialists with the prizes to the "smartest" and the relegation of the man of average abilities to the drudgery of a clerkship with the nightmare of the age limit of efficiency always before him. Superficiality is the logical outcome of this tendency to the worship of youth, and one past the flush of youthful optimism must be possessed of an abiding faith in the common sense of mankind not to despair of the future.

The reaction, however, is bound to come, and, curiously enough, the artificial limitation of human activity established by Osler when he was himself within two years of the period of retirement, yet at the height of his mental activity, has given an impetus to it. Even the young man saw the folly of the assertion that nothing for the good of mankind had ever been accomplished by men over forty years of age and that activity in worldly affairs should cease at the age of sixty; the old man was spurred on by such a challenge to show what there was in him. The author of the assertion, himself, according to the age limit, a nearly worn-out machine, undertook at the age of fifty-eight to infuse new life into the medical school at Oxford, and if he belies himself, as all his friends hope he will, gives promise to accomplish this task before he really becomes useless to the world. In medicine, indeed, the young man has not yet arrived, or at least the old man has not yet departed. The majority of professors, consultants, and directors of laboratories are near or beyond the semi-centennial mark, but they are still furthering the progress of medicine. All the old men are not dead, and the time is coming when the wisdom of age will again receive recognition.

One of the signs of this reaction is apparent in the renewed discussion regarding the value of the humanities in the college curriculum. The opponents of Greek and Latin as obligatory subjects no longer have it all their own way, and the friends of classical learning are taking heart again, daring to assert that there is in the study of the so-called dead languages even something "practical" as well as of disciplinary value to the mind of the young. In the program of the Classical Conference, held at Ann Arbor, Mich., in March of the present year, there was a symposium on the value of the humanities as a preparation for the study of medicine and of engineering, in which the speakers were practically agreed that the professional man was poorly equipped for his life work without a grounding in these but recently despised studies. The medical side of the discussion was taken by Drs. Vaughan, Nancrede, and Hinsdale of the University of Michigan. The argument was that there is no royal road to learning, a trite saying, but, as Dr. Vaughan said, no less true than trite; and that the thinking apparatus of the young needs training in the same measure as the muscles and the gastric cells. As the latter cease to develop and even atrophy when the diet is solely of predigested food, so do the pyramidal cells of the brain fail of their highest development when supplied with like pabulum in high school and college. Exercise is essential, and there is no better exercise for the young brain than the study of the two great languages of antiquity. The close attention which the student must give to the variations in the structure of words, which to his delight he soon perceives indicate variations in the shades of meaning, trains his mind to habits of accuracy and precision which are in later life of inestimable service to him in experimental work and at the bedside. But apart from this essential training of the mind there is a practical side to the study of Latin and Greek, of the latter especially, in medicine which is worthy of attention. Greek is to this day, in its roots, the language of medicine, and no one who is not grounded in this, not dead but living, tongue can follow the progress of our science without infinite pains and a time-wasting thumbing of dictionaries. Four years ago Dr. Welsh of Baltimore delivered the fourth Huxley lecture in London, taking as his subject "Studies in Immunity." It was a most scholarly address, but necessarily, as the theme was new, bristling with strange scientific terms of Greek origin. His hearers were edified, but mystified, and the editor of an Edinburgh medical journal (published in "the modern Athens" of all places!) found it advisable to prepare an abstract, translated, so far as it could be, into the vernacular, so that his readers could grasp its meaning. Vaughan and Nancrede both referred to this handicap under which their students suffered in their ignorance of the language of medicine, saying that they could at once pick out those in the class before which they were lecturing who lacked a fundamental knowledge of Greek, by the blank expression with which they received any new technical term. The progressive medical schools in this country are constantly raising the standard, not only of technical studies, but of preliminary requirements,

and the day is not far distant, we may confidently hope, when a knowledge of Greek and Latin, and especially of Greek, will be required of all who seek admittance to a school of medicine. This will raise the age limit of entrance into medical practice, but it will increase the dignity of medicine as a profession and will make the individual who has entered upon his life work a year or two years later a better practitioner, and will also give him a foundation of solid learning which will add to his enjoyment of life. With reform in the methods of teaching, the extra time devoted to the study of Latin and Greek need not be excessive, and it will not be time wasted, for the linguistic training will make the subsequent acquisition of modern tongues, German and French, a light matter and a recreation in leisure hours.

FEMALE GENITAL ACTIVITY.

There has been much speculation as to what organ constitutes the basis of genital activity in the female and the usual manner of estimating the relative value of the different portions of the tract consisted in noting the effect produced on the patient by the removal of any one part. Thus the greater the mental and physical disturbance the greater the value of the part in question, and therefore the greater the importance of conservative treatment in disease of the same. It is a common belief that the ovaries exert the most important bearing on the physiology of the generative organs and a complete oöphorectomy before the menopause is consequently avoided as much as possible. W. Blair Bell (*Liverpool Medico-Chirurgical Journal,* July, 1906) thinks, however, that the evidence in favor of this theory is by no means conclusive, and that there are other factors which play an equally, if not more important part in the process. The uterus, he claims, must be credited with a higher function than merely affording a resting place for the reception and development of the impregnated ovum. The structure of this organ, he points out, is largely that of a secreting gland and to the (hypothetical) secretion to which it gives rise he applies the term "uterin."

It has been noted that patients in whom a vaginal hysterectomy has been done before the menopause without removal of the ovaries, go through a definite climacteric period, with all the usual symptoms. On the other hand, it is a matter of perhaps even more common observation that menstruation continues after complete oöphorectomy, which, for want of a better explanation, is attributed to an incomplete extirpation of the organs or "persistence of habit." Another clinical fact accepted by many observers is the continuance of menstruation after supravaginal hysterectomy, when a portion of the endometrium has been left behind. Neither do the ovaries atrophy in such cases, as they do when the uterus is entirely removed. All these facts are gathered together in support of the writer's theory that the internal secretion of the uterus is the important element in the sexual life of the woman, and that the menopause is due to atrophy of the uterus as a primary process with destruction of the secreting glands. That this is uninfluenced by the ovaries is shown by the fact that pregnancy has been noted after the menopause has been apparently fully established.

All this theorizing must, of course, be supported by clinical investigation, which is now being carried on by Dr. Bell. Uterine extract has also been administered clinically in a number of cases, but no definite conclusions have been obtained as to its action. The suggestions submitted by the writer of the article referred to are of considerable interest, and although there are several gaps still to be filled, his theory tends to explain many things in the physiology of genital activity which have thus far been insufficiently accounted for.

THE EFFECT OF TEMPERATURE CHANGES ON THE STOMACH.

Notwithstanding the extended attention which has been given to the subject, there is still a widespread difference of opinion between the physiologists and clinicians with regard to the matter of gastric sensation. Clinicians have long agreed upon a class of gastric disturbances which have been included under the general title of "neuroses." These seem to have little interest for the physiologist, however, and we find but slight attention given to the question whether the normal stomach can give rise to the sensation of either pressure or pain. As for the appreciation of heat or cold, this is absolutely denied to the stomach by the physiological investigator. This fact seems to be apparently confirmed by observations made during laparotomies which were carried out under local anesthesia, but, as Neumann points out in a recent article (*Wiener klinische Wochenschrift,* No. 30, 1906), no account was taken in these cases of the fact that the organ under trial was exposed to the air, and it has been shown conclusively that such exposure is accompanied by a well-marked anesthetic effect. In a further attempt to prove that the normal stomach could appreciate the differences between heat and cold, Neumann made use of a double tube, through which fluids of different temperatures were introduced into the stomach. It was found that the person on whom the experiment was tried could clearly appreciate the changes in the temperature of the fluid, and much more quickly, moreover, than if this was swallowed, because the influence of the esophagus could thus be eliminated. The same effect was obtained by the introduction of warm and cold water through a gastric fistula.

A knowledge of these conditions is of more than theoretical interest, for it will help us to recognize certain variations from the normal and to employ this knowledge perhaps in the differential diagnosis of certain gastric diseases. The most frequent deviation from the normal is to be found in hysteria, where there may be complete gastric anesthesia or a peculiar paradoxical condition in which cold gives rise to a feeling of heat, and *vice versa.* In another class of cases there is marked hyperesthesia and even slight degrees of heat or cold give rise to painful sensations. Neumann suggests that a practical application of this knowledge can be made in the treatment of such cases by regulating the temperature of the lavage water, and thus producing anesthesia of the mucosa. It may also be possible to employ this sign, gastric hyperesthesia, in the differential diagnosis of organic from functional diseases of the stomach, but that is matter for future observation.

A Pioneer Medical Man.

Probably the first, or at any rate one of the first members of the medical profession to land on the shores of this continent, was Dr. Diego Alvarez Chanca. This worthy, who held the position of physician in ordinary to the King and Queen of Castile and Aragon, came with Christopher Columbus on his second voyage of discovery in the year 1493. Dr. A. M. Fernandez de Ybarra, writing in *Janus* for August, gives an interesting account of this forgotten physician, with lengthy quotations from a letter which Dr. Chanca sent to the Municipal Council of his native city Seville, containing the first written description of the flora, the fauna, the ethnology, and the anthropology of America. Dr. Chanca is said to have saved the life of Christopher Columbus by his medical skill on more than one occasion, and on his return to Spain in 1506 published a treatise on the treatment of pleurisy. He was also the author of several other medical works. In the letter to the Municipal Council of Seville, Dr. Chanca writes concerning the West Indies: "The country is very remarkable and contains a vast number of large rivers and an extensive chain of mountains, with broad, open valleys, and the mountains are very high. It does not look as if the grass is ever out throughout the whole year. I do not think that they have any winter here, for at Christmas we found many bird nests, some containing the young birds and the others the eggs. No four-footed animal has ever been seen in this, nor in any of the other islands, except some dogs of various colors, as in our own country, but in shape and size like lapdogs. Of wild, ferocious beasts there were none. . . . . There is a vast number of trees, which yield surprisingly fine turpentine. Tar is found in abundance, of very good quality, too. We discovered trees which, in my opinion, bear nutmegs, but at present without fruit on them, and I say so because the bark tastes and smells like nutmegs. I saw one root of ginger which an Indian was carrying around his neck. There is aloes, too, though not of the same kind that we are acquainted with in Spain, but nevertheless a species of aloes that we doctors use. A sort of cinnamon has likewise been found, but, to speak truthfully, it is not of such a fine quality as the one we have in Spain; or, perhaps, this is so because now it is not the proper season to gather it, or the soil in which it was found growing in this vicinity is not well adapted." A fairly full description of the natives of the islands visited is given, with notes on climate. Altogether, the account is in a high degree instructive and goes to show that the Spaniards at the time Dr. Chanca wrote his narrative were the most civilized and cultured race of the world. Dr. Ybarra has done good service in unearthing the records of this once distinguished but now forgotten worthy.

The Nutritive Value of Fats Injected Subcutaneously.

In the Medical Record of August 25 we referred to this subject, pointing out that the experiments made by Winternitz with the object of testing the nutritive value of fat administered to animals subcutaneously showed that fats thus injected were of practically no therapeutic value. In the *American Journal of Physiology* for September, 1905, Drs. Yandell Henderson and Edward Francis Crofutt of the Physiological Laboratory of the Yale Medical School described a series of investigations made by them in regard to the subcutaneous injection of oil into animals. Dogs and cats were used for the purpose of experimentation by these investigators. The oil used was cottonseed oil, as by reason of its bright yellow color it is easily distinguishable from dog fat, it remains fluid at ordinary temperatures, it possesses a high iodine number, and it reacts characteristically and delicately to Halpen's test. After somewhat protracted and careful investigations Drs. Henderson and Crofutt reached the following conclusions: Oil injected hypodermically is readily and widely distributed through the subcutaneous spaces. Such oil is not, however, transformed *in situ* into adipose tissue. In fact, the tissues react to its presence as to any nonirritating foreign substance. In the blood, lymph, and milk it does not appear in detachable amounts. While the oil is ultimately absorbed and utilized in metabolism, the process is one of extreme slowness. Oil injections in any moderate amount are therefore practically without nutritive value. The conclusions of Winternitz were in accord with these, though he appears not to have known of the earlier experiments of the American observers; at least he ignores them in the article from which we quoted in a former issue. Subcutaneous feeding was employed in 1869 by Menzel, and King, Whittaker, and others have also employed this method, but without any definite demonstration that it was of value as a nutritive agent; von Leube, however, was of the opinion that injections of oil were of practical value in nourishing patients in such conditions as rendered it necessary, as in the failure of rectal enemata. Henderson and Crofutt think that von Leube misinterpreted the results of his experiments and accepted as true adipose tissue formed from the butter injected, what was really merely connective tissue impregnated with butter.

News of the Week.

Washington State Medical Association.—Dr. G. W. Libby of Spokane, president of the association, in his opening address at the annual convention recently held in Spokane, denounced the present methods of caring for the insane, which he declared to be crude, inadequate, and barbarous, and called upon his fellow practitioners to urge the members of the State Legislature to amend the Medical Practice Act so as properly to define the term "practising medicine." There was a large attendance of physicians, and two special guests were Hon. Albert E. Mead, Governor of Washington, and Mayor Floyd L. Daggett of Spokane, who both made brief addresses. Papers were read on the following subjects: Discussion on "Pleurisy," led by Dr. William Douglass of Tacoma; "Diagnosis and Prognosis of Pleuritic Effusions," by Dr. M. C. Robins of Spokane; "Clinical Course and Treatment," by Dr. J. Sutherland of Spokane; discussion, led by Dr. William Shannon of Seattle; "Angina Pectoris, Pseudoangina and Palpitation," by Dr. J. W. Bailey of Seattle; "Bradycardia, Tachycardia, Syndrome, and Arrhythmia," by Dr. William House of Portland, Ore.; discussion, led by Dr. H. W. Dewey of Tacoma; "Treatment of Organic Heart Lesions," Dr. H. W. Howard of Prosser, Wash.; "Osteomyelitis, Classification, Etiology, and Pathology," Dr. H. W. Reed of Seattle; "Clinical Course and Differential Diagnosis," Dr. W. N. Keller of Tacoma; "Treatment," Dr. A. A. Matthews of Spokane; discussion, led by Dr. E. M. Brown of

Tacoma; "Headache, Significance and Treatment," Dr. S. Sargentish of Tacoma. The following officers were elected for the coming year: *President,* Dr. J. H. Lyons of Seattle; *Vice-President,* Dr. E. L. Kimball of Spokane; *Second Vice-President,* Dr. E. E. Shaw of Tacoma; *Secretary,* Dr. C. H. Thompson of Seattle; *Treasurer,* Dr. G. H. Greer of Tacoma. The meetings will be held as follows: Seattle, 1907; Tacoma, 1908; Spokane, 1909.

Crusade Against Phthisis in the Chicago Public Schools.—As a result of the conference between members of the Chicago Board of Education and a committee from the Chicago Tuberculosis Institute, the following innovations are likely to be introduced into the school system: The establishment in every school building of a dispensary room for the examination of suspects and the treatment of cases; separation of the tuberculous pupils into two classes—contagious and non-contagious; the organization of a corps of visiting nurses, to visit the homes of suspects, dress open wounds, and report conditions to the board. It was pointed out that such a corps of nurses would render valuable service in reducing truancy by investigating all cases of illness and returning the sufferers from minor complaints to the school with all possible speed. Regular inspection of all schools at stated periods by medical inspectors; establishment of a system of surveillance for suspects and those suffering with the disease, with a view to excluding the victims the moment their presence in the classroom becomes a menace to the other children; the providing of special educational facilities for the victims of tuberculosis in its contagious forms; the segregation of all children suffering from tuberculosis of the bones.

Dedication of the New Harvard Medical School.—The new buildings of the Harvard Medical School, erected in the Fenway at a cost of $5,000,000, were dedicated on Tuesday of this week in the presence of a large number of physicians and other scientific men and men prominent in public life. The program consisted of prayer by the Rev. Dr. George A. Gordon, an address by Dr. John Collins Warren, Mosely Professor of Surgery at Harvard; presentation of the buildings by Charles Allerton Coolidge, representing the architects; a brief address of acceptance by President Eliot, and addresses by Dean W. L. Richardson of the Harvard Medical School, Dr. Thomas Dwight, Parkman Professor of Anatomy at Harvard; Dr. Frederick Cheever Shattuck, Jackson Professor of Clinical Medicine at Harvard, and the dedication of the buildings by President Eliot. On Wednesday there was an academic session at Sanders Theater, at which degrees were conferred upon a number of physicians and surgeons.

A Section on Pathology.—The proposal has been made in Ohio to organize a special section of the State Association for the study of pathology. One of the objects to be accomplished will be the establishing of a uniform technique in carrying out tests and other pathological work so that statistics gathered from different sections of the State may form a reliable basis for deductions.

Birth Rate in Paris.—The birth rate of this city continues to shrink, according to the latest report of the health authorities. There have been fewer births this year than last in every arrondissement except two, including one where the population is growing at the rate of 3,000 annually. One shows 400 fewer births than two years ago.

A Case of Suspected Typhus Fever.—The White Star liner *Cretic,* which arrived at Quarantine on September 18, was not allowed to dock until the following day, owing to the fact that a child had died during the voyage of what the ship's surgeon suspected might be typhus fever. The steerage passengers who had occupied the same compartment as the patient were removed to Hoffman Island for observation, and the ship was fumigated.

Civil Service Examinations.—The State Civil Service Commission will hold examinations on October 12, 1906, for the positions of assistant bacteriologist, $1,500, and assistant sanitary chemist, $720, in the State Department of Health; pupil nurse, Erie County Hospital; trained nurse, Westchester County Hospital. The last day for filing applications for these positions is October 8. Full information and application forms for any of these examinations may be obtained by addressing Mr. Charles S. Fowler, the Chief Examiner of the commission, at Albany.

Catheter Scales.—The American Surgical Trade Association announces that at a meeting held in Philadelphia, June, 1906, it was resolved that in order to secure uniformity, after January 1, 1907, the trade adopt the French scale for all catheters, bougies and sounds. Physicians are requested after that date to use only the French scale in ordering such articles.

Illness of the Pope's Physician.—Dr. Lapponi, physician to the Pope, is reported to be seriously ill, and it is stated that Dr. Mazzoni has made the diagnosis of inoperable cancer of the stomach.

Unveiling of the Semmelweis Monument.—On September 30 the monument bearing the statue of I. P. Semmelweis, which has been erected in Budapest as the result of subscriptions from all the civilized countries, is to be unveiled. The movement to commemorate the work of this benefactor of womankind was begun in 1891, when the medical faculty of the University of Budapest caused his body to be brought back to his native soil and to be reburied in state. A suitable monument was erected over the grave and a memorial tablet was placed on the house in which Semmelweis was born. The present statue has been placed in the most beautiful public park of the city, the Elizabethplatz.

Memorial of Major Walter Reed, U. S. A.—The executive committee having charge of the collection of the sum of $25,000, the income of which is to be paid to the widow of the late Major Walter Reed, U. S. A., and the principal to be reserved for a permanent memorial in the city of Washington in commemoration of his services to mankind in investigating the transmission of yellow fever, announces that the amount now subscribed is somewhat over $16,000. To complete the fund and cover incidental expenses, including a marble bust of Major Reed, $10,000 is needed. The desire of the committee is to close the subscription before the end of this month. Communications should be addressed to the secretary, Gen. Calvin De Witt, U. S. A., No. 1707 Twenty-first street N. W., Washington, D. C.

Health of the City of Chicago.—To the unseasonably high temperature and humidity is attributed a slight increase in the city's mortality. This increase occurred largely in the cases of persons over sixty years old, the victims of chronic diseases. There were fewer deaths under five years of age than in other compared weeks. There is a serious increase of typhoid fever in the city, due, it is be-

lieved, to milk contaminated with the poison by the use of polluted water in washing cans and other utensils. The department has closed one infected milk depot and excluded milk from two dairies pending the bacteriological examination of their water supplies. Upward of sixty cases of the disease have been located and the premises are being inspected with a view to the correction of any sanitary defects found to exist, as well as to proper isolation of the cases, disinfection, and other measures of restriction.

Meat Condemned.—The Health Department inspectors at the Union Stock Yards, Chicago, condemned and destroyed last week 95,608 pounds of meats, 11,545 pounds of which had been passed by other inspectors. The fish inspector condemned 25,950 pounds of fish and about 14,000 pounds of other food stuffs.

The Dallas (Tex.) College of Physicians and Surgeons will on October 21 begin its first term in the new building recently completed for the institution.

India's Death Rate from Wild Beasts.—Statistics published in India show that in 1904 there were killed in that country by snakes and wild beasts 24,034 persons—21,880 by snake bites, 796 by tigers, 399 by leopards, and the rest by other animals. The number of cattle killed was 98,582. The other side of the account shows that 65,146 snakes and 16,121 wild animals were killed, for which rewards of £7,313 were paid.

American Hospital in Constantinople Burned.—The new American Hospital and Training School for Nurses recently established in Constantinople by Dr. Thomas S. Carrington of this city, was burned to the ground on the eve of its formal opening, at a loss of $10,000, partly covered by insurance. The Board of Directors proposes to rebuild at once, and plans for raising the funds are under way.

St. Gregory's Hospital Under New Management.—The financial management of this institution has been taken over by the Volunteers of America. Ballington Booth, who is commander of the organization, states that it will have equal voice with St. Gregory's Society, consisting of fifty directors, and that all the requirements of the State Board of Charities have now been complied with, so that the managers of the hospital expect to have a charter granted when they make application for it next month.

Medical Society of Virginia.—The thirty-seventh annual meeting of this society will be held in the hall of the University of Virginia, Charlottesville, October 9 to 12, 1906. The president of the society is Dr. Lomax Gwathmey of Norfolk, and the corresponding secretary is Dr. John F. Winn of Richmond.

Berkshire, Mass., Medical Society.—The annual outing of this society was held at the Russell villa, on the south shore of Pontoosuc Lake, on August 30, under the presidency of Dr. Alfreda B. Withington of Pittsfield. About forty members were in attendance. Dr. George W. Gray of Boston read a paper on gallstones and their treatment.

New Medical Society.—A district medical society was organized at Albany, Mo., on September 11 by the physicians of Harrison, Gentry, Worth, and De Kalb counties. The following officers were elected: *President,* Dr. A. H. Vandivert of Bethany; *Vice-Presidents,* Drs. Gwynn of Clarksdale, Whitely of Albany, and M. H. Eads of New Hampton; *Secretary,* Dr. A. C. Long of Denver; *Treasurer,* Dr. J. W. Conard of Albany.

American Institute of Homeopathy.—At the recent meeting of this organization, held at Atlantic City, officers were elected as follows: *President,* Dr. E. D. Hooker of Hartford, Conn.; *Secretary,* Dr. Frank Kraft of Cleveland; *Treasurer,* Dr. T. Franklin Smith of New York.

Oakland County (Mich.) Medical Society.—The following were elected as officers at the annual meeting of this society, held in Pontiac on September 12: *President,* Dr. Moore; *Vice-President,* Dr. McKinnon; *Secretary and Treasurer,* Dr. C. D. Morris.

Washington Association for the Prevention and Relief of Tuberculosis.—The following have been elected officers of this association: *President,* Dr. C. H. Smith of Seattle; *Vice-President,* Dr. E. E. Heg of Seattle; *Second Vice-President,* Dr. Wilson Johnston of Colfax, Wash.; *Secretary,* Dr. W. R. M. Kellogg of Spokane; *Treasurer,* G. S. Brooke.

Obituary Notes.—Dr. George F. Lightfoot of Arlington, N. J., died on September 18, in St. Michael's Hospital, Newark, at the age of forty-one years. He was a graduate of the New York Homeopathic Medical College in the class of 1891 and had practised in Arlington for many years.

Dr. E. A. Wheeler of Brooklyn died suddenly on September 18, at the age of fifty-six years. He was born in Moodus, Conn., and received his medical degree from Bellevue Hospital Medical College.

Dr. S. G. C. Pinckney of Atlanta, Ga., died at Grand View, N. Y., on September 20. Dr. Pinckney was born at Grand View in 1869 and was graduated from the New York College of Physicians and Surgeons in 1893. After practising for two years in New York City he moved to Atlanta, Ga., where he made a specialty of nervous diseases.

Dr. Walter E. Fisher of New York City died from apoplexy on September 18 while hunting in the Austerlitz woods near Chatham, N. Y. Dr. Fisher was forty-five years old and had interested himself especially in nervous diseases.

Dr. C. A. Ruggles of Stockton, Cal., died on September 11, at the age of seventy-seven years. He was a member of the State Board of Health for fifteen years and served for four years as its president. While vice-president of the National Conference of State Boards of Health he was selected to make a special report on leprosy, to do which he visited Molokai. He had practised in Stockton for thirty-seven years.

Dr. William Oates of Bridgeport, O., died at the North Wheeling, W. Va., Hospital on September 19, of typhoid fever. He was born in Windsor Locks, Conn., and was thirty-four years of age.

Dr. J. D. Seymour of Whately, Mass., died on September 10, at Brattleboro, Vt., of apoplexy. Dr. Seymour was born in Greenfield fifty-six years ago and received his medical education at Harvard Medical School. He had practised in Whately since 1878.

Dr. Sherman T. Brown of Denver, Col., died on September 15, of appendicitis, at the age of thirty-eight years. Dr. Brown was operating when the first symptoms of his illness appeared, and he finished his work only at the cost of much personal suffering. He was operated on the same night, but died several days later of pneumonia. He received his medical degree from the Gross Medical School in 1894 and had practised in Denver since that time.

Dr. William K. Otis of this city died on September 22, of pneumonia. He was a son of the late Dr. Fessenden Otis and was well known as a genito-urinary surgeon. He was graduated from the College of Physicians and Surgeons in 1885 and had held many clinical and teaching positions.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LUNACY COMMISSIONERS' REPORT, INCREASE CAUSES, ETC.—A HEAT WAVE, EFFECT ON HEALTH—LONDON TRAFFIC, REPORT ON NOISES, VIBRATION, ETC.—DONATIONS TO HOSPITALS—HUXLEY LECTURE—WORKMEN'S SANATORIUM.

LONDON, September 7, 1906.

THE sixtieth annual report of the Commissioners in Lunacy was issued yesterday, and contains, as usual, a mass of statistics bearing on the management of asylums and the prevalence of the disease. The figures offer a feeble gleam of satisfaction from the fact that the increase in lunacy last year was less than in recent periods, although still considerable. The number of certified lunatics on January 1 was 121,979, which is 2,150 above the number on the same day in 1905, 2,630 in 1904, 3,235 in 1903, 3,251 in 1902. The annual average increase for the ten years ending December 31, 1905, was 2,554; for the five years to the same date, 2,807. Thus, last year's increase was less by 404 than the annual average of the decenium, and 657 less than that of the quinquenium. Turning back to 1859, we find the certified insane then numbered 36,762, and these figures have risen to 121,979 now, or rate of increase equal to 231.8 per cent. During that interval the general population has increased at the rate of 75.4 per cent. The increase of lunatics has been going on year by year, but not in equal proportions. The number on the first day of the year stood to the estimated population in the proportion of 1 to 283, or 35.31 per 10,000—an increase of 0.62 on the ratio for last year, contrasting with an actual numerical growth of 1.79 per cent. In 1897 this ratio was 31.89, so that in the decade it increased 10.72 per cent., the proportion of insane rising from 1 in 314 to 1 in 282. The actual increase of population in this period is recorded as 10.8 per cent. A table of the assigned causes of insanity in all the cases during the five years, 1900 to 1904, shows how great is the predominance of intemperance, being 22.5 per cent. of the males and 9.2 per cent. of the females. Other assigned causes are domestic trouble, pecuniary difficulties, overwork and worry, religious excitement, love affairs, fright and shock; but none of these approach the percentage due to drink, the figures varying between 0.5 and 8 per cent. Hereditary influence was ascertained in 19.2 per cent. of male and 25 per cent. of female cases.

How far an attack of insanity is related to the occupation of the patient is a subject the Commissioners consider deserving careful attention, but the material at their disposal permits an approach only to the fringe of the question. They offer as a contribution an examination of the returns of four asylums receiving patients mainly from agricultural communities. Comparing them with the general returns, they say in these districts the causes above the mean were religious excitement, sexual excess, sunstroke, old age, privation, heredity, and congenital defects; causes below the mean were domestic trouble, adverse circumstances, mental anxiety, shock, fright, and intemperance. This result they consider bears out what might have been assumed as to rural communities, but I think many will be disposed to disallow the assumption, at any rate, as to some of the causes.

Some account is given of extension of accommodation going on, and more required, and a regret expressed that the deficiency mentioned in the previous report has not yet been made up.

Finally, the Commissioners regret that no addition has been made to their number to enable them to cope with their ever-increasing duties.

We have had our little "heat wave," and some invalids have suffered rather severely. I qualify it as little, for we do not get such great heats as you experience in New York, nor do they last so long. Still, a sudden rise of the thermometer to 90 after a prolonged stay in the 70's is apt to produce collapse in the weak, and even the robust feel it severely when they persist, as so many do, in their usual habits as to food and drink, and refuse to adapt their clothing to the changed conditions. There have, as a matter of fact, been numerous cases of "heat-stroke" and a few fatalities—one of suicide, if not more. On Tuesday evening a welcome rain set in and brought cool breezes. In London above one inch fell during the night, and so we seem to have wound up one of the finest and most delightful summers for many years past; and, on the whole, the public health has been good. Summer diarrhea has, of course, been talked about in places, but I think it has been less prevalent generally than usual.

The report of the Select Committee on Cabs and Motor-Omnibuses was issued on Wednesday. The Committee take a broad view as to the vibrations, the noise and other forms of nuisance caused by the new motors. A person taking a house on a main line of metropolitan traffic must be prepared for the noise, etc. But one who, for health or other reasons, takes a house outside, has just reason to complain when the main traffic is diverted to pass his door for the profit of a private enterprise. Heavy, slow-moving traffic crossing London should be restricted to certain routes and certain hours, and not permitted to take short cuts through residential districts or narrow thoroughfares. These views will be heartily indorsed by many who have suffered from the noise and vibration of traction engines passing through streets at all hours of the night and destroying the hope of sleep for many an invalid or weary worker. The Committee say improvements might be enforced which would reduce the noise of the machinery itself to a low hum, and other improvements would lessen vibration. They recommend licensing of vehicles and of routes and stopping places; also, they would increase the powers of the police to regulate the traffic, though the powers possessed have not so far been fully employed.

Lord Iveagh has given £1,000, and Mr. H. T. Phillips £200 to the ophthalmic department of the London Hospital. A second anonymous sum of £1,000 has been sent to St. Mary's Hospital towards the Clarence Memorial wing.

Professor Pawloff of St. Petersburg has agreed to give the sixth biennial Huxley lecture at Charing Cross Hospital on October 1. His subject will be "Recent Advances in Science and Their Bearing on Medicine and Surgery."

Considerable progress is being made with the building of the sanatorium for tuberculous workers. The project, of which I have sent you some particulars, is to treat workers at the early stage. The post-office employees undertake to maintain 25 beds, the Hospital Sunday Fund 5, the Club and Institute Union 2, the Royal Oak Society 7, the Foresters, the Railway Servants' Society, each 1, and the Teachers' Union, 2. Thus, the building once completed, will, it is calculated, be self-supporting. But to secure this result rigid economy will have to be practised, and the out-door work of the patients will contribute somewhat to the table, the kitchen garden affording agreeable employment for some. Some novelties will be tried in the building. No brickwork is to be used, but tiles and steel supports employed, it is believed, will be found effective. The interior is, of course, designed to give, as far as possible, no lodgment to dust.

OUR LETTER FROM CONSTANTINOPLE.

(From Our Special Correspondent.)

SYPHILIS AND VENEREAL DISEASES IN THE PROVINCES—FREE CIRCUMCISION—TURKISH COFFEE—THE PLAGUE AT TREBIZOND.

CONSTANTINOPLE, August 31, 1906.

IN the central districts of the vilayet (province) of Sivas syphilis and other venereal diseases are raging in rather alarming proportions. This is due principally to the great ignorance of the rural population, who take recourse to all sorts of doubtful domestic remedies, and almost never call for medical assistance. Whole families are in this way infected, and the loathsome maladies are propagated with ever-increasing intensity. The lack of medical men is also sadly felt in certain places, thus increasing the danger to which the public health is being exposed. The sanitary inspector of the province has therefore asked the central authorities in the Turkish metropolis quickly to adopt all the necessary measures, in order to check the spread of the contagion and to treat effectively the infected cases. The Ottoman Government has already taken the required precautions and measures with regard to these maladies reigning in other vilayets, and it is proposed to do the same for Sivas. Special hospitals will be constructed, of sufficiently large dimensions to admit and isolate as many sufferers as possible. It is intended to give the latter gratuitous treatment. It is also intended to appoint two medical specialists at a reasonable salary, whose duty it will be to visit the contaminated localities and give treatment to all seeking medical assistance. A sum will be granted them to cover the expenses of traveling about, as well as the expenses of drugs and instruments. It has been also decided to construct a hospital at Sivas itself, with fifty beds. The authorities of the vilayet will have themselves to find the necessary funds.

On September 1 the Padishah Abdul Hamid celebrates the thirtieth anniversary of his accession to the throne of the Ottoman Sultans. One of the most curious religious ceremonies that takes place on that day is the gratuitous circumcision of Moslem children and youths at the expense of the Padishah's private purse. The age prescribed by the Koran for circumcision is the completion of the thirteenth year. This, however, varies considerably, according

to circumstances. Frequently youths of twenty years of age, and even above, present themselves for this religious operation. The Sultan's Hamidié Hospital is then overfilled with fathers and their offspring, who patiently wait for their turn. The little surgical performance goes on day after day for a whole week and more. Thousands of children are being circumcised daily. The operation done, every one receives a basket of sweetmeats in the name of the Sultan, and also other presents of different kinds. A number of wards and pavilions of the above-mentioned hospital have already been arranged and equipped for the purpose.

It is generally believed that Turkey is very rich in coffee and exports the latter in much larger quantities than it receives it from other countries. Now, this is not the case. The annual export amounts to 4,853,423 kilograms, whereas the import of that product, so much valued in the Orient, is about double the amount, *i.e.* 9,350,458 kilograms. Brazil is the principal country whence coffee is imported in large quantities. Real good Moka of Yemen is at present comparatively rare. This is due to a disease of the grain which has begun to manifest itself of late in alarming proportions. In consequence of this disease, which has not yet been properly investigated, the interior of the coffee grains becomes foul and soft, and the exterior black. A short time ago several coffee branches with diseased grains were sent to Constantinople for purposes of analysis and investigation. The Ministry of Agriculture is going to make the necessary examination, and intends doing all in its power to prevent further destruction of the valuable Yemen coffee. In Turkey itself coffee is very frequently mixed with other ingredients, sometimes harmless, sometimes deleterious to health. Of the ingredients which are rather of a useful nature, one is the powder of dried figs. This admixture is also in great vogue in Austria, in some parts of Germany, in Roumania, and in Servia. The powder is added to coffee in the proportion of one to three. The beverage so prepared is of a deeper color, loses much of the exciting properties of pure coffee, and possesses even considerable nutritive value. In this country, indeed, people often use simple fig powder as a drink.

Several cases of plague have occurred in Trebizond, on the Black Sea. The last news from that place is that this week no fatal cases have manifested themselves. The superior sanitary council of Constantinople has, therefore, somewhat altered its previous injunctions of a very strict nature. Steamers will be now allowed to land at, and to leave, Trebizond harbor, but only for the purpose of receiving and disembarking cargo. No passengers will be allowed to leave the place and none to land. Sailors will be strictly forbidden to quit their vessels.

Progress of Medical Science.

Boston Medical and Surgical Journal, September 13, 1906

Artificial Nauheim Baths in Chronic Heart Disease.—P. K. Brown states that the cases particularly fitted for Nauheim treatment are those in which the heart muscle acts insufficiently either from dilatation, poor blood supply due to anemia, or arteriosclerosis with changes in the muscle, acute or chronic, tobacco poisoning, and moderate fatty changes. Twelve clinical histories are given. Concerning the use of resisted movements in connection with the baths, the author states that he does not consider them essential, and they are not in his view as lasting in their effects as is the bath. They are often very tiresome to the patient, and are in bad cases actually dangerous unless given by someone who fully understands their purpose and makes a careful study of each individual case. Brown prefers to give them an hour or two before the bath; but if this is not possible, it is better to wait some hours after the bath. As regards massage in connection with treatment, he has found it of advantage when the temperature of the water was below 90° in securing a prompt reaction from the sensation of cold which patients with sensitive skins frequently have as the result of cutaneous stimulation. It is necessary that the patient be placed in a warm room and have his extremities well rubbed if there be much discomfort from the sensation of cold. The author describes in full his experience in the preparation of the artificial Nauheim salts. In his judgment the use of these salts at home under careful supervision of the physician gives just as good results as at Nauheim, and the régime is far more convenient and agreeable to the patient.

Systemic Infection Through the Tonsils.—J. L. Goodale notes that there occurs at the tonsillar surfaces emigration of phagocytic leucocytes, penetration of inorganic, or at least non-living matter, and the arrest of the lacunar bacteria at the lining mucous membrane. It seems probable, also, that the buccal secretions compose largely the fluid carried from the tonsils to the adjacent lymph glands. Obviously bacterial products may be taken up in the same manner. All that is necessary is that a given toxin shall come in contact with the epithelium of a lacuna. The result depends on the intensity and character of the toxin and the duration of contact. The toxemia is therefore acute or chronic. As an example of the former we have the ordinary acute tonsillitis. If this subsides, leaving the inflammatory plugs in the lacunæ, we may have them undergo degeneration and retention. Such conditions are often overlooked, because the tonsil is not thoroughly explored. These changes with consequent absorption of the products of decomposition may occur even in the small atrophied tonsils. Ultimately it is possible to produce in this way systemic infection eventuating in either tuberculosis or infectious arthritis. It is not necessary to assume that the organism of this disease entering through the tonsil should cause local reaction in this organ. It would seem probable that a condition of faulty drainage from the crypts would afford a given infectious organism better opportunity to remain in contact with the lacunar epithelium, possibly multiplying upon the detritus there found, and upon a favorable opportunity of becoming drawn into the tonsillar tissue with the current of buccal fluid.

New York Medical Journal, September 15, 1906

Ocular Inefficiency and Some of Its Results.—E. M. Alger comments on the difference of opinion on the "eyestrain" question and the conflicting clincal reports which appear from time to time. This is due partly to lack of definition in terms. The problem of eyestrain is an individual muscular problem and the determination of the exact point where the physiological merges into the pathological depends not only on a proper estimate of ocular defects and individual capacity for compensation, but also on careful consideration of a number of variable factors, such as age, general health, and the conditions under which the eyes are constantly used. Aside from the fatigue arising from the constant use of overtasked muscles, there are several phenomena which seem to be the central results of strain. Then in addition there is a steady mental strain due to failing ocular compensation. Ocular headaches may be either accommodative or muscular. As a rule an ocular cause may be suspected in headaches which occur regularly and get worse in the afternoon, are increased by close work, and are relieved by rest and holidays. Chorea is another malady in which a dependence on ocular insufficiency has been suspected and an examination of the eyes is always advisable in persistent cases. So also in neurasthenia we may frequently find the exciting factor to be the overuse of eyes whose compensation is strained. That this factor exists in many cases of migraine is generally admitted. In such cases optical errors are often family traits, and they cause not only accommodative and muscular asthenopia but a mental exhaustion as well, from the constant necessity of interpreting disordered retinal images

The Diseased Tonsil as a Causal Factor in Respiratory and Gastric Disease.—A. R. Solenberger firmly believes that diseased conditions of the tonsil in adult life are the cause of many respiratory and gastric disturbances. These conditions are often overlooked, but if one will thoroughly explore the tonsil and surrounding parts one will find that it is bound down by adhesions, the caliber of the crypts is distorted, and material is imprisoned in their deeper recesses which undergoes decomposition and furnishes pabulum for bacterial growth whereby the resistance power of the system is lessened. The insertion of a probe into the deeper pockets of such tonsils is often followed by the escape of pus or grumous fluid which is extremely offensive. Tonsillar symptoms are not always in evidence in such cases except that such organs are always subject to periodical attacks of inflammation, each one of which leaves the organ still more crippled and more potential for harm. Not alone on the respiratory and digestive tracts are these deleterious effects exerted. The middle ear is often affected through the Eustachian tubes. In the air and food tubes nature endeavors to interpose a barrier to the absorption of bacterial products by a change in the character of the epithelium lining the respective channels, but this barrier is often surmounted. The latter portion of the paper is taken up with the question of the removal of such offending tonsils as those described. Every vestige of diseased tissue should be eradicated.

The Kidney of Pregnancy.—D. W. Prentiss refers to the recent voluminous literature on this subject and divides the cases into the following classes: (1) Physiological kidney of pregnancy or mild passive congestion; (2) severe passive congestion with cloudy swelling, and (3) advanced parenchymatous nephritis. The results of our analysis in each of these groups are summarized, together with their respective symptoms. During pregnancy regular examination of the urine and estimation of blood pressure should be made. Patients should be instructed to report at once the occurrence of continued headaches, edema, or diminution in the amount of urine secreted. The author reports one case, deemed by him as one of passive congestion followed by cloudy swelling and progressing to a marked granular degeneration of the epithelium. Artificial delivery at the eighth month was effected, both mother and child surviving.

Journal of the American Medical Association, September 15 and 22, 1906.

Treatment of Progressive Atrophy of the Optic Nerve Due to Acquired Syphilis.—Charles Stedman Bull discusses the treatment of syphilitic atrophy of the optic nerve by means of subconjunctival injections of corrosive sublimate, the paper being based upon the writer's experience in twenty-five cases occurring in private practice. In three of the cases, in addition to the subconjunctival injections, an intravaginal injection was made directly into the sheath of the optic nerve. The results of this treatment were most discouraging; in none of the cases was there any permanent, and in only three was there even a temporary improvement. The most that could be said was that the injections caused no acceleration of the loss of sight. The following are the author's conclusions: (1) Posterior subconjunctival injections of sublimate may be given with but little pain if the sublimate injection is preceded by the injection of cocaine. (2) The conjunctiva should be incised and carefully separated from the episcleral tissue, and the injection made far back toward the apex of the orbit. (3) The eye need not be bandaged after the injection, but cold applications should be made for half an hour. (4) This method of treatment of cases of atrophy of the optic nerve has, in my hands, proved of no more value than the usual routine, treatment by mercury, potassium iodide, strychnine, and offers no encouragement for its continued use.

Neoplasms of the Colon.—A. F. Jonas reports sixteen cases of new growths of the colon and presents a study of the condition, based upon these cases. There is no disease of the intestine so free from symptoms in its early stages, and herein lies the great danger; for by the time the condition declares itself by unmistakable symptoms it is usually too far advanced for successful operative treatment. These may be colicky pains, flatulence, obstinate constipation, alternating perhaps with diarrhea, possibly emaciation, but the only positive sign is the presence of a tumor, which examination shows to be located in the wall of the colon. In the author's cases the new growth was malignant in all but one. The results of treatment are discouraging, for recurrence is the rule. By the time the clinical symptoms are sufficiently pronounced to warrant an operation the metastatic deposits will have become so extensive that one cannot hope to eradicate all of them.

Medical Treatment of Duodenal and Gastric Ulcer.—A. Lambert says the conditions to be overcome in the treatment of this condition are hyperacidity and sometimes hypersecretion and stasis of food in the stomach; nausea, vomiting, and pain arising from the morbid processes present in the gastric mucous membrane; the general conditions and symptoms of nervousness and anemia arising from the faulty nutrition of the body; and not infrequently the complications of hemorrhage, perforation, and at times stenosis and distortion of the pylorus or other regions of the stomach. The first essential in the dietetic treatment is complete rest of the body and the stomach, obtained by confinement to bed and rectal feeding. The latter should be continued for from three or four days to a week or ten days, but gastric feeding should be resumed before the rectum becomes intolerant. The first food swallowed should be peptonized milk in small doses and at long intervals, a quart a day being the limit reached at the end of a week, this being gradually increased until two quarts are taken in the twenty-four hours. The degree of peptonization may now be gradually reduced until, at the end of the third week, raw milk may be given. As we reduce the peptonization we may add the cooked cereal gruels of barley, wheat, or oat flour as part of the diluent. During the fourth week, with the raw milk, we may add crust free bread, butter, and eggs, but not hard boiled. It is well to add only one new thing at a meal, that we may judge accurately if it agrees with the patient, and be ready to discontinue it if necessary. In the fifth week one may add potatoes (baked or boiled), rice (boiled), macaroni, custards, chicken, and sweetbreads. In the final or sixth week of the cure, beef, mutton, green vegetables, light salad without vinegar, cooked fruits, and simple puddings may be added.

Sigmoid Pathology.—H. D. Niles thinks that angulations and partial obstructions of the colon at this point are more common than has been generally believed, and shows how pressure from hardened feces under such conditions may easily be the cause of ulcer and later of malignant disease. Incomplete nonmalignant stricture occurs probably next in frequency to ulcer in this region. The early recognition of sigmoid ulcer and its complications is, therefore, of the utmost importance, and especially since the after-results may be so serious. A suggestive history, left-sided tenderness, with or without bowel inflation, colicky pains, pus or blood in the stools, obstinate constipation, or obstructive symptoms, other diseases being excluded, are signs that should suggest a sigmoid pathology. Inspection, palpation, and percussion, before, during, and after distention of the bowel with water or air, are specially mentioned as valuable for detecting and locating stenosis in this part. The essential treatment, as in gastric ulcer, is rest, and timely operative measures, irrigation and starvation methods failing, are indicated.

Nephrolithiasis.—A. H. Cordier says that nephrolithiasis is more prevalent than is generally supposed, and that there seems to be some special cause for its more frequent occurrence in the right kidney. A stone once formed in the pelvis of the kidney, if too large to pass out, will sooner or later cause trouble. Suppuration, as a rule, is a late process, and should be anticipated by early operation. With a carefully obtained clinical history, diagnosis is easy. Obscure persistent pains in the kidney region, with the history of previous renal colic, should lead to an exploration of the organ. The patency of the ureter should be assured at the time of operation, and this existing, the kidney should not be removed unless it is practically destroyed by the disease. Medical treatment may be palliative to tide over an attack, and possibly may prevent a recurrence. He advises care as regards the use of morphine, lest a cumulative effect of too frequently repeated doses be caused when the tolerance due to the pain has ceased with the cessation of the attack.

The Present Status of Brain Surgery.—M. A. Starr considers that sufficient time has elapesd to enable us to estimate the value of brain surgery for the relief of tumors, epilepsy, and abscess with considerable accuracy. It is only in localized Jacksonian epilepsy (about 2 per cent. of all cases), that operation is indicated, and in only about 20 per cent. of these is it successful. Trephining for epilepsy, therefore, is of very limited application and is only to be recommended in a few selected cases which present the necessary guide to both physician and surgeon. In abscess of the brain, early operation as soon as the condition is diagnosed is imperative, and in cases of skull fracture or concussion, followed within two or three weeks by symptoms suggestive of abscess, even if there are no localizing symptoms, trephining is imperative. In brain tumor, with positive localizing symptoms, operative interference may be warranted, but without localizing symptoms, operation promises nothing. The proposition to afford relief in inaccessible tumors by making a considerable opening in the skull to relieve pressure, may be of value in some cases. In cases of extradural hemorrhage from traumatism, with symptoms of intracranial pressure, slow pulse, steady rise in blood pressure, deepening coma, Cheyne-Stokes respiration, and increasing hemiplegia, all appearing within six hours of the injury, trephining is sufficiently clearly indicated. In apoplexy, Cushing has applied successfully, in hospital cases, the test of the condition of the blood tension in determining the need of surgical intervention to save life. Cushing has also treated surgically with success new-born infants who, after a difficult labor, have suffered an extradural or intradural hemorrhage. It is easy in these cases to relieve intracranial pressure by opening the sutures of the parietal bone with scissors, and his success warrants urging obstetricians to consider this operation in the case of asphyxiated infants of the class described above. Obstetricians see these cases, and if they are convinced that delays are dangerous the percentage, Starr says, of idiocy and hemiplegic epilepsy will certainly be reduced. The last class of cases of cerebral hemorrhage suitable for trephining is that in which hemiplegia or hemianopsia develops slowly after an injury, and does not come to its height for three or four days. In these there is probably a surface hemorrhage from a vein in the pia mater, and lumbar puncture will probably reveal blood in the cerebrospinal fluid.

The Lancet, September 8, 1906.

Recovery from Over Forty Grains of Perchloride of Mercury.—About forty-three grains of mercuric chloride were taken by a woman patient of P. C. Maitland.

He gave about four ounces of carron oil made with cod liver oil (as the only oil available), followed by one ounce of wine of ipecac. As soon as possible milk and the whites of eggs were given. The next morning the patient was fairly comfortable, and in a day or two quite well. The time elapsing between the taking of the poison and the administration of the remedies is not stated.

A Case of Bradycardia.—C. E. McDade reports the case of a man of seventy-two years. His heart sounds were clear, urine normal, and his blood-vessels seemed healthy. At times his pulse ran down to from 32 to 40. On one occasion the radial pulse was 28, while the jugular pulsation was 56. Later the pulse became intermittent and the patient complained of a pain in the left side of the head. Several attacks of diarrhea supervened and the urine became full of water and gave a haze on boiling. Under rest and nutritious diet he gradually improved, and when last seen by the author his pulse was 72, strong, and regular. No suggestions are made as to the exact cause of the extremely low pulse rate at various stages of the case.

A Case of Intussusception Illustrating the Dangers and Fallacies of the "Inflation" Treatment.—J. L. Falconer reports the case of a male child of ten months with the usual symptoms of intussusception apparently reduced by the ordinary water inflation. The child was somewhat collapsed after the procedure, but recovered and passed nominal feces. A few days later the tumor was again felt, and was again reduced as before. Still again in a week a similar experience was gone through with except that the child began to develop a typical abdominal facies. It was removed to hospital and the abdomen opened through the right rectus muscle. A mass was found low down in the pelvis, and at first the invaginated gut was easily withdrawn, but a part was soon reached where the intussusception had sloughed through the intussuscipiens and was surrounded by a local peritoneal abscess. The mass was cut away and the divided ends of the bowel were fastened on the upper angle of the wound. A drainage tube was inserted down to the pus area. No cause could be found for the intussusception. The child collapsed ten hours after the operation and died. The operating surgeon, E. D. Telford, declares that the inflation treatment is dangerous, uncertain, useless in any variety of the lesion beyond the ileocecal valve, and not applicable when once plastic peritonitis has taken place. Early abdominal section is the most rational plan of treatment. Recovery after the trouble has existed thirty hours is very unusual in any event.

Some Remarks on the Therapeutic Action of the Iodides.—J. Burnett passes in review some of the therapeutic indications established for the use of the iodides, especially the potassium salt. First, aneurysm, though we do not positively know its mode of operation. Administration by the mouth has, in the author's experience, but little influence on the pulse rate or arterial pressure. Various authors have suggested the iodides for arteriosclerosis, but its beneficial effects are probably due to its power of increasing elimination, thus enabling the blood to get rid of irritating substances, rather than to any power to reduce arterial pressure. The iodides tend to diminish the excretion of uric acid. In angina pectoris one should give at least from forty to sixty grains of the drug daily and keep up this quantity for a long time. In chronic respiratory diseases the iodides are one of our most valuable agents. In chronic rheumatism benefit is derived from the iodides by virtue of their effect on the uric acid excretion. They serve, too, as eliminatives in case of effusion, are of service in interstitial nephritis, though considerable of the remedy is necessary to serve as an efficient diuretic. In hepatic cirrhosis, metallic poisoning, and cases of goiter they are often of benefit.

Berliner klinische Wochenschrift, September 3, 1906.

The Absorption of Dead Tubercle Bacilli.—Marmorek says that it has been regarded as a well-established fact that the animal body is not able to absorb the bodies of dead tubercle bacilli as it can those of other organisms. Experiments he has carried out seem to show, however, that under certain conditions this does not hold true and absorption is possible. On injecting emulsions of ordinary cultures of tubercle bacilli into rabbits and guinea pigs cold abscesses are always formed. The absorbability of the bacilli is greatly increased by extremely careful trituration of the cultures so that no aggregations of bacilli remain. No amount of trituration seems to render bacilli from old cultures absorbable, but carefully prepared emulsions from young cultures are completely absorbed by the experiment animals so that after a week or so it is difficult to find any of the bacilli in the tissues. The absorbability of the organisms could also be greatly enhanced by mixing the emulsion with the author's antituberculosis serum, and by this means the absorption of even the old, resistant organisms could be secured.

Münchener medizinische Wochenschrift, September 4, 1906.

An Extravesical Urine Separator.—Tromp describes an apparatus devised by Professor Heusner for obtaining specimens of urine from the two kidneys, for purposes of renal diagnosis. The author states that the various forms of intravesical separators have been found unsatisfactory, and he also recounts a list of objections to catheterizing the ureters through the cystoscope, chief of which, of course, is the danger of infection. Heusner's apparatus consists of a metal framework supporting two vertical screws bearing pads at their extremities and which are so arranged that they may be screwed down over a recumbent patient's abdomen in such a way as to exert pressure at either side of the fifth lumbar vertebra, thereby compressing the ureter as it crosses the brim of the pelvis. The bladder is first irrigated while both ureters are compressed, and then the urine first of one side and after a second washing, that from the other side is collected by manipulation of the compressing screws. It is stated that the maneuver is not very uncomfortable to the patient, and four cases are described in which it was used with very satisfactory results.

A Ring Test for Acetone.—Lange describes the following test for acetone in urine: One-half to one c.c. of glacial acetic acid is added to 15 c.c. of the suspected urine and a few drops of fresh sodium nitroprusside solution are added. A few c.c. of ammonia are then carefully layered over the fluid, and if acetone is present an intense violet ring will appear at the line of contact of the two fluids. In addition to the convenience of the method, the author claims for it the advantage that neither creatinine, alcohol, or aldehyde can give rise to misleading results. The test is also very sensitive, as it demonstrates the presence of acetone in dilutions up to 1-400 per cent.

A New Hysterical Condition Among School Children.—Schutte says that in the city of Meissen there has existed since last December a widespread epidemic among school children of a peculiar nervous affection locally called the "trembling sickness." The patients are mostly children between the ages of nine and thirteen years, girls being the most susceptible. The affection first manifests itself by a more or less protracted period of nervous unrest, which is followed by the gradual development of a trembling of the right forearm and hand, which in severe cases extends to the left side also. The seizures of trembling last from a few minutes to half an hour and recur at varying intervals, sometimes appearing also at night. The disease, it appears, has spread rapidly, the children apparently becoming the victims of a form of autosuggestion. The treatment necessitates a removal from school and rest in bed for a time, followed later on by gymnastics and open-air exercises.

Deutsche medizinische Wochenschrift, September 6, 1906.

A New Test for the Detection of Occult Blood in the Feces.—Schlesinger and Holst report the results of a comparative study of the guaiac, aloin, and benzidin tests for minute quantities of blood in the stools or in stomach contents. They conclude that the delicacy of both the aloin and guaiac tests is much increased by resorting to the procedure of Schumm, which consists in a somewhat troublesome series of extractions with alcohol, ether, and acetic acid, while when the benzidin test is carried out under these conditions it becomes too sensitive for ordinary use, as positive results were obtained even after ten days' abstinence from meat. The authors have devised the following test, which is superior in delicacy to the aloin and guaiac tests, but yet is not so sensitive as to be impracticable for clinical use. A portion of the stool about the size of a pea is rubbed up in a test tube with a small amount of water and the mixture is brought to a boil by holding in the flame for a few moments. The reagent consists of a concentrated solution of benzidin in glacial acetic acid which is made by adding as much of the benzidin as can be taken on a knife point to 2 c.c. of the acid. Ten drops of this solution are added to about 3 c.c. of 3 per cent. peroxide of hydrogen solution. To this mixture 1-3 drops of the feces emulsion are added, and in the presence of blood a bluish green or green color appears, usually in a few seconds. The authors recommend the test on account of its simplicity, its superiority

in delicacy to the aloin or guaiac tests, the absence of risk of a confusion through oxidizing ferments (which are destroyed by the boiling), and because the technique involved eliminates the possibility of faulty results due to the reagents or the test tube.

The Operative Treatment of Genuine Epilepsy.—Rinne's patient, who was operated on twelve years ago, when he was twenty-seven years old, was the victim of a severe form of true epilepsy which rendered it impossible for him to do work of any sort. After all other measures, including stretching of the brachial plexus, had failed to cause any improvement, excision of the cortical centers controlling the hand and arm was decided on, the seizures always beginning with twitchings in the right thumb and hand. The cortex was exposed and the centers in question were identified by means of electric stimulation, and an area of cortex three or four millimeters thick and 1 by 1.5 cm. in area was excised. Since that time, although the fits have not been cured entirely, they have been rendered a great deal milder so that the patient rarely becomes unconscious, and sometimes periods of six months elapse without a seizure. The patient has been able to found and conduct himself a small manufacturing business and is able to support himself and family. The author considers it an open question whether it was the excision of cortical substance or the cerebral decompression that brought about this result.

Inoculations with the Spirochæta Pallida.—Greeff and Clausen describe and illustrate positive results obtained on inoculating the anterior chamber of the rabbit's eye with luetic material. Sections of the cornea made some weeks after the infection revealed large numbers of typical spirochetes. The authors call attention to the fact that owing to distribution of the organisms through the lymph channels of the cornea it is necessary, in order to demonstrate them, to make the sections longitudinally and not transversely.

French and Italian Journals.

Neurofibromatosis with Plexiform Neuroma.—Jaboulay gives an interesting and detailed description of this growth. The patient, a man twenty-three years old, sought medical aid merely for esthetic reasons. The tumor was the size of a mandarin, flattened, and triangular in shape. It was pediculated. The mass was soft, with a surface lobulated like that of a lipoma or deep angioma. By pressing it between two fingers there could be felt tiny particles like small grains, connected by little threads. The pedicle of the tumor was condensed into a hard cord. The precise insertion of this pedicle could not be determined by palpation. The growth was not painful. It was situated on the forehead, falling down in front of the eye. The patient gave a history of the appearance of the tumor at the age of two years. It grew slowly in size for three years, when an operation was performed. Whether the operation was complete or partial, the tumor rapidly reappeared, and continued to increase slowly in size. A systematic examination of the rest of the body revealed a series of tumors and pigmentations. These tumors were all subcutaneous, and movable between the skin and the deeper tissues. The pigmentations differed in appearance in different locations. The frontal tumor was benign and congenital. This rare and curious affection is less a tumor than a malformation of the peripheral nervous system. It may persist indefinitely without affecting the general condition. However, malignant degeneration may occur. The tumor was removed and the patient went away cured, eight days later. The structure of the tumor was that of a pure plexiform neuroma.—*Gazette des Hôpitaux Civils et Militaires*, August 28, 1906.

Cholecystectomy for Cancer of the Gall-Bladder.—Patel reports this case. The patient, a woman, sixty-eight years old, was sent into the hospital on account of symptoms of intestinal occlusion. The patient had borne eight children, two only of which were living. For a year she had not been well. She had had pain in the abdomen, with vomiting now and then. There had been a little constipation. The pain became more severe some hours after eating. For two days before entering the hospital her symptoms had increased greatly in severity. Palpation of the abdomen showed resistance in the right hypochondrium. A swelling which could be felt seemed to be associated with the liver. Further examination showed the tumefaction to be continuous with the liver. It appeared hard, tense, and regular. The stomach was not dilated. The patient was extremely emaciated. Operation revealed the trouble. The gall-bladder was twice its normal size, hard, and with thickened walls. Radical operation was performed. Histological examination showed the existence of carcinoma. Nine months after operation the patient is still in good health. The writer believes that in cases of extrinsic cancer which is incapsulated in the gall-bladder, radical operation ought to give excellent results.—*Lyon Médical*, August 26, 1906.

Pulmonary Adenopathies, Anatomical, Radiographic, and Clinical Study.—Piéry and Jacques present the following conclusions: Anatomical and radiographic researches establish a distinction between pulmonary adenopathies and mediastinal or tracheal adenopathies. The first only, by their direct relations to pulmonary lesions, give indications concerning the condition of the lungs. In every pulmonary infection, tuberculous or otherwise, the pulmonary ganglia are, at autopsy, as much more developed, hypertrophied, and numerous, as the pulmonary process is more intense. Cretaceous lesions of the ganglia indicate an old tuberculosis which has been cured; sclerotic foci indicate an old tuberculosis less certainly cured; caseous foci are old foci still in the process of evolution. While tracheal adenopathies necessitate an oblique lateral examination, pulmonary adenopathies are revealed on a screen by an anteroposterior examination. The image of these adenopathies is very different, according as the lesion is recent or old. Radiographic examination allows of a diagnosis which without it would pass unperceived. It offers also a retrospective diagnosis in latent cases. Prognosis also is simplified by this method.—*Revue de Médecine*, August, 1906.

Reduction of Pseudosubcoracoid and Axillary Dislocations (Recent and Noncomplicated).—R. Rapoutova believes that in the reduction of a dislocated shoulder narcosis ought to be avoided. In typical subcoracoid dislocations, Kocher's method always succeeds. It does not require narcosis. When this method is not successful, one may rest assured that he is dealing with a psuedosubcoracoid dislocation, that is, with a secondary displacement (axillary, intracoracoid, intraclavicular). This secondary displacement is sometimes spontaneous. More often it is consecutive to attempts at reduction. In such a case general anesthesia is often indicated.—*Revue Médicale de la Suisse Romande*, August 20, 1906.

Primary Pigmented Syphiloderm.—Giuseppe Ronchi has studied eight cases of pigmented syphilitic lesion, which is generally called the collar of Venus, and has been supposed to be secondary to a previous macular or papular lesion. He states it as his belief that it occurs without any preceding lesion, and should be called a primitive pigmented syphiloderm. It occurs during the secondary period of the disease, and consists of patches of pigmented skin of a deeper color than normal, surrounded by normal colored skin, which are permanent and are located generally on the neck, although sometimes found diffused over the surface of the body and limbs. The pigment granules are found abundantly in the chromogenous layer of the skin and in the upper portion of the chorion, having origin in the epithelial cells.—*La Riforma Medica*, July 2, 1906.

Treatment of Pulmonary Tuberculosis by Acids.—Arturo Campani says that some authors have founded on the fact that in the pretubercular period and in early tuberculosis there is a lessened acidity of the urine, the theory that the proper medication for such patients is the administration of acid phosphates to maintain the acidity in the body. The author has studied the urinary conditions in twelve tuberculous patients; of these, five were in the early stages, without fever and with slight physical signs, but weak, and with rapid pulse; two were marked cases, but in good physical condition; the remaining five were so far advanced as to be confined to bed. As a result of his observations he believes that there is a noticeable lowering of the acids of the urine in early cases that are of low vitality and have frequent pulse. This is rare in those who are strong and have a normal pulse. In febrile cases the acids are above normal. This condition is not due to a lowering of the acids in the body, but to an increased excretion of alkalies, and a medication directed to increase the acids taken is useless to cure or prevent the disease.—*Giornale Internazionale delle Scienze Mediche*, June 30, 1906.

Diverticula of the Appendix.—Weinberg has observed two new cases of diverticula of the appendix. The study of these cases shows that these diverticula owe their origin to an abscess having its beginning in a suppurative lesion of a lymphatic follicle. This extends into the submucosa and even into the muscular layer of the wall of the appendix, above and below the initial lesion. When the abscess is cured there has been formed in the wall of the appendix a cavity parallel to the lumen of the organ, with which it communicates at one point. This can easily be noted by examination of the serial sections. In one of the cases in which the appendix was divided into two cavities by a partition of inflammatory origin, the diverticulum was formed in the lower half of the organ. Mucus secreted by the glands of Lieberkühn accumulated until the entire diverticulum was filled up with a plug of condensed mucus.—*La Presse Médicale*, June 27, 1906.

Book Reviews.

THE SUBCONSCIOUS. By JOSEPH JASTROW, Professor of Psychology in the University of Wisconsin. Boston: Houghton, Mifflin and Company, 1906.

THE phenomena of man's subconsciousness are of the greatest practical, as well as scientific, interest to the physician who would know every wheel in his patient's mental mechanism and understand every phase of normal and abnormal brain activity. Jastrow's book presents in attractive semi-popular form an analysis of the normal and abnormal subconscious phenomena. The first part deals with definitions and with the relation of subconsciousness to mental processes; with lapses of consciousness and self-consciousness in normal persons. The second part is devoted to a study of abnormal subconscious states, to dream consciousness, and to dual or altered personality, etc. Professor Jastrow has handled an interesting but difficult subject in a manner which must excite admiration. His style is one flowing fount of scholarly yet lucid English, and the reader's grasp of the subject-matter is made easier by a considerable number of cited cases.

MANUAL DE PRACTICA SANITARIA PARA USO DE JEFES E INSPECTORES DE SANIDAD, Dirigido y Anotado por el Dr. ENRIQUE B. BARNET, Jefe Ejecutivo del Departamento de Sanidad de la Habana. Habana: Departamento de la Sanidad, 1905.

THIS official manual of sanitation is issued by the Department of Health of the Cuban Republic. It contains a series of articles covering the entire range of hygiene, sanitation, etc., by a number of the principal officials of the Cuban Health Department. The volume is attractively got up and well illustrated. The first part includes the contagious diseases that must be reported. The second deals with the organization of the Health Department, sanitary engineering, mosquitos, vaccination, sanitation of tenements, hotels, theaters, etc., of hospitals, barracks, schools, and the special regulations concerning noxious trades. The hygiene of drinking water, disinfection, the analysis of foods, form another group of chapters. A chapter is also devoted to the science of vital statistics, one to quarantine, and the regulation of immigration. A description of the public laboratory of Cuba and of Las Animas Hospital, and a compilation of the sanitary laws complete the volume. The book will doubtless serve as a model of its kind for the various Spanish-American countries. It represents the constant advances in sanitation shown in Cuba under the republican régime.

ÉTUDE CLINIQUE ET TRAITEMENT DE LA LITHIASE DU CHOLÉDOQUE. Par le Dr. RAYMOND FRANÇAIS, Ancien Interne des Hôpitaux de Paris. Paris: Steinheil, 1906.

FRANÇAIS' thesis concerns itself with the clinical features and the surgical treatment of gallstones of the common duct. The 18 cases cited are taken from the service of Professor Hartmann, and a set of well-drawn line sketches illustrates the various steps in the operations for the relief of the condition dealt with. The best chapter in the book is that dealing with the technique of choledochotomy. Nothing strikingly new is offered by Français save the account of the 18 cases mentioned, fifteen of which were operated upon by choledochotomy. This group of cases then must be added to the 202 cases of Kehr, the 180 cases of Schott, the 137 cases of the Mayo Brothers, etc. Of Hartmann's patients whose cases are here reported four died, of whom two died 6 months and 3 years respectively after operation, while of the remaining two one died of peritonitis and the other on the eleventh day, probably of angiocholitis. The introduction of a drain into the duct after opening it is insisted upon as an important feature, while Mayo-Robson's hyperextension is regarded as essential in operating.

MODERNE PHTHISIOGENETISCHE UND PHTHISIOTHERAPEUTISCHE PROBLEME IN HISTORISCHER BELEUCHTUNG. Von Prof. E. VON BEHRING, Wirklichen Jeheimen Rath. Berlin: August Hirschwald, 1906.

THE present eleventh number of the Beiträge zur Experimentelen Therapie, edited by von Behring, is devoted to a discussion of the modern problems of tuberculous pathogenesis and therapy, viewed in a two-fold light: in that of history as reflected in the works of Baillie, Vetter, Bayle, Laennec, Lebert, Morgagni, Villemin, Virchow, Cohnheim, Koch, and Aufrecht, and in that of Behring's own experimental researches. The purpose of the book is to prepare the medical world for the discovery of the new specific against tuberculosis to be known as "Tx," which Behring promises to announce before the end of the present year. This tuberculosis remedy will not contain the bodies of germs as does Behring's bovovaccine. By a special treatment of living tubercle bacilli Behring extracts from them Tc, a residual powdered substance which when injected into the tissues produces noncaseating, self-limited tubercles. Tx, the promised new remedy, is a preparation derived from Tc, which is an immunizing vaccine in man but is said to be harmless. The second part of the book, dealing with therapeutics, will contain further details of this new remedy.

UEBER DIE STIMMUNGSSCHWANKUNGEN DER EPILEPTIKER. Von Prof. Dr. GUSTAV ASCHAFFENBURG, in Köln. Halle: Carl Marhold, 1906.

ASCHAFFENBURG'S essay deals with the "emotional equivalent" of epilepsy, *i.e.* of the periodic variations in mood observed in some epileptics. The questions which he considers are: (1) Are these periodic variations in emotional mood characteristic of epilepsy, and, if so, (2) in what manner do they differ from emotional anomalies in mentally diseased persons in general? The first question is answered affirmatively; the second is briefly discussed in an attempt to characterize the special features of emotional variations in epileptics. The author's style is exceptionally free from the diffuseness and topheaviness so characteristic of many modern authors on such themes as this.

NOUVEAU TRAITÉ DE MÉDECINE ET DE THÉRAPEUTIQUE. Publié en Fascicules sous la Direction de MM. P. BROUARDEL et A. GILBERT, Professeurs à la Faculté de Médecine de Paris. X. STREPTOCOCCIE, STAPHYLOCOCCIE, PNEUMOCOCCIE, COLIBACILLOSE, par F. WIDAL, J. COURMONT, L. LANDOUZY ET A. GILBERT. Paris: J. B. Baillière et Fils, 1906.

THIS tenth fascicle of Brouardel and Gilbert's new system of medicine deals with streptococcus, staphylococcus, colon bacillus, and pneumococcus infections in their various forms. The streptococcus, its bacteriology, pathogenic effects, etc., is handled by Widal, who describes in especial detail erysipelas of the face. Courmont has charge of the chapters on the staphylococcus. Landouzy writes on the pneumococcus, and Gilbert on the colon bacillus. Nothing new is presented as to the treatment of facial erysipelas. In speaking of serum therapy against the pneumococcus the authors are sceptical and declare that a serum which immunizes against one culture of the germ does not seem to have any effect against another sample. The illustrations are simple diagrammatic cuts.

A COMPEND OF MATERIA MEDICA, THERAPEUTICS, AND PRESCRIPTION WRITING, with Especial Reference to the Physiological Action of Drugs. Based on the Eighth Revision of the U. S. Pharmacopœia, Including also Many Unofficial Remedies. By SAMUEL O. L. POTTER, M.D., M.R.C.P. Lond., Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco: Author of "Materia Medica, Pharmacy, and Therapeutics," "Quiz Compend of Anatomy," etc. Seventh Edition, Revised and Enlarged. Philadelphia: P. Blakiston's Son and Company, 1906.

POTTER'S compend on Materia Medica is so well known that it is only necessary to draw attention to this new edition, which has been thoroughly revised and brought into conformity with the eighth edition of the U. S. Pharmacopœia. Wherever necessary, new articles and paragraphs have been inserted, and obsolete matter removed. The essentials of the subject have been kept in view throughout, and the book is one of the best compends on Materia Medica in the market.

ON CARBOHYDRATE METABOLISM. A Course of Advanced Lectures in Physiology Delivered at the University of London, May, 1905. With an Appendix on the Assimilation of Carbohydrate into Proteid and Fat. Followed by the Fundamental Principles and the Treatment of Diabetes Dialectically Discussed. By F. W. PAVY, M.D., LL.D., F.R.S., Honorary Physician to King Edward VII. Hospital; Consulting Physician to Guy's Hospital. London: J. and A. Churchill; Philadelphia: P. Blakiston's Son and Company, 1906.

THE contents of this volume are sufficiently indicated by the title, which declares it to contain three chapters, all dealing with subjects of prime importance to the student and practitioner. Carbohydrate is discussed from both its physiological and its pathological side, the author urging that a knowledge of the physiological operations involved in carbohydrate metabolism constitutes a necessary preliminary to a right comprehension of the pathology of diabetes. The author's views on the doctrine of glycogenesis are well known and will be found fully set forth in these pages. Quite early in the book he gives a refutation of the generally accepted ideas on the subject, and later on he shows that a misunderstanding of the subject gives rise to erroneous teachings on the dietetic treatment of diabetes. Such new theories as the author has to offer are thoroughly worked out, clearly set forth, and backed up by both laboratory experiments and clinical experience. All students will welcome the veteran author's latest contribution to this subject.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, Held at Bedford Springs, September 10, 11, 12, and 13, 1906.

(Special Report to the MEDICAL RECORD.)

GENERAL SESSION.

Tuesday, September 11—First Day.

THE meeting was called to order in general session at 9.30 A.M. by the President, Dr. William H. Hartzell of Allentown. Prayer was offered by the Rev. M. L. Culler of Bedford. The presentation of the program was made by Dr. Simon H. Gump of Bedford, Chairman of the Committee of Arrangements, and Dr. W. P. S. Henry of Everett, President of the Bedford County Medical Society, gave the Address of Welcome. Dr. C. L. Stevens of Athens, Secretary, spoke briefly of the state of the Society.

President's Address.—Dr. WILLIAM H. HARTZELL, in his address, spoke of the increase in membership of the State Society as compared with nineteen years ago, the number of members having increased from about 800 to 4,600. He made a plea for a continued and persistent effort in organization for the improvement of the profession. He suggested that every school district within the State would be provided with a committee to instruct the public by means of lectures and leaflets regarding measures for the relief and control of tuberculosis. An earnest plea was made also for a pure water supply and isolation of contagious diseases. He dwelt upon the injury done to the profession by free hospitals and dispensaries. Another evil that called for correction was the neglect of the physicians in their accounts and collections. The contracts between physicians and lodges, casualty companies and corporations, he condemned, and urged that every county society take this matter up and remedy the evil. "It is a matter of professional pride," he said, "that in the general condemnation of the life insurance companies, although every other part of the control has been shown to be corrupt, no breath of scandal has touched the medical department." In conclusion Dr. Hartzell pointed out some of the principal advances in internal medicine, surgery, diagnosis, and therapeutics.

A Plea for the Creation of a State Hospital for Inebriates and Drug Habitues.—Dr. THEODORE DILLER of Pittsburg said that the present legislation upon this subject largely failed of its beneficent purpose, because the "proper hospital or asylum" does not exist within the borders of the State. He argued the great need of a special institution for inebriates, owned and operated by the State, to which pay patients as well as indigent patients could be committed. Quotations were made from letters received from T. E. McGarr, Secretary of the New York State Commission in Lunacy, and Dr. William Mabon, expressing the belief that a properly equipped hospital for inebriates, owned and operated by the State and governed by proper laws, was badly needed. In Iowa a specially equipped hospital was operating under a wise and strong law, and, although not perfect, was doing great good. The provisions of this law were given. That the inebriates of the State were largely left to the devices of the various "cures" owned by cunning proprietors, seemed a reproach to the public as well as to the medical profession. To the correction of this Dr. Diller suggested that the Medical Society of the State of Pennsylvania take the initiative in appealing to the Legislature to create a special hospital for inebriates to make its present law effective, believing it to be the duty of the Society to point out the proper method of treating inebriates.

Dr. JOHN B. CARRELL of Hatboro attributed inebriety largely to temperament and to wrong ideas of sociability. He was firmly of the opinion that an inebriate hospital should be established in Pennsylvania.

Dr. LOWELL M. GATES of Scranton agreed with Dr. Carrell that a person of nervous excitability was more susceptible to inebriety than the phlegmatic man taking beer regularly. He felt that there was little hope of cure with the present conduct of the saloon, which endeavored to make a man drink. He did not believe treatment extending over two or three years was necessary, but held that a man's desire to drink could be removed in from twenty-four to forty-eight hours.

Dr. CHARLES K. MILLS of Philadelphia said that laws had not been evolved sufficient to deal with the problem of the care and treatment of the inebriate; incomplete legislation, however, was better than none The first essential was a better law in regard to the seclusion of the inebriate. The institution for this purpose need not be a very large one, but should be capable of expansion. While he did not believe that an inebriate could be successfully treated in so short a time as a day or two, three years he thought unnecessarily long.

Dr. CHARLES W. BURR referred to the injustice of the present law on account of its provision for the well-to-do and not for the poor, since it required the giving of a bond for the board of the patient committed. He felt that the failure of the successful treatment of inebriates in insane asylums was due to the manifold duties of the physicians in charge. He believed also that it might possibly be better if the care of inebriates were undertaken by private institutions, rather than left to the oversight of the State. The chances of cure for the inebriate, in the true sense of the word, Dr. Burr felt to be very small, but believed cure possible in those who through idleness had acquired the habit.

Dr. F. W. FRANKHAUSER of Reading inquired why, if the percentage of cure of inebriety were so small, it would not be better to prevent it. Under the present legislation the revenue from the saloons and breweries was used to pay for the care of just such cases as they produced. The better plan, he urged, would be to prohibit the conditions which made men and women inebriates.

Dr. HENRY BEATES of Philadelphia thought it self-evident that a man addicted to narcotics and unfit for the duties of life should be placed under some influence—call it a school or a hospital—which would so strengthen him in self-control that his will would be stronger than the temptation.

Dr. JOHN B. ROBERTS said he had always thought that he would like to understand neurology, but was free to say that if neurology made one so hopeless as Dr. Burr appeared to be, he did not care to know anything of it.

Dr. LOWELL M. GATES of Scranton thought that the medical profession had added to the number of inebriates by the careless prescribing of alcohol to those who might be run down in health.

Dr. Diller closed the discussion, and on motion the subject was referred to the House of Delegates.

SECTION ON MEDICINE.

Tuesday, September 11—First Day.

Oration on Medicine.—Dr. DANIEL W. JEFFRIES of Chester delivered this oration, in which he spoke of what might possibly be called the decadence in the general practice of medicine. A noted surgeon might come to this country to give professional service, and the whole population of America was stirred, whereas any number of general practitioners of medicine might light upon American shores and no one know anything of it. Notwithstanding this, he declared it to be the general practitioner who did the major part of the work in medicine in this country. He deprecated the fact that by some the medical books of two or three years' standing were considered not up to date. Percontra he mentioned books published in 1840

and 1856, than in which better descriptions of disease and methods of diagnosis could not be found in the present-day publications. While he was in favor of "holding fast to that which is good," he was also in favor of "not letting go of that which was good in the past."

Some Causes of Inefficiency in Medical Practice.—Dr. John B. Roberts of Philadelphia read a paper with this title, the topics discussed being "lack of equipment for prompt service," "carelessness in observation," "indefiniteness in giving orders," "want of self-confidence and tact," "failure to appreciate the value of common remedies," and "insufficient doses of medicine." The physician anxious to serve, and perchance save his patient, should see that he always had professional tools with him; a doctor who had to send for any of the necessities of his calling before he could relieve agony, had better be a plumber or a carpenter, such mechanics being notorious for returning to the shop for tools before the work can be done. Many mistakes in diagnosis and treatment were attributed to hurried and careless examination. Only an inefficient doctor would tell a short-breathed patient that he had asthma when there had been no analysis of the urine or auscultation of the chest. An efficient practitioner must ever be keen keen-eyed, open-eared, and wide awake, and could not afford to have his intellectual acuity blunted by beer, tobacco, or unnecessary loss of sleep. To kill a man by bursting his intestine with a large enema given by hydrostatic pressure from a high level was mentioned as a professional tragedy, which might occur from lack of definite instructions to a subordinate. Repose, and the modest but confident voice of self-reliance, were cited as mighty aids to successful control of the sick. As a horse feels through the bit the character of his driver, so the keen invalid might know the character of his doctor by seeing him enter the room. Clean air, clean water, clean food, and sound sleep, though the cheapest of all remedies, were said to be the most neglected. The importance of exercise was emphasized; better to scrub the back yard with a broom than to depend on a rubber for exercise and the druggist for one's appetite.

A Discussion of Some of the New Features of the United States Pharmacopœia of 1900.—Dr. Adolph Koenig of Pittsburg attributed the cause of the unpopularity of the U. S. Pharmacopœia to the medical colleges. As example of the general unfamiliarity errors were cited in nomenclature in the writing of both old and recent graduates in which the name of the principal alkaloid of opium was designated as "morphia" in place of the official title of "morphina," in spite of the fact that for twenty years or more the former title had been obsolete. Bearing upon the advantage of using the official rather than the proprietary names, it was stated that in the open market one of the newly-admitted drugs cost $2.50 per pound when brought under its pharmacopœial name, while under the various copyrighted names it cost from $4.80 to $12.80 per pound. Attention was called to the changes due to the demand for uniformity in nomenclature of drugs, one of the most important of which was that of the fluid extracts.

Dr. Max R. Goepp, in referring to the remarks of Dr. Jefferis, thought that the specialist was as necessary to the general practitioner as the general practitioner to the specialist.

Dr. Judson Daland referred to the necessity of the specialist and the general practitioner working together, saying that in every man's practice there came a time when he needed special advice.

Dr. John W. Boyce of Pittsburg did not believe the general practitioner a bad fellow, nor did he believe the general public thought so. Specialism, he thought, had been abused.

Dr. E. V. Swing of Coatesville thought that the "passing of the family physician" had not yet occurred.

Dr. Rigg of Wilkinsburg said that he belonged to the class of general practitioners, and therein expected to continue. Every one, however, respected and honored a good specialist. The difficulty lay in the abuse of specialism.

Dr. Seneca Egbert of Philadelphia challenged a statement that medical students were not at the present time being taught to write prescriptions.

Dr. Wendell Reber of Philadelphia attached more value to the United States Dispensatory than to the Pharmacopœia.

Electricity in the Treatment of Disease.—Dr. John V. Shoemaker considered a few of the applications of electricity especially serviceable in his experience, and commented upon the proper field of usefulness of this potent force. Any preconception of electricity as being a mystericus, life-giving force, capable of working miracles, should be dissipated. It was pointed out that while electricity was always the same in itself, it might be applied in different modes producing different therapeutic results It was observed that electricity might be used to produce, among other effects, local necrosis, disturbance of the electrical relations of the elements of nerves and muscles, to modify metabolism, to act as a temporary stimulant to nutritive processes, and to produce magnetic effects. Of most importance was the fact that electricity, in most cases, was to be regarded as only an adjuvant to other treatment.

Treatment of Four Cases of Pulmonary Tuberculosis in Advanced Stages with High-Frequency Electricity.—Dr. M. L. Barshinger of York presented reports of four cases of pulmonary tuberculosis, showing excellent results of this treatment, even in the advanced cases. A complete record of pulse and temperature at the time of each treatment, and statements of patients themselves in reporting their condition at each visit; also a description of the apparatus used, and the author's observations and conclusions of the action of the current in this disease. It was suggested that the treatment might be used with advantage in sanatoriums in connection with the other usual methods.

The High-Frequency Currents in Chronic Rheumatism and Rheumatoid Arthritis.—Dr. G. E. Pfahler of Philadelphia, in the presentation of this paper, claimed that the high frequency currents were not injurious to the human organism, that while they were not painful, a sensation of warmth was produced by their action, respiratory combustion was increased, and the quantity of oxygen consumed in a unit of time, as well as that of the carbonic acid eliminated, was heightened. This augmentation of the process of combustion was also indicated by the increase in the amount of urea excreted, while the uric acid was diminished. Since chronic rheumatism and rheumatoid arthritis were probably due to faulty metabolism, high frequency currents were indicated. Mention was made of one case of well-advanced rheumatoid arthritis, with a very bad hereditary history, which recovered complete use of all of the joints. Since in chronic rheumatism the pains and the stiffness, which were the chief symptoms of this disease, were relieved by high frequency currents, the treatment was here indicated

Dr. Jay F. Schamberg spoke of the relation of the high frequency currents and allied therapeutic measures in connection with the pigment of cutaneous diseases.

Dr. Matheeny of Pittsburg said he had had a limited experience with the high frequency current in his office, and had found it beneficial in some cases of glandular enlargement. The cost of the current was mentioned as a question of practical importance.

Dr. C. C. Miller of Altoona believed that while electricity could benefit disease to a large extent, it should not be regarded as a specific for any disease.

Dr. Charles K. Mills of Philadelphia had seen a striking illustration of the relief of pain, apparently arthroidal, from the use of the *x*-ray, and in the condition known as "typhoid spine" he had known of marked relief

from the use of either the *x*-ray or of the high frequency currents.

Dr. Lawrence Litchfield cited cases in his own practice which had been markedly relieved by electrical treatment. He felt that the subject of electrotherapy was not regarded quite as favorably as it should be by the general practitioner.

Dr. Seneca Egbert of Philadelphia referred to the fact that in the high frequency current there was encountered a force very analogous to light, and that as in electricity and light two of the most wonderful forces of Nature were presented, it was the part of wisdom not to adopt a nihilistic attitude toward these agents.

Dr. Pfahler, in closing, emphasized the importance of looking upon these agents fairly, and of simply accepting the facts as they are presented. So far as he knew there had never been a satisfactory explanation of the relief of pain caused by the *x*-ray. All the other effects of the *x*-ray had been proven by a number of methods to be due to a chemical action. The fact remained, however, that the relief of pain was wonderful.

The Diagnosis of Brain Abscess.—Dr. John W. Boyce of Pittsburg reported nine cases. Of individual important symptoms, temperature was first considered; neither a continuous nor a remittent temperature, however, would establish or exclude abscess. Observation of the pulse was regarded as important. Tension was considered important, and only in this department of practical medicine did he regard the sphygmomanometer an absolutely indispensable instrument. While the leucocyte count was always of value, it might fail in any individual case. The mental state was said to be often characteristic, and might lead an alienist to advise exploration.

Dr. William G. Spiller said that most of the cases of brain abscess which he had seen had been due to otitis media. If the symptoms warranted the diagnosis of intracranial lesion, operation was imperative.

Dr. Charles K. Mills said he had been impressed with the facts that the diagnosis of cerebral abscess for the purpose of operation was largely made by a close study of the focal lesion plus the indications pointing to middle ear or other purulent disease, and plus the absence of indications pointing to the sinus thrombosis or tumor.

Dr. Boyce, in closing, said that doubtless many cases of brain abscess died without the practitioner suspecting that there was anything for the neurologist to do.

An Analysis of the Kidney Condition of 1,000 Cases of Scarlet Fever Treated by Routine Doses of Chloral Hydrate.—Dr. B. Franklin Royer of Philadelphia presented an analysis of the kidney condition of 300 patients treated by routine doses of chloral hydrate given during the febrile period and continued for several days after all fever subsided, paralleling this analysis with a similar group of 756 patients treated with the usual remedies used in this disease. His study showed an incidence of 5.50 per cent. post febrile nephritis where chloral was used and 7.76 per cent. where chloral was not used, giving an apparent saving of 2.17 per cent. of post febrile nephritis. He presented tables showing detailed analyses of the kidney condition of each group of cases, and concluded that chloral hydrate is of distinct value in the treatment of scarlet fever, and when used in doses of sufficiency to secure light somnolence, does not seem to be a circulatory depressant; that it ameliorates nervous symptoms better than any remedy yet suggested in the treatment of scarlatina; that it allays the itching of the skin; that when given routinely during the febrile period and for some days thereafter post-febrile nephritis appears to be less frequent. This study in his opinion seemed to justify the more extended use of chloral in the treatment of scarlet fever, and a more detailed study of its action on the kidney itself.

Dr. Rigg of Wilkinsburg said that for a number of years he had been much interested in the subject considered by Dr. Royer, and that, although he had not kept detailed records, he could endorse the findings presented. Scarlet fever had been less severe, less fatal, and less liable to complications when chloral hydrate was used than in the employment of any other treatment.

Dr. Royer, in closing, stated that in no case did he make his diagnosis of nephritis on the presence of albumin alone, nor did he diagnose nephritis in the earliest stages from one or two purely hyaline casts and albumin.

Second Day—Wednesday, September 12.

Pernicious Anemia with Jaundice.—Dr. John G. Wilson of Montrose reported the case of a woman, aged fifty-five years, who had been ill about three months. The blood was thin and almost black. The stomach contents showed normal amount of hydrochloric acid present. Jaundice developed about a month before death, and gradually deepened until the patient became a golden hue over the entire body. The liver was normal in size; the hepatic ducts were distended with bile; there was no stone in the ducts or gall-bladder.

The Trained Nurse in the Public Schools, as a Factor in the Education of Children.—Dr. Solomon W. Newmayer of Philadelphia enumerated the benefits following the work of the medical inspectors and trained nurses in the schools of Philadelphia.

Dr. H. H. Herbst of Allentown spoke upon the advantages of the work of the medical inspector in the public schools in deciding questions arising between the parent and the teacher concerning the attendance of the children when the condition of their health was in question. He approved the provision by legislation for the establishment of the medical inspection system in the schools.

Dr. Seneca Egbert of Philadelphia favored the work of the medical inspector and of the trained nurse as well. An effect not so immediate but as important was, in addition to the oversight of the children, the education of the parent in matters of sanitation.

Dr. T. D. Davis of Pittsburg spoke of the danger of taking from the time to be devoted to the studies of the children, if so much attention were given to the physical condition of the children.

Dr. Myer Solis Cohen of Philadelphia agreed that medical inspection should not interfere with the education of school children, but thought that when it did, it was owing to method rather than to the fact of the inspection.

Dr. Jay F. Schamberg argued that medical inspection of schools not only preserved the health of the children, but prevented the spread of disease, and that if properly carried out might be performed with a minimum disadvantage and interference with the school duties.

Dr. Daniel W. Jefferis of Chester spoke of the great importance of the preservation of the health of the children. While much money might be spent in dispensaries, hospitals, and epileptic institutions, more could be wisely spent in the prevention of defection. He felt that a rigid inspection of the schools by physicians should be enforced, and considered the service of a trained nurse a great advantage.

Dr. James H. McKee referred to the plan of the medical inspection in the Philadelphia schools as laid out by Dr. Charles A. Codman and himself, in whose hands the work had been placed by Dr. Martin. The addition of the trained nurse had been a distinct improvement.

Smallpox.—Dr. John W. Ellenberger of Harrisburg read a paper upon this subject, which was illustrated with lantern slides. The paper was fully discussed by Drs. Jay F. Schamberg, William M. Welch, Seneca Egbert, and B. Franklin Royer of Philadelphia. A resolution was passed that the Medical Society of the State of Pennsylvania reaffirm its confidence in the prophylactic power of vaccination against smallpox, and urge the Committee on Public

Policy and Legislation to resist any efforts that may be made to weaken the present vaccination laws of the State.

Latent Diphtheria a Public Health Problem.—Dr. Myer Solis Cohen of Philadelphia, in presenting this paper, said that the latent form of diphtheria, in which the only symptoms were redness of the fauces, slight tonsillitis, nasal catarrh, an increased pulse frequency, an irritable heart or a headache, was as dangerous to the public health as were those forms with definite membrane. He recommended that cultures be taken from the throat of every child who had tonsillitis or who had been exposed to diphtheria, and that all cases in which the Klebs-Loeffler bacilli were found should be placed under the control of the health authorities.

Dr. B. Franklin Royer spoke of the many cases supposed by some to be latent diphtheria, but which were simply cases harboring germs resembling the diphtheria bacilli.

Quarantine.—Dr. Andrew B. Brumbaugh of Huntingdon called attention to a few matters contained under the general head of quarantine. In the course of his remarks he said that all colds were the result of contagion, due to a germ, the character of which no one had yet been able to determine. Every case of cold, therefore, should be carefully guarded, and the public should be educated to protect itself against this class of affections, which he held to be more destructive than smallpox or typhoid fever.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, Held at Salt Lake City, Utah, August 30 and 31 and September 1, 1906.

The President, Dr. M. L. Harris of Chicago, in the Chair.

President's Address.—Dr. Harris, in his address, departed somewhat from the custom of his predecessors of presenting a purely surgical subject for consideration, in order to take up a matter of a more general nature, yet one which he believed to be of the greatest practical importance. He referred to the question of testimony and evidence in medicine. The physician must recognize the possibility of error in the testimony of those who have every reason and intention to be honest. Therefore, in receiving knowledge of facts from others, one should be influenced by their accordance with facts previously known or believed, and this constituted what was termed their probability; but in being influenced, one must guard against two sources of error, namely, unbounded credulity and unyielding skepticism, for the former was the attribute of a weak mind, which seldom thought or reasoned, while the latter belonged to those who found nothing probable beyond their own limited field of observation and experience. That those things which accorded with one's own observations were more readily believed than those which did not, was quite natural, and thus the value of a wide experience became evident. Testimony and evidence were by no means the same. There might be a great deal of testimony, yet very little evidence. By evidence was meant "the means by which any alleged matter of fact, the truth of which is submitted to investigation, is established or disproved." This was the legal definition, but one which conveyed a better idea of the meaning of evidence as applied to medicine or the investigation of natural phenomena was that evidence in any fact which, when presented to the mind, effected or tended to effect a conviction concerning the existence of some other fact. This did not presuppose or assume any certain conclusion, but left the conclusion to be that which the evidence warranted. The value of the evidence in establishing the facts as such in any particular case varied greatly. Most of the testimony of patients was presumptive evidence of the disputable variety, and while the presumption was usually that the statements made were true, this was by no means always the case. For instance, in the case of a young woman with suppression of menstruation and an enlarging abdomen, experience had shown that the incentive to mislead was so great that the presumption was entirely in favor of the testimony being false. In medicine, he said, there were many hypotheses which were of the greatest value in enabling us to develop the facts, but when we came to the practical application of our knowledge to the individual case or to the giving of testimony before courts and juries, we should learn to recognize and to distinguish the assumed, the inferred, and the hypotheses, so as to confine ourselves to the known facts and the warrantable conclusions derivable therefrom.

Gastrointestinal Ulcer.—Dr. H. D. Niles of Salt Lake City referred to the causes and symptoms of gastrointestinal ulcer, and said that in developing our knowledge of this lesion we must bear in mind that ulcer was not only a producer of symptoms, as a primary lesion, but as the antecedent of many grave complications and sequelæ it might indirectly cause a great variety of puzzling symptoms, which the surgeon must try to interpret correctly. So long as in the consulting room and at the bedside of patients physicians permitted themselves to think of gastrointestinal ulcer simply as a theoretical possibility, of rare occurrence and obscure pathology, the symptomatic treatment would prevail, and unsatisfactory results would follow. As soon as we learned to appreciate that ulcer was not only a real pathological entity, but that it was the most common of all gastrointestinal lesions, a producer of distressing symptoms, and a forerunner of dangerous complications, we would find ourselves very near the true explanation of many obscure chronic abdominal symptoms, and we would be prepared to formulate a timely and rational treatment for the pathology that produced these symptoms.

Dr. Andrew C. Smith of Portland, Ore., said that gastrointestinal ulcer was common. It was a pathological entity that should be considered in all conditions of chronicity of abdominal symptoms. Formerly these cases were treated expectantly and continuously for long periods of time, practitioners not realizing the pathological condition. In the great majority of cases of chronic abdominal affections, gastrointestinal ulcer was and should be considered the prime lesion.

Dr. W. W. Grant of Denver said that gastroenterostomy for ulceration of the stomach and intestine, particularly the duodenum, and for obstructive lesions of these parts, was now one of the most common and conservative of modern operations. Like most new surgical triumphs, it was likely to be somewhat abused before it reached its proper status as a surgical procedure. Surgeons should be a little more conservative in the surgical treatment of these conditions, and not until there were manifest evidences of ulcer was it desirable to perform this operation. A large number of these cases were attended with a profuse acute hemorrhage. In many of the chronic cases the hemorrhage was not manifest, but the investigations of Rosenthal and Frederick showed that in these cases there was occult hemorrhage. This was shown chiefly by microscopical examination of the contents of the stomach and of the fecal discharges. When this condition existed and persisted, operation was unquestionably demanded. Operation, however, should not be undertaken until medical treatment and other non-surgical measures had had a reasonable trial.

Dr. B. B. Davis of Omaha said that in a number of instances of ulcer of the stomach and duodenum he had been able to get a definite idea as to the location of the ulcer by distending the stomach, whereas before this he was absolutely at sea. Whenever there was suspicion of ulcer either of the stomach, the duodenum, or intestinal tract lower down, the physician should resort to systematic daily examinations of the stools for blood. In a number of instances he had been able to arrive at a definite idea in this way.

whereas if he had been content with gross inspection simply he never would have suspected what had existed.

Dr. JOHN C. MORFIT of St. Louis said there was nothing that he admired more than radical conservatism. He liked to see a man who could use his head without using the knife, but who never used his knife without using his head. The greatest point in regard to gastrointestinal ulcer was not the operation; it was the diagnosis. Gastroenterostomy had been so perfected that it was now a comparatively simple procedure, and for that reason men with surgical tendencies might operate sometimes because they could, and not because they ought. He would hesitate to operate in a case of gastric ulcer until the patient was seen by a good internist and a good neurologist as well.

Dr. E. F. ROOT of Salt Lake City said it ought to be made plain to the general practitioner that ulceration of the bowel was very much more frequent than was previously supposed. General practitioners, men who were not doing very much surgery, not seeing the actual condition, were liable to have a vague impression of what was going on within the abdomen. If gastrointestinal ulcer was diagnosed, it should be dealt with surgically as soon as possible.

Dr. R. C. COFFEY of Portland, Ore., said that these ulcers were the seat of cancer in a very large proportion of cases. We had also learned that ulcer and cancer occurred in the same location. We had learned by observation that this location was where the gastrointestinal contents were detained for some reason or other. Ochsner had been working on the duodenum, and he thought that the duodenum was one among other locations for ulcer. We rarely saw ulcer at that point until we reached the cecum. A frequent seat for cancer was the cecum. Fecal matter was detained here for a while, then it passed over until it reached the sigmoid. Very rarely was cancer found at the splenic flexure, at the hepatic flexure, or in the transverse colon. The next frequent point for ulcer and cancer was the sigmoid; finally the rectum.

Dr. Niles, in closing, said that the first and most important step in our progress in this line of medicine was to realize the frequency of ulcer and to diagnose the acute pathology. The means of treating it would be taken up later.

The Surgical Treatment of Splanchnoptosis.—Dr. B. B. DAVIS of Omaha presented a brief statement of the anatomical changes found, and described the various surgical procedures which have been proposed and carried out for the relief of this condition. He gave a résumé of his own operations. He considered the relative merits of the several operations done, and discussed the value of surgery in extreme cases.

Late Phlebitis Following Clean Abdominal Operations.—Dr. W. W. GRANT of Denver presented that form of phlebitis culminating in the veins of the legs, which was known to occur most frequently about two weeks after simple, aseptic abdominal operations, without being preceded by faster pulse, elevation of temperature, pain, or any indication at present recognized of its advent. In the great majority of cases it culminated in the vessels of the left leg, no matter where the incision was made. He quoted at length from the literature, and showed that the etiology of this condition was still very hazy. His belief was that the cause of phlebitis of the epigastric, iliac, femoral, saphenous, and tibial vessels, occurring late after a perfectly aseptic operation, and clean, prompt healing of the wound, was probably not septic, with our present knowledge of pathogenic bacteria and their actions. The specific cause or causes were unknown. The cases, of which a good illustration was reported, were very difficult of satisfactory explanation. In the absence of convincing or pathological evidence, and in the face of profound surgical skepticism, it was not rational in the best and cleanest days known to surgery to assume infection that was devoid of satisfactory evidence. The condition which caused thrombosis before an inflammation, or the phlebitis preceding a thrombus, was the vital question. It was exceedingly difficult, in fact quite impossible, to reconcile the facts with the recumbent position, the simple ligature, or injury to small veins, in a distant field on the opposite side of the body, although admitting that infection might not come from the site of operation. The author believed there was a general condition affecting the composition of the blood that might be caused before operation, which was an essential factor in the cause of thrombophlebitis in these cases. A careful scrutiny of patients should be made before operation, and an examination of the blood made before and after operation. If the patient was chlorotic and anemic, or the conditions not satisfactory, the health should be improved, if delay was permissible, by the administration of iron and acids, and metabolism improved by a suitable food supply, while specific or constitutional affections should receive just consideration.

Dr. A. C. STOKES of Omaha said there was referred to him an anemic, pale woman, fifty-six years of age, in whom beginning carcinoma of the rectum was suspected. She was given an anesthetic for the purpose of examination. A speculum was introduced well up into the rectum without producing any great amount of traumatism to the mucous membrane. After this the patient was returned to bed and kept there on account of her anemic condition. Four days later she developed phlebitis. He was unable to say whether the phlebitis was due to the traumatism of the rectum or to the anesthetic. He thought it was the anesthesia, which produced a general toxemia in some cases, and this might produce in turn a chemical change in the blood, which at times might produce, in connection with rest in bed, venous stasis, etc. He was inclined to believe that the great majority of these cases were septic, and whenever he saw a case of phlebitis he always searched for a focus of infection.

Dr. HARRY M. SHERMAN of San Francisco cited one case from his own practice of phlebitis of the left femoral vein, and mentioned two others occurring in the practice of other surgeons, all three operations having been done by different men, and each operation being different.

Dr. LEONARD FREEMAN of Denver pointed out that femoral phlebitis occurred in connection with appendicitis, even when no operation was done. He had seen a double femoral phlebitis occurring in a case of appendicitis within a few days, with the patient not lying in bed. Phlebitis occurred in connection with other things, when there was no question about septic infection. For instance, in an ordinary Pott's fracture of the right leg, and in one case of simple fracture, left femoral phlebitis resulted in the course of a week or two. In another case of fracture of the left patella a right femoral phlebitis developed, and a left phlebitis afterward. These could not be explained by infection.

Dr. E. S. WRIGHT of Salt Lake City recalled his first case of phlebitis, following an operation for appendicitis. The appendix had ruptured and had filled the pelvis with pus. He drained through the cul-de-sac, and the vagina had become partially obliterated. Possibly the traumatism incident to the introduction of the speculum in this case contributed to the result. The patient recovered from the phlebitis without any particular treatment.

Dr. J. CLARK STEWART of Minneapolis said the general impression among pathologists was that thrombosis was in many instances of bacterial origin. The term sepsis was the *bête noir* of the surgeon, and naturally surgeons refused to accept sepsis as a cause of anything in connection with what they were doing. If the term bacteriemia was used, they would be perhaps more willing to accept it. It would seem that many cases, if not all, of thrombosis were due to bacteriemia. Pus bacteria entered the blood from sources unknown, and gave rise to such diseases as osteomyelitis. We knew nothing of the way the various bacteria got into the blood, but we knew in a great many cases there

was a distinct bacteriemia. There was only one way to do, and that was to have blood cultures made in cases of femoral thrombosis. Bacteria in the blood did not necessarily mean sepsis in a surgical sense, as a patient might have a certain number of bacteria circulating in the blood without clinical manifestations. It was only when some point of least resistance occurred that the lesions were localized.

Dr. Andrew C. Smith of Portland, Ore., recalled three cases of phlebitis in three different types of operations in his own work. None of them was immediately septic, but each of them was remotely septic. He attributed each case to the catgut, and thought the slight sepsis due to late disintegration of the chromic catgut, and the absorptions of toxins from that.

Dr. Union Worthington of Salt Lake City did not believe that trauma was a cause of phlebitis. Whenever he had a case of phlebitis it was his practice to look for infection, just as it had been his practice to look for a focus of pus when he saw a case of rheumatism. The fact that phlebitis more frequently occurred in the left leg than in the right had never been satisfactorily explained to him.

Dr. Grant, in closing, expressed the belief that blood examinations by bacteriologists and pathologists would have to settle the question. Pathologists had not been given a good chance thus far, because most of the patients recovered; but the rather dogmatic statement of Murphy that recumbency was the cause could not be accepted. It might be one of several causal factors.

The Principles and Mechanics of Abdominal Drainage.—Dr. R. C. Coffey of Portland, Ore., read a paper on this subject, in which he presented the following deductions: "1. Fluids are rapidly absorbed by the peritoneal cavity; crude or granular matter only through lymph spaces at the diaphragm. 2. A drainage tract always contains microorganisms. 3. Any form of drainage is isolated from the free peritoneal cavity in six hours. 4. A drain causes a flow of serum by irritation, which is profuse in proportion to the amount of drain within the peritoneal cavity. 5. This flow is delivered to the surface only in proportion to the amount of drainage passing out through the wound. 6. Serum and pus accumulate around drainage only when the drainage at the outlet is less than that contained inside, or is not sufficiently extensive to deliver the fluid before it is filled with débris and granulations. 7. Blood and pus are never found in the neighborhood of a properly applied drain after forty-eight hours. 8. The flow of serum dissolves blood clots and thick pus, leaving the gauze clean and white by the time it ceases. 9. The flow of serum does not occur to any extent in formed abscess cavities; therefore, blood and pus are not well drained from them by capillary drainage. 10. A tube will drain a walled cavity and will drain the peritoneal cavity under the influence of gravity, but not otherwise. 11. A single tube is much more likely to be choked by intestines and omentum than two or more parallel tubes. 12. Gauze drains in proportion to the amount coming through the opening, and will only drain when it is in contact with dressings or clothing, or when its outside end is at a lower level than the cavity to be drained. 13. Small gauze drains are likely to be choked at the exit, unless covered by a tube or protective. 14. There are three cavities of the peritoneum to be drained, the right and left flank, separated from each other by the spinal column, and the pelvis, separated from the flanks by the psoas muscles. Either flank holds more fluid, and is an inch deeper than the pelvis, and its bottom is more than four inches below the top of the divide made by the psoas muscle, on which the appendix rests. The body must be elevated to an angle of 51 degrees, to bring the bottom of the flank on a level with the divide, and 60 or 70 degrees to properly drain by the Fowler position. The entire cavity can be drained by gravity by a lateral position. 15. Drainage should always be in contact with the parietal peritoneum on one side. A line drawn from the center of the perineum to the tip of the shoulder passes through the pelvis and deepest part of the flank, and on the right side through the appendix. These diagonal lines we call the right and left drainage lines. Drainage should always be placed external to these lines or just above the pubic bone. 16. If only one of the three cavities is infected, it alone should be drained." His conclusions were: "Drainage must be extensive enough to do its work in less than six hours, and should reach the bottom of every infected cavity, either by gravity or drains. It should not be removed until it is loosened, which varies from six to fourteen days. Given the principles and mechanics of drainage, and a competent surgeon is able to fit his method to the case. Peritoneal drainage, intelligently used, is one of the most effective life-saving agents at our disposal."

Intestinal Suture.—Dr. A. F. Jonas of Omaha described and demonstrated a modified intestinal suture.

Complications, Accidents, and Sequelæ Incident to Prostatectomy.—Dr. J. N. Warren of Sioux City, Iowa, spoke of the condition of the gland influencing operation, and also of the presence of active or chronic infection. He referred to the condition of the bladder as to contraction or dilatation as a complication; also the presence of vesical calculi, accidents, hemorrhage, puncture of the bladder, rectovesical fistula, rectal fistula, and methods of management, sequelæ, incontinence or retention necessitating resumption of catheter, impotence, etc.

Dr. George Goodfellow of San Francisco said that up to the present time he had made 105 operations for the removal of prostates, with two deaths. He gave a full explanation of the cause of this low mortality.

Dr. Grant asked as to the proportion of cases suffering from incontinence.

Dr. Goodfellow replied that he had had no case of total incontinence. He had had up to the present time four cases of partial incontinence, in which the patient was able to retain from four to six ounces of urine for a short time. The cases of total incontinence usually never lasted over four months. In one case a fistula lasted eleven months.

Dr. Charles H. Mayo of Rochester, Minn., said that prostatectomy was not a minor operation. It had a fixed mortality that any type of serious operation would involve. He believed that the mortality from this operation was about 6 per cent. Dr. Goodfellow, an expert in this line of work, had a better mortality rate than most surgeons.

Massage of the Heart in Apparent Death from Anesthetics.—Dr. D. S. Fairchild of Des Moines, Iowa, reported a case of massage of the heart in apparent death from anesthesia, and reviewed the literature of twenty-four other reported cases. He spoke of the time after arrest of the heart when positive results might be expected. He discussed the best route for approaching the heart for the purpose of massage.

Peripheral versus Intracranial Operations for Tic Douloureux.—Dr. Charles H. Mayo of Rochester, Minn., said that more methods of internal, external, and surgical treatment had been advanced for the cure of facial neuralgia than for any other condition. In 1896 Dr. Abbe reported a case in which he interposed mechanical obstruction to the reunion of the nerve, by placing rubber tissue over the foramina of exit of the nerves in the skull. For nine years Dr. Mayo had employed silver screws to obstruct the infra-orbital foramen after torsion and removal of the nerve by the Thiersch method. For a shorter period the inferior dental canal had been obstructed, with equal success. While not as effectual as the intracranial operation, because of the numerous branches, still the method controlled the two branches most commonly affected. It could be employed on many who would not submit to an intracranial operation, with its attendant mortality and occasional failures to cure.

Aneurysmal Varix.—Dr. J. Clark Stewart of Minne-

apolis read a paper on this subject, in which he reported an interesting case of large aneurysmal varix of the forearm, and exhibited photographs. He presented histories of such cases, and described the operative methods used. He likewise discussed the proper treatment of the lesions in the upper and lower extremities, and considered the radical difference in the conditions present.

Sarcoma of the Male Breast.—Dr. F. GREGORY CONNELL of Salida, Col., reported this case. The patient was twenty-five years of age. The mother had both breasts removed for cancer. There was no history of traumatism. The tumor started in a congenital discoloration of the skin near the right nipple, and in three months had grown to the size of a walnut. The breast and axillary glands were removed. The healing of the wound was perfect. Two months after discharge the patient presented himself for examination, and a keloid was found to have developed in the cicatrix. When last seen, six months later, the keloid was smaller, and there was no evidence of a recurrence of the sarcoma. Histological examination showed the tumor to be a spindle-celled sarcoma. The author made some remarks upon the frequency of this condition in the male, and reviewed the literature.

Malignant Complications and Degenerations of Uterine Fibromyomata.—Dr. CHARLES W. OVIATT of Oshkosh, Wis., in a paper on this subject, said the conclusions which were forced upon him by a study of reported cases were: "(1) Women suffering from fibroid disease of the uterus incur a greater risk in allowing it to remain than in having it removed by a competent surgeon. (2) The fact that adenocarcinoma of the body of the uterus occurs much more frequently in cases of fibroid tumor than does cancer of the cervix gives rise to the belief that there must be a direct causative relation between fibroid tumors and cancer of the body of the uterus. (3) Every fibroid tumor removed should be subjected to careful laboratory study, no matter what its gross appearance."

Treatment of Tuberculosis of the Kidney and Bladder by Nephrectomy.—Dr. LEONARD FREEMAN of Denver, Col., after detailing fourteen cases upon which he had operated for tuberculosis of the kidney and bladder, drew the following conclusions: "(1) Tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily. (2) It is usually at first unilateral. (3) Medical or climatic treatment is unsatisfactory in most cases. (4) The ideal treatment is early nephrectomy, providing there is one sound kidney. (5) Tuberculosis elsewhere, unless far advanced, is not a contraindication to operation. (6) Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy, and can seldom be cured without it. (7) The demonstration of tubercle bacilli in the urine often fails. (8) The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal with time."

Injuries of the Ureter.—Dr. A. H. KERR of Salt Lake City read a paper on this subject, in which he reported a case of ureteral cystostomy or ureterovesical implantation.

Operative Procedures for Chronic Urethritis.—Dr. A. C. STOKES of Omaha discussed incurable gonorrhea in the male. He gave the reasons why this disease is so often not cured, and spoke of the havoc worked by gonorrhea in civilized communities. A minute anatomical and pathological diagnosis must be aimed at, and having once arrived at a definite diagnosis as to the position of the infection, one should resort to the methods that are most applicable to its treatment. He spoke of external urethrotomy in its relation to chronic gonorrhea, and of operations for vesiculitis, prostatitis, and old infections of the vas deferens. He reported four cases in which chronic gleet was treated by external urethrotomy and cauterization of the prostatic follicles and urethra. He discussed vasotomy in the treatment of infections of the seminal vesicles and epididymis. He described the technique of the latter procedure, and reported five cases in which he had operated.

Papers were also read by the following members: "The Control or Elimination of Pneumothorax During Operations on the Chest," by Dr. Dudley Tait of San Francisco; "Abdominal Contusions," by Dr. Wm. Jepson of Sioux City, Iowa; "A Point in the Technique of Ligating the Appendix in Appendectomy," by Dr. Jabez N. Jackson of Kansas City, Mo.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Chas. W. Oviatt of Oshkosh, Wis.; *First Vice-President*, Dr. S. C. Baldwin, of Salt Lake City; *Second Vice-President*, Dr. Jabez N. Jackson, of Kansas City, Mo.; *Secretary-Treasurer*, Dr. Arthur T. Mann of Minneapolis.

St. Louis, Mo., was selected as the place for holding the next annual meeting, in the latter part of December, 1907.

AMERICAN PEDIATRIC SOCIETY.

Eighteenth Annual Meeting, Held at Atlantic City, N. J., May 30, 31, and June 1, 1906.

THE PRESIDENT, DR. A. JACOBI, OF NEW YORK, IN THE CHAIR.

(Special Report to the MEDICAL RECORD.)

First Day—Wednesday, May 30.

Suggestions as to the Classification of Gastroenteric Diseases on an Etiological Basis.—Drs. THOMAS MORGAN ROTCH, MAYNARD LADD, and CHARLES H. DUNN of Boston presented this communication. The following classification had been adopted by the department of Pediatrics of Harvard University. Objections to former classifications were that they were on several different bases, and there were many difficulties in the way of classification on an anatomic and on a symptomatic basis. Recent progress showed a distinct tendency toward the adoption of the etiological basis.

GASTRIC.

Developmental	Malpositions	
	Malformations—	Pyloric Stenosis
Noninfectious	Mechanical	Contraction
		Dilatation
	Ulcers—	Peptic
	New Growths	
	Functional	Nervous Vomiting
		Recurrent Vomiting
		Indigestion
	Traumatic	Corrosive Gastritis
Infectious	Gastritis	

ENTERIC.

Developmental	Malpositions		
	Malformations		
Noninfectious	Mechanical		
		Dilatation of Colon	
		Volvulus	
		Intussusception	
		Hernia	
		Fissure	
		Prolapse	
		Hemorrhoids	
	New Growths		
	Functional		
		Nervous Diarrhea	
		Indigestion	
		Duodenal	Deficient Secretion
		Intestinal	Fermentation
		Incontinence	
		Constipation	

Infections

Infectious Diarrhea { Dysentery / Cholera Infantum / From Other Organisms.

Proctitis

Appendicitis

Fistulæ

Intestinal Worms.

Dr. L. Emmett Holt of New York thought that all were coming in the end to classification on an etiological basis. Yet there were some points on which there was a difference of opinion; yet, in the main, he favored the scheme. It was a definite addition to the ideas on the subjects.

Dr. B. K. Rachford of Cincinnati asked why enteritis was dropped in the classification.

Dr. A. Jacobi of New York asked if, under enteric diseases, ulcers had been left out on purpose.

Dr. J. P. Crozer Griffith of Philadelphia believed this to be a great improvement upon past classifications.

Dr. Rowland G. Freeman of New York thought it might be advantageous to divide the classification on an anatomical basis, as seen at autospy.

Dr. Thomas Morgan Rotch wished it to be understood that the classification presented was a PRIMARY one, and subdivisions might be added after further study

Some Phases of the Feeding Problem.—Dr. L. Emmett Holt read this paper, and asked for greater simplicity and flexibility in infant feeding. Healthy children should not have a proportion of fat above four per cent., and sometimes even three per cent. was excessive, and very often one per cent. was the limit. More failures in modified milk occurred because of the avoidance of the proper proportion of fat than from anything else. Reason was a lack of knowledge of the child's normal capacity of digestion. Dr. Holt's method was to multiply the percentage of fat in the milk by the number of ounces of milk in the formula, and divide this by the number of ounces called for in the formula. He asked for a method for remedying the evil, although his hopes were centered upon the students of medicine, who should be properly taught the normal range of milk percentages, as well as the approximate percentages of ingredients of the whole milk, the top milk and the cream; they should also be taught the simplest possible method of obtaining the percentages desired.

Acidified Milk in Infant Feeding.—Drs. John Lovett Morse and Henry J. Bowditch of Boston presented this paper. They told of the souring of milk by lactic acid forming organisms. Buttermilk consisted of cream, etc., with casein, in finely divided form, and with large proportion of albumin. This should not be used, except when other foods could not be digested. Stools always were found to be alkaline in reaction. Buttermilk had a large fat content, and was usually used with the addition of sugar flour, and had always been taken willingly. Buttermilk was particularly valuable in cases of chronic indigestion, and after the starvation period of acute diarrheas. The question arose whether the good resulted from the acidity, from the presence of bacteria, or from both. Reports of cases followed. He concluded that milk acidified with bacterial living organisms did well, even in young infants. The addition of cream to buttermilk added to its caloric value. Practically all the babies did well on pasteurized buttermilk, and this food could be used whether children were well or ill. Possibly unpasteurized buttermilk would give better results than the Pasteurized.

Dr. Graham of Philadelphia asked how long babies were kept on the buttermilk

Dr Thomas S. Southworth of New York referred to the form in which casein existed in buttermilk, and said the different types should be more studied. The lactate of casein should be more readily digested than the tough curds so often encountered.

Dr. I. A. Abt of Chicago asked whether in the absence of fat, the carbohydrates, in the form of starches and sugars, could make up for its loss.

Dr. John Lovett Morse of Boston, in answer to Dr. Graham's question, said that babies with acute diarrhea had been kept on buttermilk from three days to two weeks Dr. Abt's question he could not answer.

Observations Concerning the Nature of Atrophy of Intestinal Origin.—Dr. D. L. Edsall of Philadelphia reported some results of observations made, yet incomplete. Further studies were to be made and reported.

Dr. L. A. La Fètra of New York and Dr. A. H. Wentworth of Boston, discussed these observations.

Modified Wet Nursing.—Dr. Thompson S. Westcott of Philadelphia read this paper. He spoke of the great difficulties attending the endeavor to secure a suitable wet nurse, even at any price. His paper dwelt more with those cases in which the infant's life was at stake. The method consisted in the giving of human milk in combination with some artificial food. Sometimes two or three women would contribute in this life-saving of the infants. Dr. Wescott related the history of a case, illustrating the value of this method of infant-feeding.

Dr. A. C. Cotton of Chicago called attention to the revivifying influence of even a few drops of mother's milk upon the baby. He said that more should be taught regarding the value of mother's milk than to percentages. He thought that every local pediatric society should take up this matter and form a bureau or registration for wet nurses, under a competent committee appointed by the local society.

The Relationship of Weight and Length in Infancy.—Dr. Rowland G. Freeman showed a number of charts, showing the comparative curves of weight and measurements of 500 institutional children, divided into well-nourished, fairly-nourished and poorly-nourished children. During the first year of life the primary factor in increasing the body was the increase in weight. The influence of age was of very much less importance.

Weight in the First Two Weeks of Life.—Drs. J. P. Crozier Griffith and J. Clayton Gittings of Philadelphia presented this communication which considered the birth weight and the causes influencing it. Also the loss and gain in weight during two weeks of life, and the factors influencing it. They asked whether the initial loss was *physiological*. They weighed 226 infants, with an average initial weight of 7 lb. 9.9 oz. There were 111 males and 115 females. There was an average difference of 3 oz. between male and female initial weights. By comparison, fair average birth weight might be considered as males averaging 7 lb. 8 oz., females averaging 7 lb. 3 oz., an average difference between the sexes of 5 oz. The initial weight might vary considerably, and infants weighing from 6 to 9 lbs. might be considered normal. Apart from the influence of the sex of the child, a number of other factors must be considered as affecting birth weight. These figures did not show the steady increase of Fleischmann, yet Duncan's statement was confirmed by them that the largest weight fell between twenty-fifth and twenty-ninth years. Their observations on 226 cases gave an average weight of children of primiparæ equaling 6 lbs. 14.37 oz., and of multiparæ 7 lbs. 10.72 oz. They concluded that increase in weight was to be expected in the children of multiparous as compared with primiparous woman. The increase would vary from 2 to 12 oz. In their own observations upon alterations in weight, 165 full-term children were studied. From a study of their results, it was apparent that the "ill" cases suffered a loss only slightly greater than the healthy cases, but the time of the initial loss was prolonged and the day of regain was later. In general, they concluded that in the majority of the cases the minimum weight was reached by the third or fourth day, and the initial weight was regained by the tenth to the fourteenth day. Haake believed the initial loss in weight was physiological. This was to be looked upon as one of the links in the chain of physiological changes in the new-born.

Dr. L. Emmett Holt of New York said figures of his own corresponded with those of Dr. Freeman.

Dr. Henry Koplik of New York criticised the custom of most practitioners of force-feeding the baby during first days of life. There was much traumatism produced by placing a baby at breast every two hours during first twenty-four hours.

Dr. F. S. Churchill of Chicago said he had noticed that in breast-fed babies the rate of gain was very apt to fall off about the sixth or seventh month.

Dr. Thomas Morgan Rotch said that some significance should be attached to the fact that in the third quarter the stomach did not grow so rapidly as during the first and second quarter.

Dr. A. Jacobi of New York emphasized the importance of giving these babies plenty of water to supply the amount lost during first few days.

Dr. Henry D. Chapin of New York also discussed the papers. Discussion was closed by the readers of the papers.

Primary Tuberculous Infection of the Intestine in a Nursing Baby, with Specimen.—Dr. Irving M. Snow of Buffalo reported this case, and presented the specimen. The patient died of intestinal hemorrhage. The autopsy showed interesting findings in stomach and intestines. Eight inches from the ileocecal valve was a mass of lymph nodes. There was ulceration of the intestine, and above that point the gut was filled with blood. There was also ulceration of the stomach. The colon contained blood. Sections of pustules on the skin revealed the presence of the tubercle bacilli. The source of infection was through the nurse. Some had claimed that the tubercle bacilli could pass through the intestinal mucosa without leaving any trace whatever.

Dr. B. K. Rachford of Cincinnati reported the case of a child born of a woman far advanced in tuberculosis. This child was wet-nursed and placed in the best hygienic surroundings, and now, twelve years of age, was in splendid health and without a symptom of tuberculosis.

Dr. Wm. P. Northrup of New York related a case directly opposite to the one related by Dr. Rachford, the baby, at the age of six weeks, dying with cavities in both lungs.

Dr. Rachford asked if it was true that there was a primary tuberculosis of the intestinal mucosa and a secondary tuberculosis of mesenteric nodes.

Dr. Samuel S. Adams of Washington said that, in his experience, in the majority of the cases the mesenteric glands were found to be tuberculous, with but little lesion of the mucosa.

Dr. Thompson S. Westcott of Philadelphia reported the instance of a child dying at the fourth month that exhibited tuberculosis of the lungs apparently secondary to extensive involvement of the bronchial glands at the root of the lung, one of which was very large and cheesy.

Dr. L. Emmett Holt of New York was particularly interested in tuberculous lesions of the skin. He believed many cases had been overlooked because we looked for milk infection to the exclusion of other sources of infection.

Dr. S. McC. Hamill of Philadelphia and Dr. Alfred Hand, Jr., of Philadelphia, discussed the paper. The discussion was closed by Dr. Snow.

Tuberculous Cervical Adenitis in a Four Months' Infant.—Dr. L. E. La Fétra of New York made this report, because of its rarity, and because of certain interesting questions that arose in connection with it. The family history threw no light upon the origin of the affection. The child was born at full term, was strong and healthy, was nourished by a combination of maternal nursing and bottle feeding, the milk being produced under the best conditions. When three weeks old he developed a cold in the head, which soon passed off. When seven weeks old he developed a second cold. The tonsils, especially the right, showed a little exudate, but with little redness or swelling. Under treatment the condition improved. A third attack of cold followed, which lasted thirteen days. When ten weeks of age a slight swelling appeared on the right side of the neck, consisting of three lymph nodes, which remained the same size for about ten days, then increased rapidly for a few days, but without any rise of temperature above 100.5° F. Soon the swelling was the size of a walnut, and quite hard, and the node outlines became lost. Then the swelling diminished, and the three nodes were again distinctly felt, firm, not tender and movable. Again the swelling began, and the outlines of the separate nodes were lost, and there was indistinct fluctuation in the tense lobulated mass. Dr. Chas. N. Dowd was called in consultation, and, upon his advice, the neck swelling was operated upon. The lymph nodes were found to be quite large, soft and hyperplastic, but there was no suppuration. When opened the nodes showed grayish granular material, but no distinct pockets of liquefaction. There was very little fibrous tissue about the lymph nodes. The microscopical examination showed extensive early tuberculosis. There were many areas of degeneration and necrosis in the lobules of the nodes. These areas were surrounded by a slight amount of productive inflammation.

Dr. Henry Koplik of New York did not believe the tonsils to be the source of infection in so many cases of infection of the cervical lymph nodes, as was so generally supposed.

Dr. A. C. Cotton of Chicago and Dr. Hess of Chicago discussed the paper.

A Case of Tuberculous Pericarditis, with Frequent Aspiration of Fluid from the Pericardial Sac. Death from Tuberculous Meningitis.—Dr. Alfred Hand, Jr., of Philadelphia, reported the case of a boy, 8 years old. From the history of the case and examination of the aspirated fluid, a diagnosis of pleuroperitoneal tuberculosis was made. Symptoms of tuberculous meningitis appeared, and the patient died soon after. The findings of an imperfectly recorded autopsy were reported.

Dr. J. P. Crozer Griffith of Philadelphia sympathized with the difficulties in making the diagnosis of tuberculous pericarditis.

Dr. I. A. Abt of Chicago spoke of the dangers of doing pericardial aspirations. In one case death followed cutting through both parietal and visceral pericardium, which were adherent.

Dr. Henry Koplik of New York said that pericardial aspirations were dangerous in infants and children, this danger being increased by the sacculation which occurs so often in young subjects.

Dr. Thomas Morgan Rotch of Boston said that a dilated heart did not extend much to the right of the sternum when at or below the fifth intercostal space. When effusions were present they would occupy the same area, so far as percussion showed.

Dr. John Lovett Morse of Boston said that one should not aspirate unless he felt that it was necessary.

Dr. D. L. Edsall of Philadelphia called attention to the differential point of throwing the patient forward on the front of the chest, to determine the influence of this position upon the compression signs at back of chest.

Dr. Alfred Hand, Jr., closed the discussion.

The Teaching of Scientific Infant-Feeding. A Plea for More Uniformity.—Dr. Henry D. Chapin of New York read this paper. He said that many years' experience in teaching the subject of artificial infant feeding to post-graduate students had shown that the subject was not as clear to them as it might be, and that they did not look upon it as being established on a firm, scientific basis, and it could not progress uopn such a basis until some principle were etablished beyond dispute. One of the first things to be settled was a uniform nomenclature, so that terms should be used in a restricted and definite manner. Much of the work done on infant feeding had less value than it ought to have from the amount of work expended, because it was uncertain just what many terms were intended to cover. For instance, in the earlier analyses of milk all of

the nitrogenous bodies were called casein, then they were called albumin, albuminoids, and proteids. Later the word casein was applied to the curd-forming portion of the proteids. It was not at all unusual to find these terms used indiscriminately in modern text-books. The introduction of the term caseinogen had increased the confusion. Dr. Chapin said it would be more scientific to state what form of casein was being fed, as follows: Simple diluted milk, normal calcium casein; milk and lime water, basic calcium casein; milk and bicarbonate of sodium, basic calcium casein and antacid; milk and citrate of sodium, sodium casein; buttermilk, casein lactate. From what he said, it was apparent that when foods having such different properties were used, it was important to report more than their percentage composition, as their behaviors in the stomach were so unlike.

The "23 Cure."—Dr. Wm. P. Northrup of New York read this paper, which dealt with living twenty-three hours out of the twenty-four in the open, fresh, flowing air. This was especially beneficial in cases of convalescence from acute illness and in cases of delicate children. The quality of the cold or cooled fresh air was essential. The cold, fresh, flowing air uniformly had certain effects upon young children. They slept better, took and assimilated more food, and rarely did they catch cold. At See Breeze, Coney Island, no child had ever contracted pneumonia because of living so long in the open, cool, fresh, flowing sea air.

Second Day—Thursday, May 31

The President's Address.—Dr. A. Jacobi of New York, himself serving a second term as President, thought that a second term should not be allowed. He considered cases of membranous throat diseases, and stated that they behaved differently, according to the location of the membrane. For instance, if limited to the tonsils, there would be but little glandular swelling in the neighborhood. If this extended beyond the tonsil, or started away from the tonsil, the neighboring lymph bodies became involved. In uncomplicated cases of laryngeal diphtheria there practically was no glandular swelling or fever. This latter fact had been known for thirty years. An explanation of this amount of involvement was to be found in the consideration of the anatomy of the parts; this Dr. Jacobi considered. It was formerly concluded that no germ or toxin could gain entrance to the circulation unless there was a break in the walls; a surface lesion must be supposed to exist if living germs or toxins were to gain entrance. In conclusion Dr. Jacobi offered certain facts in connection with the absorbing and transmitting power of the tonsil. The surface epithelium of the tonsil was not uniform, and might admit foreign material without any lesion. Thus invasion without lesion was possible.

Anemia Infantum, Pseudoleukemia of von Jaksch.—Dr. Henry Koplik of New York read this paper. He considered the three theories of the condition. He reported nine cases, covering a period of five years' observation, all being hospital cases and subjected to close study and examination. Three of the nine cases terminated fatally. He called attention particularly to the instability of the blood pictures, even when under observation without variations in the clinical symptoms. There was no definite pathological picture, but a severe anemia in subjects in whom there were disturbances of the function of the blood-forming organs, causing a retrograde to the fetal condition. The clinical features were characteristic. There was nothing specific in post-mortem findings, nothing to distinguish it from any other severe anemia. There was nothing either to suggest leukemia except enlarged liver and spleen. These cases fall easy victims to tuberculosis and pneumonia.

Dr. John Lovett Morse of Boston said the symptom complex was that of von Jaksch's anemia. He did not believe this should be separated out and given a special name in the class of severe anemias.

Dr. S. McC. Hamill of Philadelphia reported the case of a colored child, who gave the clinical picture of von Jaksch's disease. The child had been anemic for a number of months. The only symptom, not commonly associated with von Jaksch's disease, was the persistent elevation of temperature. The child died of a pneumonia, and at autopsy there was found a marked enlargement of the spleen, which was the seat of a miliary tuberculosis; the spleen was simply riddled. He wondered if the case was primarily one of von Jaksch's disease.

Sepsis in the Newly-Born, with Post-Mortem Reports.—Dr. A. C. Cotton made a very full and detailed report, particularly of the post-mortem findings, macroscopical, microscopical, and bacteriological, of two cases.

Dr. S. McC. Hamill of Philadelphia said that he had already reported twelve such cases to the society, and then reported another case.

Dr. D. L. Edsall of Philadelphia wished to emphasize the value of blood cultures in those instances in childhood where the diagnosis was difficult, reporting a case to show his contentions.

Dr. Thomas Morgan Rotch of Boston told of the value of blood cultures and of the difficulty in getting the blood in infants.

Dr. Henry Koplik of New York referred to the patches found in the mouths of newly-born infants, and quoted Ebstein's theory as to their formation.

A Case of Septic Endocarditis.—Dr. B. K. Rachford of Cincinnati reported the case of a boy, four years old, who entered the hospital with scarlet fever. One week later endocarditis developed, which was not associated with cardiac distress. He was in the hospital sixty-eight days, and was discharged in good condition. Five days later he was taken ill with ulcerative tonsillitis. This was followed by a septicopyemia. The symptoms gradually subsided, and the child improved in health and strength. He next contracted measles, which aggravated the endocarditis. A bronchopneumonia developed, and then a cancrum oris, and he died 139 days after the onset of the scarlet fever.

A Case of Septic Endocarditis Following Suppurative Otitis Media.—Dr. Alfred Hand, Jr., of Philadelphia, reported the case of a girl, eleven years old, with hereditary syphilis, who had rheumatism when nine years old and measles when ten years old. There was a sudden onset of attack, with fever, dizziness and great thirst. Before admission she was in stupor. On admission the temperature was 103.2° F., and at death, forty-eight hours later, it was 108.4° F. Autopsy findings were reported.

Dr. Thomas Morgan Rotch of Boston said the various forms of endocarditis would be divided on an etiological basis, as septic, rheumatic, from influenza bacillus, etc.

Dr. Henry Koplik of New York reported a case of septic endocarditis, in which there was no history of rheumatism or murmur over the heart. Rheumatism may develop with a septic form and *vice versa*.

Dr. D. L. Edsall of Philadelphia reported a case similar to Dr. Hand's case, in which blood culture proved of great diagnostic value.

Dr. John Lovett Morse of Boston said that few physicians in private practice realized how often a general infection of the ear, with thrombosis of the lateral sinus, caused disease of the endocardium.

Dr. Leroy M. Yale of New York and Dr. F. S. Churchill of Chicago discussed the paper. Discussion was closed by Dr. Hand.

Inorganic Late Systolic Murmurs in Infancy and Childhood.—Drs. S. McC. Hamill and Theodore Le Boutillier of Philadelphia presented this paper. From descriptions in the literature, they said they felt justified in assuming that all murmurs described as functional, inorganic, or anemic, being systolic in time, and having their point of maximum intensity in the pulmonary area, were identical with the murmur which they were to discuss. This murmur did not occur with the first sound; the first sound was always distinctly audible, and the murmur was superadded.

sometimes with a definite interval of silence, especially when it was not loud, and was mesosystolic in time. This was one of the principal characteristics of the murmur. It was ordinarily soft blowing in character, moderately high-pitched, occasionally almost musical, and more rarely low-pitched and rough. It varied in length and in duration. Its point of maximum intensity was most often the second left interspace close to the sternal border. The position of the patient, the respiratory act, and exercise, had a striking influence upon this murmur. It was always greatly increased in the recumbent posture. It was best heard at the end of expiration, and was exaggerated by exercise. The character of the second pulmonic sound in their experience had been invariably accentuated. Ordinarily, the murmur was not transmitted over a very wide area. The position of the apex beat was not altered, and the area of heart dullness was not increased. In the series of eighty cases reported, there were but a very few instances of a marked degree of anemia, and in one case, in which the murmur was present, the hemoglobin content was 100. They were unable to offer any new theory as to the cause of the murmurs. Adding together the number of cases examined consecutively in the preparation of a former paper, and forty-six cases examined consecutively in the preparation of this paper, there was a total of eighty cases, of which fifty-three, or 66.2 per cent., showed the murmur. Of these eighty cases, forty-eight were under five years of age, and of this number thirty-two, or 66.2 per cent. had the murmur. Of the thirty-two remaining, all of whom were over five years of age, there were twenty-one, or 65.3 per cent., with the murmur. On the basis of these figures, therefore, it would seem that in institutional children, showing no special manifestations of disease, acute or chronic, but influenced by their environment, between 60 and 70 per cent. had the type of murmur under discussion, and that this murmur was quite as common in children under five years of age as in later childhood.

Dr. Wm. P. Northrup of New York referred to the work done at Infants' and Foundling Hospital, and said that in fourteen or fifteen years only one case was found of ulcerative septic endocarditis, although many murmurs as described by Dr. Hamill, but in no case could a lesion be discovered.

Dr. Henry Dwight Chapin of New York said he was often confused by hearing murmurs, particularly at the base of the heart, which he could not account for. Not infrequently they disappeared. He felt sure that in children we had murmurs, and they were more common, but not organic.

Dr. D. L. Edsall of Philadelphia said he often heard this murmur when there was no disturbance of health. He also noted it in cases of typhoid fever. Pressure of the conus arteriosus against the chest may produce murmur, a point Dr. Thayer and Dr. McCallom had called attention to.

Dr. L. E. La Fètra of New York was impressed with presence of this murmur in all kinds of fever, and he had called it a "functional fever murmur."

Dr. L. Emmett Holt of New York said that with marked degrees of anemia murmurs were present. He called attention to difficulties of diagnosis of functional murmurs from congenital murmurs when unaccompanied by cyanosis.

Drs. I. A. Abt of Chicago, John Lovett Morse of Boston, D. L. Edsall of Philadelphia, and Thomas Morgan Rotch of Boston discussed the paper. Dr. Hamill closed the discussion.

Multiple Rhabdomyomata of the Heart Muscle.—Drs. J. H. Knox and E. H. Schorer of Baltimore reported this case, which occurred in a marantic colored infant of seven months of age. She was admitted to the Thomas Wilson sanatorium. The tumors were described as firm, grayish-yellow masses, 3 to 5 inches in diameter infiltrating the myocardium; there were also larger tumors, one about 2 cm. in length, pedunculated, and arising from the apex of the ventricle, and extending almost to the aortic valve. At the base a tumor mass, about 1 cm. in diameter, was present, having the same characteristics. On microscopical examination these tumors were found to consist of spongy material, made up of numerous spaces, many of which contained large, round or polygonal cells, with processes running to the periphery of the spaces. An examination with the higher power of the microscope showed many of these septa about the spaces to be finely striated, and here and there continuous with the muscle cells of the myocardium. In other portions of the tumors these clear spaces were less frequent, and the structure was composed rather of fibers, some parallel, others irregularly striated and continuous with the heart muscle. In these larger fibers crossed striations were very evident. In the literature but few cases similar to the one reported had been found. The explanation of the clear spaces was still uncertain. The authors held the view expressed by Seifert, that the tumors probably arose from proliferation of embryonic cells in the myocardium, and that the clear spaces represented probably retraction of the protoplasm, which formerly may have filled the whole spaces, leaving the striations at the periphery such as were found in the developing embryonic muscle cells. The possibility of the relation of this tumor to Purkinjie's cells, not dissimilar in appearance, and to the cells in the atria ventriculi bundle mentioned by Erlanger in his work upon heart-block, was also referred to.

A Sugar of Milk Graduate.—Dr. Rowland G. Freeman of New York presented this instrument.

The Siphon Aspirator.—Dr. F. Huber of New York presented this. He said the Dieulafoy aspirator was so well known that no detailed description was required. The manner of using it, alternately filling and emptying the glass cylinder, was a familiar story. It was rather a complicated process, one that could be materially simplified. For more than twenty years the writer had employed the following modification. After the chest had been punctured several ounces of the fluid exudate were allowed to flow into the syringe barrel in the usual manner, when the distal stop-cock was opened (the proximal also remaining open), the fluid escaped through this tubing into the receptacle placed on a lower level (chair or floor), as the instrument itself was on the bed it was below the level of the chest. The action was somewhat similar to that of a siphon, the expulsive force or *vis a tergo* being the expulsive power of the pulmonary tissue (the expanding lung filling the space formerly taken up by the serous or seropurulent exudate). This application of the "Dieulafoy" led (after a series of experiments) to the idea of the little instrument he demonstrated. It consisted of two pieces of tubing, appropriate needle, and glass barrel with necessary fittings. An ordinary aspirating or exploring syringe about three and one-half inches in length, holding less than one-half ounce (the lower fitting replaced by a cap provided with two stop-cocks), was employed as a substitute in place of the expensive and elaborate glass cylinder, with the rack and pinion action of the Dieulafoy apparatus. The preferable method of using the apparatus was to fill the tubes and barrel with a sterile salt solution, the distal stop being then closed. The chest was tapped in the usual way, and as soon as the outflow stop was opened, the fluid escaped without any trouble, provided the instrument was on a lower level than the thorax.

Presentation of Some Specimens of Foreign Bodies in the Bronchi and Intestines in Children.—Dr. Thomas Morgan Rotch of Boston presented specimens of foreign bodies in the larynx, bronchi, intestines, etc.

Dr. Wm. P. Northrup of New York spoke of the use of the bronchoscope in the hands of Dr. Emil Mayer, as an aid in removing foreign bodies.

Dr. L. Emmett Holt of New York told of the uselessness of symptoms in locating foreign bodies. He thought surgeons were too willing to operate for foreign bodies in the intestines.

Dr. Henry Koplik of New York referred to the value of

the bronchoscope in extracting a bent pin from a child's bronchus.

Cases of Bromide Eruption.—Dr. L. EMMETT HOLT of New York presented photographs showing the bromide eruption, 170 grains having been taken in ten days. The eruption first showed on the seventh day. Six weeks later it had about disappeared.

A Case of Measles Superimposed on Scarlatina.—Dr. J. P. EATON of Pittsburg reported this case because of its rarity. There was double desquamation and absence of complications.

Koplik's Sign in a Recent Epidemic of Measles.—Dr. J. P. EATON of Pittsburg made this report, having had an opportunity in a recent epidemic. Sixty-eight cases were observed. In thirty-two the discrete spots were recognized from one to three days before the appearance of the rash. In twenty-eight cases the exanthem was present, while in eight cases no exanthem was observed at any time. Drs. HENRY KOPLIK of New York, GRAHAM of Philadelphia, SAMUEL S. ADAMS of Washington, and GEORGE N. ACKER of Washington discussed the first paper, and Dr. ROWLAND G. FREEMAN of New York discussed the second paper.

Area of Impaired Resonance Behind and Beneath the Inner Third of the Left Clavicle.—Drs. S. McC. HAMILL and THEODORE LE BOUTILLIER of Philadelphia presented this paper. This area of impaired resonance was probably due to the posterior position of the lung and the more intimate contact of the chest wall with the great vessels.

Acute Nonsuppurative Encephalitis in Children.—Dr. I. A. ABT of Chicago read this paper and reported two cases. The first child had previously been healthy, but was suddenly taken ill with high fever and unconsciousness, which continued about ten days, when he awakened from his stupor, but was generally paralyzed. The use of one side recovered in a few days, but he now had a right-sided hemiplegia. The intelligence had not suffered to any marked degree. Lumbar puncture was not made, because the father asked that this procedure be omitted. The second case was one called polioencephalitis inferior.

A Case Simulating Peptic Ulcer.—Dr. SAMUEL S. ADAMS of Washington read this paper. The patient was a colored child, eleven years old, who, two hours after a hearty breakfast, complained of severe pain in the stomach, and soon vomited matter described as blood; vomited several times and had severe hiccough. One of the externes made a diagnosis of peptic ulcer from the symptoms. Was given rectal nutritive enemata, and only cracked ice by the mouth. She vomited a brownish red liquid, somewhat frothy. Under treatment she improved. The doubt expressed by the writer as to the diagnosis was borne out by the subsequent history, as it was apparent from the examinations that the vomited blood did not come from the stomach. The conclusion of the writer was that the "vomited blood" was brought from the fauces by a voluntary effort resembling hiccough.

In the evening, a smoker, with the President's compliments, was given, at which Dr. Rowland G. Freeman of New York gave a lantern exhibition, showing "The Influence of Milk Certification on Dairy Hygiene."

Third Day—Friday, June 1.

Election of Officers.—The following officers were elected: *President*, Dr. B. K. Rachford of Cincinnati; *First Vice-President*, Dr. W. L. Carr of New York; *Second Vice-President*, Dr. D. L. Edsall of Philadelphia; *Secretary*, Dr. Samuel S. Adams of Washington; *Treasurer*, Dr. J. Park West of Bellaire, Ohio; *Recorder and Editor*, Dr. L. E. La Fètra of New York; *Member of Council*, Dr. George N. Acker of Washington; *Member of Executive Committee*, Congress of American Physicians and Surgeons, Dr. A. Jacobi of New York; *Alternate*, Dr. W. P. Northrup of New York; *Member of the Committee of Arrangements for the Congress*, Dr. Samuel S. Adams of Washington. The meeting will be held in Washington in May, 1907.

Applications for Membership.—Dr. Frank S. Meara, New York; Dr. John Milton Dodson, Chicago; Dr. R. B. Gilbert, Louisville.

Typhoid Infection Conveyed by a Convalescent Infant.—Dr. THOMAS S. SOUTHWORTH of New York read this paper. He said that the general public and the medical profession were now fairly well informed of the danger from typhoid fever in water, milk, and shellfish, and of the preventive measures to be employed in the disinfection of the excreta of a typhoid patient during the active febrile period of the disease. Recently, however, warnings had been issued that the convalescent might still harbor the bacilli in sufficient numbers to constitute a serious menace to the public health. The circumstances must be exceptional in order to prove such conveyance and to exclude other sources of infection. The author related the histories of two house epidemics of typhoid fever in different cities, the connecting link between which was an infant sixteen months of age, who, preceded and followed by definite cases of typhoid in his own family, passed through an illness with prolonged but relatively moderate temperature, with gastrointestinal symptoms and a complicating pneumonia, without positive Widal at the time, but later giving a positive reaction. This infant after a period of normal temperature for about two weeks, during part of which he was under observation in a hospital, then entered another family and house in which there had been no typhoid fever Three weeks after his arrival there, two children came down simultaneously with the disease, and two weeks later a third child. Painstaking inquiry revealed no other source of infection. The visiting infant was pale and rachitic and had frequent loose stools of foul odor, which required frequent changing of the diapers by a busy woman who had five children to cook and care for. The single faucet of cold water over a sink usually filled with soiled dishes and utensils offered the most available facility for perfunctory hand washing. Every opportunity was offered for infection of the food. Although typhoid bacilli usually had not been found in the stools of convalescents, recent German investigations into the spread of typhoid had established the existence of a considerable number of such persons called "bacillus carriers," in whose stools the typhoid bacilli had been found persisting from three months to ten years after the disease, and to whom cases of "contact infection" had been traced. The infectious character of many urines during convalescence was well established. Typhoid bacilli might be found in the urine in about 21 per cent. of the cases, persisting usually in large numbers and almost pure culture into convalescence; and might be found there for weeks, months, or even for years. The bacilli might be present and persist in the sputum of patients having a complicating bronchitis or pneumonia. There was no sufficiently general recognition of these sources of danger in convalescent patients. With few exceptions they were allowed to go their way without any special precautions. Disinfection of stools and urine ceased with the departure of the trained nurse or discharge from active treatment. Adults and older children passed their stools and urine in the closet when convalescent, but with infants the diaper or vessel was handled and the infant cleaned by some attendant, who might then infect herself or others whose food she prepared. The case related throws light upon some of the apparently sporadic cases. It again directed attention to the mild course at times of typhoid fever in infants and the possibility of not recognizing it if the Widal reaction was delayed, or attention was diverted by complications. No effective methods had been discovered of eliminating the bacilli from the intestinal tract.

Dr. D. L. EDSALL of Philadelphia had failed to find in a

careful inquiry in a large number of cases that the majority of doctors gave their patients any instructions at all, even during the course of the disease, that bear upon contact infection. In having a careful examination made into the records in over 200 cases at the Episcopal Hospital he had found that contact infection was indicated in 17 per cent. of the cases; there was a suggestion of it in 25 per cent.

A Study of Relapses in Typhoid Fever of Children.—Dr. Henry Koplik and Dr. Henry Heiman of New York prepared this paper. The writers said that relapses being as varied as the original attack the treatment was one of difficulty. Prolonged temperature elevation, enlargement of spleen, and roseola were the symptoms to be expected. In 164 cases occurring in the last year there were 24 relapses. Average age, nine years; 13 males, and 11 females. There were 15 per cent. of the total number that relapsed. The tendency to relapse was more pronounced in infant life than in later years. Mortality was exceedingly low in relapsing cases. As a rule temperatures continued high. A constant symptom was enlargement of the spleen, Roseola persisted in 75 per cent. Complications were mild and infrequent.

Dr. Thomas Morgan Rotch of Boston suggested that bacteriological examination of the blood was a reliable adjunct in the diagnosis of a relapse in typhoid fever, as relapses were often difficult to determine.

Dr. I. A. Abt of Chicago said that in many of the cases the spleen remained enlarged from the first appearance of the infection, and at the time of relapse became more enlarged.

A Consideration of Some Possible Etiological Factors in Recurrent Vomiting.—Dr. John Howland and Dr. A. N. Richards of New York presented this paper. They said in part that the etiological factors concerned in the recurrent vomiting of children had always been hidden in obscurity. Most writers had agreed that an underlying neurotic constitution was the cause. Examinations of the urine were made to ascertain the urinary conditions in these cases and the results were tabulated. Additional evidence of faulty oxidation was shown, especially by the increased secretion of sulphur. They thought the belief justified that interference with oxidation was the chief cause. Interference with oxidation was brought about in animals by the injection of various substances such as phenol

Gonorrhea in Infants.—Dr. A. C. Cotton of Chicago reported thirty-one cases, the children being of an average age of three and a half months.

Carbolic Acid Poisoning by Rectal Injections.—Dr. George N. Acker of Washington reported two cases of carbolic acid poisoning. 1. Child aged six years, mother gave rectal injection of carbolic acid, a teaspoonful in a pint of water. Almost immediately noticed the eyes closing; was semiconscious and would not answer. The eyes rolled about. Remained unconscious for nearly three hours and afterward complained of soreness in abdomen. The next day the urine was very dark and had odor of carbolic acid. The injection had been given for seat worms, the father having read in a family medical book that this was the proper treatment for that condition. 2. Child three years of age; family physician had ordered bowel irrigation with boracic acid and mother by mistake had used carbolic acid, teaspoonful to the quart of water. Child became unconscious and remained in that condition with feeble pulse and respiration eight hours. Gradually made complete recovery. For seven days urine had dark color and odor of carbolic acid.

Dr. Samuel S. Adams of Washington recited a case in which carbolic acid had been used in this way for tape worm, and he thought it probable that more of these cases occurred than was generally supposed.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending September 22, 1906:

	Cases	Death
Tuberculosis Pulmonalis	354	154
Diphtheria	154	16
Measles	55	2
Scarlet Fever	59	2
Smallpox	—	—
Varicella	9	—
Typhoid Fever	134	29
Whooping Cough	30	8
Cerebrospinal Meningitis	5	7
Malarial Fever		
Totals	800	218

Technique of Enterotomy.—Wolf states that he usually, when operating for intestinal obstruction, has a rectal tube placed in position before the laparatomy is begun. In case the obstruction is low down, it is easy after its relief to empty the distended gut through the tube. In case the obstruction is higher up, the following procedure is employed. The lowest possible loop of distended intestine is stripped of its contents and is secured by intestinal clamps; a circular purse-string suture is placed in position and in its center an incision is made sufficiently large to admit a piece of drainage tubing. This is pushed into the intestine a short distance and the suture tightly drawn. In this way the intestine may be emptied without any danger of soiling the peritoneum or the hands of the operator. At the termination of the operation the tube is slowly withdrawn by the assistant, while the suture is tightened by the operator. The spot is then covered over by one or two Lembert sutures.—*Zentralblatt für Chirurgie.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 21, 1906:

SMALLPOX, UNITED STATES.

		CASES	DEATHS
Louisiana, New Orleans	Sept 1-8	4	1
Massachusetts, Lawrence	Sept. 1-8	1	
Montana, State	July 1-31	90	
New York, New York	Aug 25-Sept 15	7	

SMALLPOX—FOREIGN.

Africa, Cape Town	July 28-Aug. 4	24	
Brazil, Rio de Janeiro	July 29-Aug. 12	4	
Chile, Antofagasta	Aug. 12-19	47	9
Coquimbo	July 14-27	12	3
India, Bombay	Aug 7-14		2
Calcutta	July 28-Aug. 4		3
Karachi	Aug 5-Aug 12	2	1
Madras	Aug 4-10	2	2
Rangoon	July 28-Aug. 4	1	1
Italy, General	Aug 17-23	6	
Russia, Odessa	Aug 19-25	5	1
Siberia, Vladivostok	July 21-28	3	1
Spain, Barcelona	Aug. 21-31		8
Turkey, Constantinople	Aug 20-27		1

YELLOW FEVER—FOREIGN.

Brazil, Rio de Janeiro	July 29-Aug. 5	1	1
Cuba, Habana	Sept. 5-18	2	
Honduras, Ceiba	Aug. 5-Sept. 1		Present.
Mexico, Merida	Aug. 25-Sept. 8	4	3
Tuxtepec	Aug 26-Sept 10	10	6
Vera Cruz	Sept. 3	1	Imported.

CHOLERA—FOREIGN.

India, Bombay	Aug 7-14		77
Calcutta	July 28-Aug. 4		6
Madras	Aug. 4-10		5

PLAGUE.

Brazil, Rio de Janeiro	July 29-Aug. 12	5	2
Egypt, Alexandria	Aug. 17-23	10	3
Suez	Aug. 10-23	3	2
India, Bombay	Aug. 7-14		33
Calcutta	July 28-Aug. 4		17
Karachi	Aug 5-12	6	6
Rangoon	July 28-Aug. 4		136
Mauritius	July 6-13	1	1
Turkey, Trebizond	Aug. 8-13	8	3

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Original Articles.

THREE URETERS DEMONSTRATED DURING LIFE; URETER-CATHETERIZATION GIVING THREE DIFFERENT URINES, ONE INFECTED WITH GONOCOCCI.

BY BRANSFORD LEWIS, M.D.,

ST. LOUIS.

PROFESSOR OF GENITOURINARY SURGERY, MEDICAL DEPARTMENT OF ST. LOUIS UNIVERSITY.

THIS very remarkable case pertained to a male patient, aged 24 years, referred to me February 3, 1906, by my friend, Dr. J. L. Crook, of Jackson, Tenn.

The history given is one of repeated recurrence, since 1900, of urethral gonorrhea, after unusually comprehensive and intelligent measures for rendering innocuous all possible sources of infection within reach—complete urethrovesical irrigations with approved gonococcocides, given systematically, with and without prostatic and vesicular massage, by Dr Crook, who is versed in such methods, and also by an Eastern consultant, whose opinion had been sought after the case had proved its rebelliousness; yet no lasting success was achieved. The passing of each month found the patient with a reawakened attack of urethral discharge which was repeatedly proved to contain abundant gonococci, and by several investigators, aside from those named.

At first I went through a similar experience: I applied my attention to the disinfection and treatment of the lower urinary tract for about two weeks, without making any definite headway, when I determined to learn what light could be thrown on it by ureter

FIG. 1.

catheterization. In making numerous examinations for gonococci, my assistants had noted one peculiarity about them: usually the organisms were not so numerous in either the urethral discharge or that pressed from the prostate as they were in the sedimentations from the urine. In the light of subsequent findings, this is significant.

On inserting the rectangular cystoscope into the bladder and taking a preliminary survey, I was surprised to observe what appeared to be two ureter openings to the left of the median line, on the line of the interureteric fold, about three-sixteenths of an inch apart, while another, single, ureter opening showed in the usual location on the right side. The three ureter openings thus seen were readily recognized by others present at the examination (Doctors Burford, Wolff, and Scharff). We supposed that the two openings on the left side were simply the duplicated outlet of a bifurcated ureter.

The right angle periscope was then replaced by the double-catheterizing part, armed with two catheters; a catheter was easily introduced into each of the two openings of the left side, passing upwards for what seemed about the natural distance to reach

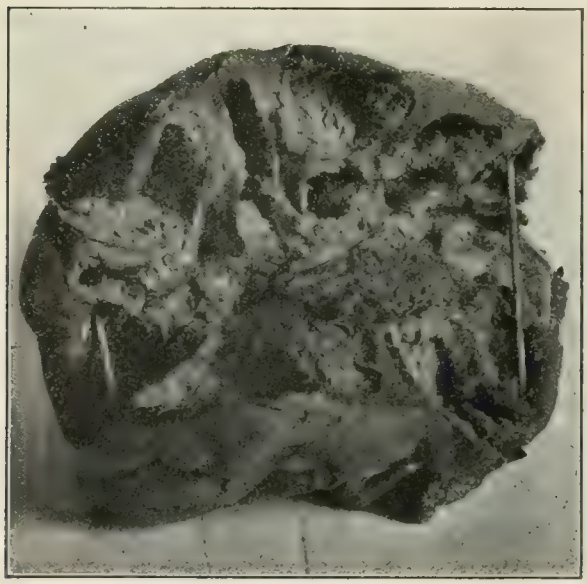

Fig. 2.--Destruction of kidney by gonococcal infection.

the kidney. They could not be felt to touch one another in transit. The ureter on the right side was left for future investigation, as my catheterizing attachment only provided for catheterizing two ureters at a time.

When the cystoscope was then withdrawn, leaving the two catheters in the openings on the left side, prompt drainage was established from both, the one draining the extreme left opening, however, being much more active than its companion. This latter, for convenience, we will term the middle opening.

The urines coming from the two catheters displayed not the slightest indication of having any relation to one another. One would drain regularly, after its own rhythm, while the other would follow *its* own periodicity quite out of harmony with the first. The extreme left one drained about three times as rapidly as the middle one. The urine coming from the extreme left opening was of much lighter specific gravity (1.005) than that from the middle (1.010); it was much lighter in color, was quite cloudy, with flocculi floating in it; while the other was clear and yellow, more like normal urine. On microscopical examination the left ureter urine showed much pus and epithelium, and a moderate number of blood cells, and, contained in quite a number of the pus cells, were colonies of diplococci that gave the customary appearance of gonococci to the positive methylene blue stain, and decolorized after the Gram stain. In the urine from the middle opening, no pus cells and no organisms were found.

After obtaining sufficient urine from both ureters to make the required tests, a colored silver solution was injected into the left catheter, the pelvis receiving something like three drams without causing pain or reaction, and, at the same time, the other catheter continued to drain the same as before, with no silver stain appearing and no interference with the rhythm of its drainage—giving additional evidence of the total independence of the two sources of urines coming from the two catheters. When we came to inject the silver solution into the catheter from the middle ureter, fifteen minims were sufficient to induce colicky pain in the left renal region, showing that that pelvis had nothing like the capacity of the other.

Two days later, February 24, the ureter of the right side was investigated, together with a repetition of the catheterization of the infected, extreme left, ureter. No pus or infective organisms were found in the urine of the right kidney, and its secretion of urine was even more active than that of the left, while the quality of its urine was also better (specific gravity 1.010). It was observed at this second catheterization of the left (infected) ureter that there had been marked decrease in the amount of pus that it contained; and, more important still, no gonococci were to be found in it. This pelvis was again washed with the silver solution.

Three days afterward, February 27, I carried out the excellent plan suggested by Kolischer and Schmidt for identifying the ureters throughout their course by means of lead fuse-wire filling the ureter catheters that are passed up to the kidneys, and made evident by an *x*-ray photograph. Three catheters, armed with wire, were successively introduced into the three ureter openings and pushed up toward the renal regions, after which two *x*-ray photographs were taken by Dr. R. D. Carman, with very satisfactory results (Fig. 1). This skiagraph makes it evident that the ureter on the right side of the body has no connection with the two on the left side. Those of the left side, after leaving their respective openings at the angle of the trigone, run parallel with one another in following the direction of the pelvic hexagon, and ascend in the manner usually followed by the left ureter. Whether because I did not push it as far as possible or not, one of the catheters ends at a point something like three inches lower than the other. It will be noticed, too, that, instead of the two ureters maintaining their relative positions, they cross one another in making their ascent. The one starting from the median vesical opening leads to the outer side when it reaches the flank, while the ureter that starts from the outer opening crosses and obtains the median position in the flank. This is the one that was infected with gonococci, the other two having been perfectly healthy.

The facts thus developed would seem to furnish ample explanation for the clinical incidents of the case—the continual recurrence without new exposures, over a period of five years, notwithstanding the judicious and comprehensive measures applied to the genital and lower urinary tract. Both Dr. Crook and the patient were repeatedly mystified as to the source of the renewed infection, that came like a thief in the night, apparently without cause or reason.

The silver irrigations of the infected pelvis brought the result desired. Evidences of infection that, up to that time were persistent, almost immediately disappeared, and the urine as quickly became clear. The patient left for home within a week afterwards. Dr. Crook and the patient both write that there has been no recurrence of the trouble, although treatment has now been discontinued for over seven months (since February, 1906).

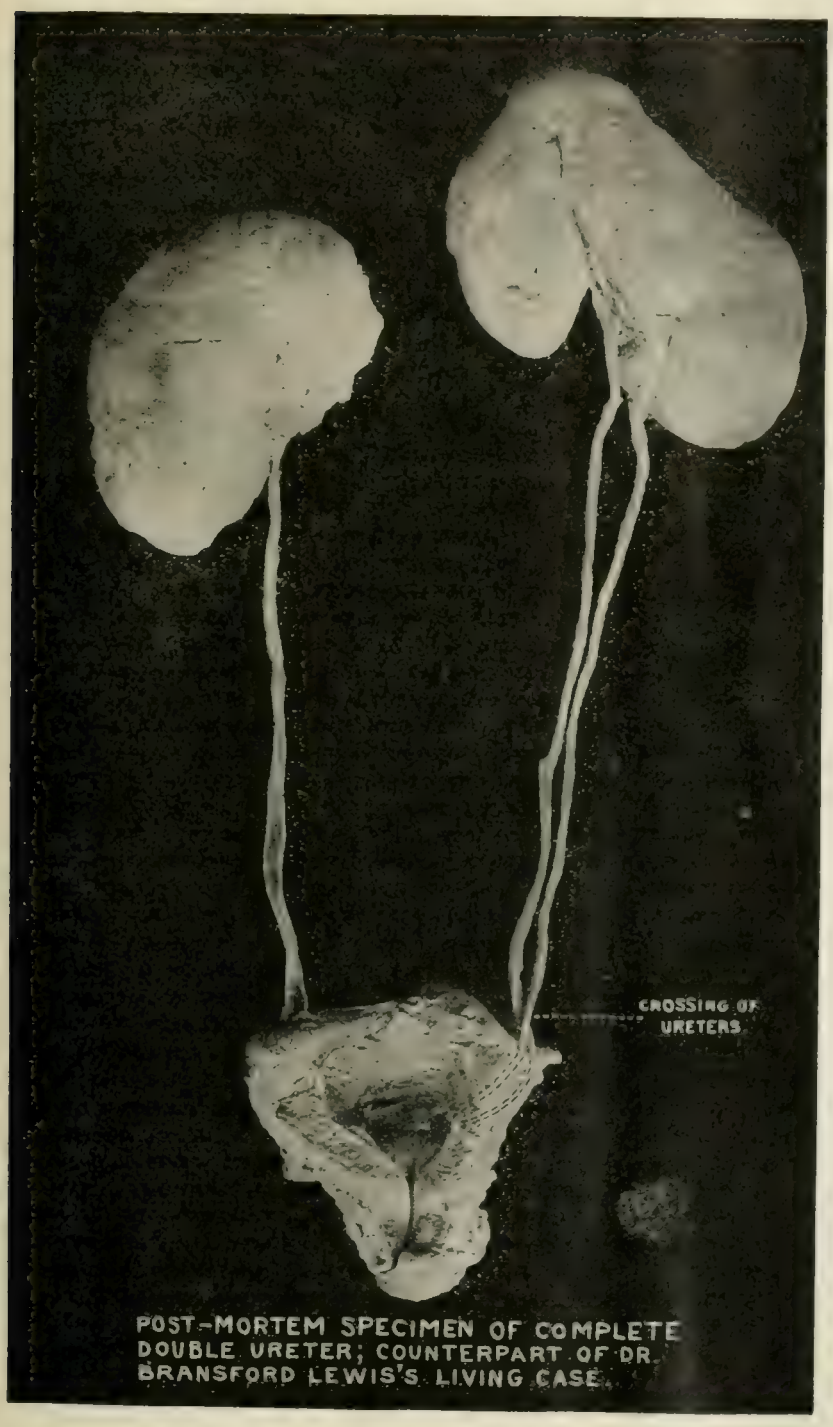

FIG. 3.

Infection of the kidney-pelvis by gonococci has, of course, been established by a number of well-attested reports. I have in my collection a kidney (Fig. 2) that was found on post-mortem to be a mass of suppurating tissue, the result of gonococcal infection, as proved by culture methods, by Dr. R. B. H. Gradwohl of St. Louis (reported to the American Association of Genitourinary Surgeons in May, 1900; *Journal of Cutaneous and Genitourinary Diseases*, September, 1900).

But the striking singularity of the present instance is the involvement of only one of two ureters that run, side by side, to the left renal region, the other ureter remaining free of infection. It would have been less surprising if both ureters thus closely associated had been found infected.

Aside from the interesting phases relating to the infection in this case, the anatomo-physiological question arises as to the source of the three kinds of urine obtained through the three catheters; as to whether there are two separate and independent kidneys on the left side, or only one kidney, that is divided into two parts and drained by two separate pelves and ureters. I believe the proof is furnished that there are two independent pelves, as well as two ureters. The marked differences in the two urines suffice to determine that. As to the other question, we must be guided largely by the study of other cases of this kind. Morris says ("Surgical Diseases of the Kidney and Ureter," Vol. 1, page 81) that supernumerary kidneys are extremely rare, and are usually found accidentally after death, as they do not give rise to any symptoms which indicate their presence during life. He quotes, however, a case recorded by Watson Cheyne (*Lancet*, 1899, Vol. 1, page 215), in which the supernumerary kidney was discovered during a laparotomy. "It was well developed and situated on the right side of the lower part of the spinal column at the brim of the pelvis. It had its own ureter and blood supply, and was from three to four inches distant from the right kidney, which was apparently of normal size. The left kidney was also present, and seemed rather smaller than the right. The third kidney, in this case, was quite movable."

While the *possibility* of an independent third kidney is thus established, study of specimens of duplicated ureters leads to the conclusion that there is much greater probability of there being only one kidney on the left side, in this case, with two pelves and their separate ureters. Byron Robinson has made a study of thirteen specimens and presented a valuable report on them (*Medical Fortnightly*, March 10, 1904). He finds that such eccentricities of anatomy have certain features of regularity, even in their irregularity. That but one kidney gives rise to two pelves and two ureters; that the ureter connected with the upper pole of the kidney (called the proximal ureter) habitually crosses behind the other ureter and terminates in the opening farthest from the urethral outlet of the bladder; while the distal ureter, leaving the lower pole of the kidney, crosses in front of the other one and terminates in

the opening nearest the urethral outlet. That arrangement is adhered to in the post-mortem specimen, the illustration of which I present herewith (Fig. 3), and it seems also to be followed in the case described above, as shown by the *x*-ray photograph (Fig. 1), where the crossing of the ureters is clearly seen.

It has been found in a number of specimens that the two poles of the kidneys and their respective pelves and ureters are separated by wedges of embryonal tissue, other than the normal kidney structure. Such a separation may make an effective barrier against extension of infection from one pelvis to the other, and account also for the wide differences in the urines draining from the two ureters of the one kidney, as displayed in this case.

I am aware that it is not remarkable to find duplicate ureters in the course of post-mortem examinations, such as is shown in Figure 3, but I have been unable to learn of any previous instance in which three different urines have been drawn from the same living individual, nor of an instance in which one of three ureters has proved the source of recurrent gonorrhea.

The permanent relief of such a case could be secured only by the elimination of the infective organisms from the upper urinary tract.

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AXIOMS IN THE TREATMENT OF CANCER OF THE RECTUM.

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Judging solely from my own experience in practice, there seems to be great uncertainty in the minds of the profession at large as to the general principles which should govern in the treatment of that unfortunate condition, cancer of the rectum. Or, perhaps it would be better to say there seems to be a great divergence of opinion with a great deal of certainty, and a tendency on the part of each one to back his opinion—some for one form of surgical interference, some for another, and some for none at all. Twice within a week I have been sent for from suburban hospitals to throw whatever weight my opinion and advice may have, either for or against any operation, or in favor of some particular operation, where there was a very evident difference of opinion; and this happens not infrequently. One was a case which to me was manifestly inoperable, where the pelvis was fairly filled with carcinoma adherent to everything, and in which it was proposed to do three operations—first, a preliminary, provisional colostomy; second, a subsequent extirpation; third, a closure of the artificial anus. The other was very similar, but here the only difference of opinion was whether to extirpate or be content with colostomy.

This is not, perhaps, the worst feature of the situation, however. One case, in particular, I have in mind, where a life, which I had every reason to suppose might be prolonged for years and in which I hoped for a radical cure, so favorable was the growth for complete removal, was simply thrown away, because a physician who had never been asked to see the case told a member of the family he had seen a man die on the table from that operation. No doubt he had. I never have had that unfortunate experience, but there is no doubt he represented a large class of physicians who have seen or heard of fatal cases of attempted extirpation, and who are so prejudiced against the procedure for this reason, that they are honestly ready to throw their weight against it whenever they get an opportunity. It is for this class of men I have here attempted to set down certain plain, guiding principles based upon facts, principles which govern my own practice, and which I believe to be safe, sound, and for the good of the patient.

Let me start with a very simple proposition, which I think can give rise to little discussion. Operable cases of cancer of the rectum, like cancers elsewhere, should first be treated by a radical attempt at cure, which means removal. And I hasten to add that, to my mind, only such cases are operable as allow of complete removal of the disease with no more risk than attends any other major surgical operation.

The corollary of this proposition is that inoperable cases should not be treated in this way, but by other and better methods.

To be more exact in our definition of operable and inoperable: Any cancer of the rectum which is movable, which is still confined to the rectum, even if in all its coats and to the surrounding cellular tissue, even though it may be attached slightly to prostate or vagina, offers a chance of cure, and should be treated by radical operation. Any cancer of the rectum which has involved the surrounding tissues (prostate, bladder, vagina, uterus, or bony points of pelvis) to an extent which makes a hard, immovable mass on digital examination is inoperable. This distinction is not arbitrary. It simply means that in one case we are dealing with cancer of the rectum, in the other with cancer of the pelvis. No reference is made to the particular point of the rectum involved, whether high up or low down, because with modern technique this is not essential. Removal of cancer of the upper rectum or sigmoid is no more dangerous than the removal of the lower third of the gut.

We may now go a step further. A cancer may be inoperable because of its extent and attachments, but not all circumscribed and unattached growths are therefore operable. Age, general health, almost every condition in the patient's life and surroundings, must be taken into consideration. Given a man of eighty, whose only symptom is an annoying frequency in the desire to have a passage, and who suffers no pain, is it wise to attempt an extirpation? I think not. It is unpleasant, to say the least, to put a patient through an extirpation of the rectum, and find a metastasis in the liver a fortnight later, although it may happen to the best diagnostician. It is also unpleasant to open the abdomen and find a little previously undiscovered ascites, for this also means metastasis, and all of these things have to be considered and carefully examined in reaching a conclusion as to the form of surgery, if any, to be advised. Again, to decide this question wisely, we must know something in a general way of the risks and results of operative interference, even in carefully selected cases. What is the risk? What the results as to cure or prolonging life in comfort? What the chances of recurrence, and how soon? Can anything better than extirpation be done, and what? All of these questions must be answered to the satisfaction of patient, attending physician, and family.

The simple fact is that extirpation of the rectum is not an operation of any great mortality when done by suitable men. And yet, if some of the cases I see in consultation are operated upon, in spite of my advice, as I suspect they are, the mortality may well be frightfully high, and death on the table, or very near it, rather to be expected.

The rate of mortality will depend upon the choice of cases and the operator. At St. Mark's it is now a little under 3 per cent., and my own is about the same. But it is evident both they and I are selecting our cases very carefully. When I began to operate my mortality was 33 per cent., and so was Kraske's. In a miscellaneous group of cases it is about 22 per cent., but these figures have no value. We all know of the operation whose mortality after one case was a hundred per cent., and I honestly believe this has applied more frequently to extirpation of the rectum than to any other operation.

And now as to results. How often may we hope for radical cure? More frequently than is generally known. I passed a gentleman driving with his wife in the park yesterday, well, happy, and prosperous, occupying a position of great responsibility, from whom I removed a cancer of the rectum ten years ago. There is a physician not far from New York, still doing a large and active practice, who, when I was obliged to tell him the diagnosis no longer admitted of a doubt, turned to his wife, and said simply: "This is death." That, also, was about ten years ago, and the case was not a slight one, but involved the prostate. Other patients I have that report to me occasionally, in whom the interval is fully as long, and some of half that time. Other men have equally good results, and in the aggregate they make a goodly number. So we know that, like cancer elsewhere, it is sometimes curable by operation, even when such a result seems hardly to be expected; and that certain varieties, when favorably situated (epithelioma near the verge of the anus) are generally curable in their early stages.

But cancer of the intestine is an unsatisfactory disease, no matter what its form or where situated, and suppose we fail to cure, we at least do good. For extirpation in many cases, even with a rapid recurrence, is a great palliative, and is fully justified from that fact alone. It may even be done more than once, and a recurrence may be cured when the original operation has evidently not cured; and so may life be prolonged and suffering avoided.

It must be evident that I am not speaking of an operation of any very great mortality in itself; of procedures which result in death on the table, and from which patients seldom recover. I am simply speaking of the operation of excision of the rectum, as practised to-day on cases selected with care by conservative surgeons.

What is the best form of operation? There is none that is applicable to all cases, and the site of the growth must be the controlling factor. Some very low down may be reached best from the perineum or vagina and amputated, although I judge from Goodsall and Miles' work that at St. Mark's they have practically cut loose from Allingham's teaching and perineal method, which was the one most practised for a long time. In cases involving the middle and upper thirds, some form of sacral incision is unquestionably the best, and in cases still higher the operation may be abdominal, or a combination of this with one of the others. There have been many different procedures described which cannot even be enumerated here, each having its advocate; but in the vast majority of cases the operation will be an exsection of the affected part through a sacral incision, with or without subsequent anastomosis. Goodsall is advocating and practising very successfully at St. Mark's a very radical procedure, which, in spite of its permanent colostomy, may yet prove the simplest and best. It consists, first, in colostomy two or three weeks before the excision and the formation of a permanent artificial anus, then of sacral removal of the entire rectum and anus, no attempt being made to preserve the natural anus or any gut below the disease, and, finally, a complete closure of the dorsal and perineal incisions.

In spite of its manifest disadvantage, the permanent artificial anus, which I have always avoided, I confess that this method appeals to me very strongly. The technique of the operation as to the removal of the growth is that which I have practised for years, but after resecting I have generally found it possible to establish some sort of anus (mostly artificial) at or near the natural site, and have, therefore, been able to avoid the preliminary colostomy, and also to complete the operation at one sitting. But, then, the recurrences have almost invariably been in the anal portion—which has been left—and the entire removal of this, with the fat and tissues in front of the sacrum and in the ischiorectal fossæ, may reasonably be expected to give greater immunity. Goodsall states the points in favor of his method very forcibly as follows: After excision of the rectum an artificial anus must result, and in consequence there must be some considerable degree of loss of power of control, whether the interischial, the sacral, or the abdominal variety has been adopted. During the healing of the excision wound feces are not voided through it, thus saving the patient much discomfort and pain, as well as delay in the healing. Further, there is no necessity for subsequent dilation, and this is important as avoiding irritation, and hence liability to recurrence. The wound often closes completely, and there is no discharge in the anal region. If recurrence takes place there is no irritation from feces. The risk of pelvirectal suppuration, following recurrence, is diminished, as is that of hemorrhage. The weight and health improve much more rapidly than in cases without preliminary colostomy.

Every operator, in making his choice, will be influenced in a measure by his sentiment toward colostomy. This and the fact of a double operation have always led me to forego the manifest advantages which a preliminary artificial anus offers; for, though always advocating and doing colostomy when necessary, and fully appreciating its advantages, I have never thought it necessary as a step in the operation of excision. But, if it has any bearing on the question of completeness of removal, subsequent relief from irritation and especially upon the liability of recurrence, as Goodsall holds, no one is justified in refusing it.

With the exception of the colostomy, and the complete removal of the anal portion, it seems that he has followed for some time the technique adopted by me at the Post-Graduate years ago, when I gave up the perineal method. Briefly, the essential points are the attack upon the growth from behind and above through a sacral incision, the avoidance of bleeding, and the saving of time, and hence of shock in the operation.

The names of the different men who have each recommended a slightly different incision through the sacrum (Kraske, Hochenegg, Rydygier, etc.) are well known, but the differences are not important. If my own is like any of them it is nearest to Bardenheuer's, that is, a transverse section through the sacrum above the last spinous process, but the essential thing is to get down to the rectum quickly and completely without uncertainty or delay.

Make a long incision with one stroke of the knife, reaching down to the bone from near the level

of the middle of the sacrum to the anus, and make this in the median line. Dissect the flaps rapidly from the lower end of the spine, for a short distance push one blade of a large bone forceps under the sacrum at the level described, cut the bone across, seize the detached fragment of sacrum and coccyx with a strong-toothed forceps, dissect it free of its attachments, plug the cavity with a sponge, and the first step of the operation is completed. Now this may be a matter of minutes, or of an hour, according to the personal equation. With myself and the assistants, who have been specially trained by me, it is a matter of a very few seconds, and the reason is that I want to get a big sponge into the pelvic cavity to control the bleeding as soon as possible; therefore there is no tying of vessels, and remarkably little blood. In fact, no vessel may require a ligature either now or till the rectum has been removed.

After a short breathing space to see the effect of the pressure, during which the heavy instruments so far used are removed and a goodly supply of artery forceps substituted with scissors, a fresh, sharp knife to replace the one which will need grinding, ligatures, etc., the sponge is quietly removed. Often the wound will be perfectly dry and not an ounce of blood has been lost. Sometimes there is a nasty, continuous, venous oozing from the plexus of veins on the hollow of the sacrum where the bone has been cut across, and two or three forceps may be necessary to control it. These may be left *in situ* till the operation is completed, or the points may all be tied in one ligature.

The posterior surface of the rectum is now directly in the wound, and the next step is to isolate it from its surrounding tissues by blunt dissection. Use the finger first on the right side, then on the left up and down from the attachment of the peritoneum to the levator, for these are the two points at which the gut will be most firmly held, and then deliberately tear through the peritoneum at the upper right hand angle of the wound, pass the finger into the peritoneal cavity under the upper part of the gut from right to left, so that the gut lies in the crook of the index finger, and either by blunt or sharp dissection (the latter may be necessary when the serous fold is heavy), loosen the peritoneal attachment from the bowel, and bring the latter down. The gut will not come down while the peritoneum holds it, and traction to make it do so often results in rupture. But the moment the peritoneum has been divided the whole upper rectum, and in fact most of the sigmoid, are at command, held only by the mesorectum and mesosigmoid, which may be divided to any extent necessary after ligature. This completes what may be called the second stage of the operation; the wound may be freely bathed with hot water to prevent oozing; sponges are placed at its upper angle to close off the peritoneum and keep back coils of intestine; the extent of the growth above is determined, and the gut is divided between two tapes at least one and a half, and better two full inches above the upper limit of the growth, every care being taken not to soil the wound with feces.

If a permanent colostomy has been done, the upper end should be transfixed with a double ligature, and dropped after the mucosa has been cauterized with carbolic acid or the Paquelin. The removal of the lower segment, with or without the anus, is not difficult, the chief obstacle being the insertion of the levator, which must be cut with scissors all around. Free division of the anal portion in the median line behind may be a great help, and even necessary for satisfactory removal of the growth. If the prostate is involved a sound should be passed into the bladder. If the vaginal wall has become implicated it should be excised, and since recurrence is always to be feared a careful search for enlarged glands in the presacral connective tissue and around the growth in the connective tissue should always be made, and as much of this tissue as possible removed.

I have never been sure that attempts at end-to-end anastomosis after this operation paid. I have never seen it succeed very well, except where the disease was high enough and limited enough, so that both ends were covered with peritoneum, and I am usually content to stitch the upper end to the skin as near the point of the natural anus as possible, or to remove the mucosa from the natural anus and stitch it there.

Should this be adopted the time of operation is greatly shortened. The wound in the peritoneum may be sutured or not (it is not essential); the whole large cavity formerly occupied by the rectum should be washed out with hot water; deep sutures may often be used to advantage; a gauze drain should always be left in, and the wound closed.

Never place the patient flat on his back to lie upon the incision, or the flaps may easily slough from pressure against the sacrum in a few hours.

This, then, in brief is an outline of the operation I have found most satisfactory for many years, and more than once I have completed it in fifteen minutes with scarce any hemorrhage or shock, which must certainly have an influence on the mortality. Excepting that I am much impressed with Goodsall's argument in favor of complete removal of everything below the growth, I see nothing better in cases to which it is applicable, and it is applicable with modifications as to anastomosis to nearly the entire rectum and sigmoid.

Very satisfactory results may sometimes be secured where the tumor is high enough and sufficiently limited in extent, so that after resection both ends may be united without interfering with the natural anus. We have called attention to the fact that the anus made after extirpation, no matter how ingeniously constructed or where placed, even though the natural orifice be utilized, is still an artificial one attended by incontinence. But where it is possible by abdominal or sacral incision, or by both combined, to resect and anastomose without interference with the spincteric portion, we have the ideal operation. Under these conditions, which are rare, any form of union may be practised—end-to-end suture, Murphy button, bone or vegetable bobbin, lateral suture, or invagination of the end of the proximal portion into the side of the distal. All of them, unless the growth be high enough in the sigmoid to be easily reached by abdominal incision, can best be done by the sacral incision, for the simple reason that any delicate work in this line deep in the pelvis, where one section of the gut is very nearly fixed and immovable, is most difficult through an abdominal incision alone. The easiest, manually, is implantation of the upper end into the side of the lower, because in this the work is facilitated by utilizing the rectal cavity as a means of approach.

Palliative Treatment.—Try as we may, and seek for substitutes where we can, there is no getting away from the fact that colostomy is the greatest of all palliatives for cancer of the rectum. For a quarter of a century it has held its own, and it will continue to do so in spite of natural prejudices. There

is no advantage in argument on a subject which may be considered as thoroughly argued out. I have the records of two cases, one with Park of Buffalo and one with Bull and the late Dr. McCreery of New York, in which the lives of very prominent men were prolonged in comparative comfort for five years after the disease had so far progressed as to be inoperable. Both were men of wealth, able to command every care, and of course this helped in the result; but think of a gentleman going South for a fishing trip vacation from the cares of active business three years after this operation, and having still two years more of life before him, most of it fairly comfortable, and find something better if possible. As I say, both of these cases were already too far advanced for extirpation when the operation was performed. But these, though exceptional, are not so phenomenal as to be useless as a basis for prognosis. Excluding abdominal metastasis, I expect to get from one to three years of prolonged life from a colostomy, and tell my patients so. Moreover, I am quite as anxious to earn the gratitude of my patients as are other men, and were those upon whom I operate the objects of disgust to themselves and the world they are pictured in imagination, I should not succeed. On the contrary, they are among the most grateful.

If colostomy does good, not simply as overcoming intestinal obstruction, which, by the way, is a very rare complication of cancer, but by preventing irritation, stopping bleeding and discharge, and postponing the inevitable end by sidetracking the diseased part and removing it from any participation in the economy, then the sooner done the better. Colostomy as "a last resort," done after obstruction, has begun to be evident, to prevent threatening dissolution, is an operation of high mortality, and when successfully done will not result in any such lengthening of life, as I usually hope to secure. With me it is the *first* resort after extirpation is decided against, and should be done without delay. Under such circumstances the risk is the same as after other laparotomies, comparatively *nil*—say one or two per cent.

In cases of chronic obstruction there may be a choice of site for the colostomy—left, right, or transverse. The left is always to be chosen by preference, other things being equal, but I have seen the entire colon so solidly packed with feces that it was impossible to get any relief, even after a very large and free opening into the sigmoid, and my patient died on this account. In the effort to relieve him through the artificial anus an olive pit was brought to the light, which he was positive dated from a cocktail more than a year previous. If his memory was correct, as I have no doubt, this fact is worthy of notice in the history of intestinal obstruction.

Under such circumstances a right inguinal operation upon the cecum, as far from the valve as possible, is indicated; but the entire colon should not be shut off from the economy, except for very good reasons. It certainly has its functions.

As for other palliative treatment—curettage, cauterizing—although these may seem to check the discharge for a short time, they are so far inferior to colostomy as to offer no comparison. Moreover, I am timid about them, having seen one fatal case of hemorrhage and having a suspicion, which of course cannot be verified, that in more than one case they have been responsible for rapid and immediate metastasis. We do not know very much about cancer, but the tendency of modern surgery is certainly to cut wide of it and not to stir it up with a curette. Witness the results of the modern operation for cancer of the breast as compared with those of a few years ago. The success seems to be due in great measure to avoiding all chance of reinfection, even during the act of extirpation.

In what has been said the intent has been to enforce certain general principles and avoid details.

1. Every suitable case of cancer of the rectum should be subjected to immediate excision or resection by some of the half dozen well-recognized varieties of the operation.

2. Every other case should be at once treated by colostomy.

3. No physician is justified in using his influence against some form of operative relief, radical or palliative.

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THE TREATMENT OF SYMPTOMS A RATIONAL AND SCIENTIFIC PROCEDURE

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THERE is a quite general unscientific conception among medical men regarding therapeutics, namely, that there is a specific for particular diseases and that self-limitation of a disease is an absolute law. This generally accepted belief as to self-limitation ignores certain definitely determined principles of etiology which go to show that a disease is the result of three factors. It is, the product, first, of the determining cause; second, of the condition of the patient at the time that the cause is applied, and third, of the general condition of the patient dependent on his congenital constitution. The existence of what are called *formes frustes* or aborted forms of disease in which conditions varying from the disease type occur, indicates that there are factors which interfere both with the self-limitation and with the manifestations of such diseases. There are "walking" cases of typhoid fever, of pneumonia, of smallpox, of scarlet fever, which indicates that the vitality of the patient is not affected to the degree it should be, according to the ordinary conception of self-limitive conditions. Indeed, this constitutional factor plays a part in the results of cardiac conditions, including wounds of the heart. The question in the cardiac state is not the existence of the given lesion or even the extent of it, but rather the degree of compensation. The older conception that heart wounds were absolutely fatal was proven seventy years ago to be entirely erroneous. Indeed, to-day no surgeon would accept it, since 40 per cent. of the cases of heart suture are successful. The problem, therefore, in the treatment of disease, is to determine whether conditions which produce modified constitutional symptoms are to be obtained by medicinal agencies.

The elements which may be affected by treatment are the course of the disease, the general constitutional vitality, and the constitutional vitality of the patient at the time of the attack. These factors may be influenced by "symptom remedies," so-called, applied to conditions produced by the diseases and which tend to reduce the congenital and acquired vitality. In certain cases fever is a factor which tends to reduce the

general strength and to exhaust the patient. When we lower the temperature we interfere with a factor which is sapping the vitality of the patient and decreasing his resistance to disease. Reduction of the fever, therefore, is a problem in such cases to be studied therapeutically. The temperature of the body depends upon a complicated mechanism which is at once thermostatic, thermoinhibitory, and thermoexcitory. Hence, an elevation of temperature may obtain on exhaustion of the thermoinhibitory and the thermostatic centers and not upon stimulation of the thermoexcitory centers. Here, a totally different class of agents is indicated from those needed where the thermoexcitory functions are increased. As increased tone given to the circulation and the heart benefits the former class of cases, hence agents increasing cardiac tone are indicated. The reverse is the case where thermoexcitory functions are involved. In these cases veratrine, aconitine, venesection, and even the coal-tar synthetics are indicated. The influence of cold sponging, through its action upon the skin and reflexly upon the circulatory apparatus, is peculiarly beneficial in the first type of cases. The fever, moreover, may be an expression of general nervous agitation. Here the drugs above mentioned often prove valuable without depressing the heart. As general nervous agitation in fevers is connected with insomnia of the coma vigil type, hypnotics are indicated, since the fever, nervous irritation and the insomnia work in a vicious circle to exhaust the nervous vitality. Indeed, until insomnia is conquered, it is useless to expect a relief of the other symptoms. In these cases the kidneys, which are under a tremendous strain from nerve waste, need attention. To neglect of these the most objectionable results of hypnotics are due. Hypnotics given to secure rest at a certain time when the nervous system is weak, particularly when they do not interfere with the renal elimination, act excellently on the agencies which are sapping the general vitality in these cases. As usually given, however, they are deleterious. Opium is objectionable for many reasons, as likewise are chloral hydrate, paraldehyde, etc. Since sulphonal, veronal, trional, etc., all produce an alterative effect on the blood, causing hematoporphinuria, which indicates renal strain, they are, when given alone, likewise contraindicated. They should be employed in combination with hyoscine, coniine, duboisine, and the opium alkaloids so as to prevent both the alterative action on the blood and the renal strain. The employment, therefore, of symptom remedies to produce constitutional results and to produce likewise an aborted type of so-called limited diseases is a logical procedure. Disease is not treated, but its effects on the system are so managed as to secure and maintain proper vitality. Pneumonia was formerly treated in many instances with greater success than at present since the self-limited conception has obtained. What is true of pneumonia is likewise true of typhoid fever, where the great indication is to prevent sapping of vitality. That typhoid fever is aborted, no one who has had extended experience with atypical cases can doubt. A careful study of these cases reveals the fact that they are produced by certain factors which therapeusis can mimic to a greater or lesser degree. The disease, however, must be studied from the standpoint of its effects on the given constitution and not from the generic conception of typhoid fever.

The autotoxic states come peculiarly under the same category, since the symptoms from the effects of the cause on the constitution attacked and the indications for treatment vary with the effects produced on the general constitution. Here the great aim is to secure proper elimination without strain on the eliminatory organs. These autotoxic states mimic almost every type of disorder not excluding those due to the bacterial toxins. A large number of recoveries in alleged bacterial disorders have occurred by the proper treatment of autotoxic conditions in which many of the clinical symptoms mimic those of bacterial origin. Scientific therapeusis, therefore, implies a proper study of both direct and untoward effects of drugs correlated with a study of the symptoms presented by a given case. Neglect to observe carefully the conditions underlying atypical cases is due to the belief in the absoluteness of the course of self-limited diseases. The fact that variation of the culture medium implies change in the virulence of a given germ should have shocked this alleged law to its foundation since it no longer explained the facts nor did it exclude other explanations, as scientific proof should have done. The fact that "symptom remedies" have been decried in the treatment of disease (another very popular medical error) arises from the unscientific conception that treatment of symptoms has no effect whatever on the constitution of the patient, and hence on the progress of the disease. The fact that symptoms at the very least may exhaust general vitality, and the further fact that it is upon the general vitality that the chances of recovery depend, have not been taken into consideration to the degree that they should be in the ordinary conception of therapeusis. Strictly speaking, the older belief that the physician does not cure disease, but guides the patient to recovery, is the essential basis of scientific therapeusis.

A nurse can give antidiphtheritic serum and treat a case of diphtheria as well, possibly, as a doctor, but in pneumonia and other diseases for which we have no specific a good physician, who can do things to maintain the patient's vitality, relieve his suffering, and guide him through to a successful recovery, is urgently needed.

I am weary of listening to the cold, hopeless words of the ultra-scientific doctor who says we can do nothing for acute diseases, they are self-limiting, and Nature will do all that is necessary to do, and it is "unscientific" to treat symptoms.

A storm at sea is self-limiting, yet we would feel very ill at ease if we were aboard a ship during a storm should the captain assume the attitude of some of the alleged leaders in the medical profession and do nothing towards guiding and helping his ship to breast the wind and waves. Let us have more common sense and optimism, even if we are accused by some of being "unscientific."

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The Form of Red Blood Cells in Mammalia.—Retterer divides the red blood cells into three classes: The small cells from three to four are spherical and essentially chromatic; the hemispherical cells are composed of a central chromatic mass, surrounded by a clear cirtical layer, the cortical protoplasm showing on one surface or the other a biconvex thickening; the semilunar cells have a central chromatic mass, the two surfaces of which are more or less hollowed out.—*Gazette des Hopitaux Civils et Militaires.*

THE EFFECT OF BLOWING UPON WIND MUSICAL INSTRUMENTS WITH SPECIAL REFERENCE TO TUBERCULOSIS.

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It is a general belief among performers upon wind musical instruments that such exercise is beneficial to the lungs, and that such performers are more free from disease of the respiratory tract than the average run of mankind. The present article is an attempt to show what influence for good or bad this occupation has.

Physiology.—Blowing upon wind instruments is an act of exaggerated respiration with all the effects upon the general economy which this includes.

In playing any wind instrument the taking of the breath differs from the usual act in rapidity and depth. The performance of a melody, with due regard to the requirements of phrasing, requires that the interval between the exhaustion of the air and the succeeding intake be brief. The extent of the inspiration is always more profound than in ordinary breathing, but varies with the instrument and with the amount of air needed to give expression to the particular phrase of music. It depends also to some extent on the training of the performer. In individual private playing the breathing may be as suits the pleasure, though it is always deeper than usual. Every inspiration is not equally extensive, since the breath is often taken before the chest has returned to its usual capacity; but all the excursions are above the ordinary, varying from 5 mm. to 40 mm. or more, with the individual, the instrument, and the performance.

While the expiration is comparatively long, the respirations, as shown by mechanical records, are often about as many, per minute, as usual. In the playing of some kinds of music, and upon certain instruments, they may be more or less frequent than usual, but in private performance they must be as frequent as the performer wishes to make them. Compared with the act of reading aloud, they are more frequent.

The pressure developed within the lung during normal expiration, as shown by experiments of Donders (Landois and Stirling) is from 2 to 3 mm. Hg. The pressure in the lungs varies widely with the instrument and with the loudness of the tone. The pressure necessary for the production of tones in the most used instruments, in the compass of notes usually employed, I have found, by means of a mercury manometer, to be as follows:

	Played Softly.	*Played Loudly.*
Flute	2–4 mm	2–7 mm. Hg
Piccolo	3–12 "	6–24 " "
Euphonium	3–15 "	8–25 " "
Trombone	3–15 "	8–25 " "
B Clarinet	5–8 "	18–3 " "
E Tuba	13–21 "	16–28 " "
B Cornet	5–30 "	13–75 " "

Let us now make a comparison of the pressures in the various instruments with the pressures developing in singing. It has been found by Donders that the possible pressure within the lungs are from 80-100 mm. of Hg. The pressures necessary for the production of vocal sounds, as obtained in a case of tracheal fistula in a woman by Cagniard and Latour (Landois and Stirling), are as follows:

Whispering	–2 mm. Hg
Medium pitch	–12 " "
High pitch	–15 " "
Very high notes	–55 " "
Highest notes	–72 " "

It will be noted by a glance at the table that the production of tones on the flute corresponds with that used in whispering voice, while for vocal sounds the pressures correspond fairly with those of most other instruments.

Owing to the elasticity of the lungs and their constant tendency to collapse, there is maintained a constant negative pressure within the thorax and outside the alveoli, varying (as found by Donders) from —7.5 mm. of Hg. in the expiratory position to —9 mm. in the inspiratory position. With profound inspiration this negative pressure becomes as much as —30 mm. The circulation, both systemic and pulmonic, is greatly influenced by this condition in the thorax, the inflow toward the heart being aided in proportion to the degree of minus pressure. With the unusual expansion preparatory to blowing upon a musical instrument, this negative intrathoracic pressure is greatly increased above that of ordinary respiration, and there is a concomitant greater suction of blood into the right heart, and the heart is quickened from the increased supply of blood which it must get rid of.

With the expiratory act the negative pressure in the chest (extraalveolar) diminishes in proportion to the amount of positive pressure developed within the lungs (intraalveolar). There is then a checking of the previously hastened venous flow to the heart; but since the negative pressure developed within the chest corresponds to the degree of distention of the elastic air sacs, it will require a high degree of pressure to be developed before there will be actual obstruction to the return circulation. That this return flow may be interfered with is shown by the swelling of the veins of the neck and the growing red in the face in the cornet or trumpet players where a high note is long sustained. (See pressure required in table, above). With instruments requiring less degree of pressure there would be no interference.

Since the same conditions prevail everywhere in the chest outside the alveolic, the circulation within the lung substance will be influenced in a similar manner. Summing up other physiological effects: the outflow of lymph is hastened, especially from the lung tissue; the heart sounds and beats are not materially altered except by extreme pressure; the gaseous interchange in the lungs must be facilitated, at least temporarily; the effects of changes of pressure upon the circulation and movements of the abdominal organs are pronounced; the amount of muscular strength required varies with the instrument and character of performance.

The Musician and His Surroundings.—Musicians may be classed as professional and amateur, or those who make music a business and those who make it a pastime.

Of the first group it is demanded that they, besides having the requisite skill otherwise, shall produce a sufficient volume of tone, and that they shall play as many hours as the organization to which they belong requires. Professional musicians, again, may play in the military bands which perform in the open air through the summer, and in winter in fairly hygienic conditions indoors;

they may belong to theatre orchestras, sitting beneath dust laden draughts blowing from the stage floor, or rehearsing in cold rooms, or playing for dances in dusty halls, and going out, overheated, into the chill of the early morning. Lastly, a few of sufficient virtuosity play under good hygienic conditions with the few great orchestras of the country. Of these, however, the utmost skill in the production of quality and quantity of tone is demanded, for which they must be physically competent. In all the various employments, therefore, a comparatively strong physique is necessary, while the hygienic conditions are not always ideal.

The amateur musician has no demands upon him save those self imposed. He can play under the best conditions, as little or as much as he pleases, and with as much or little volume of tone as suits his physical powers. Frequently he joins himself to some amateur band or orchestra for the added pleasure so derived. In perhaps the majority of such organizations the greatest pleasure comes from hearing one's own instrument sounding above all the rest, so that the performance comes to be a competition as to which can play the loudest. The pressure within the lungs so developed is so great that it is truly astonishing that all the pathological conditions imagined by Robillier, and many more, do not occur every day. Frequently these men practice in underheated or overheated rooms, with a foul floor, and breathe an atmosphere laden with tobacco smoke.

As a class, musicians are perhaps more addicted to alcohol than men of other professions, and this should be taken into account in connection with any pathological conditions to which they may be susceptible.

Pathology.—In all works on pathology blowing upon wind instruments is given as a cause of vesicular emphysema; but, so far as I have been able to learn from correspondence with pathologists of wide experience, there are no records of post mortem findings substantiating this statement.

Since breathing in emphysema is so modified, one would expect that such a condition would incapacitate a musician from following his profession, but I have been unable to obtain data from the leaders of bands or orchestras on this point. The recent investigations of Prettin and Liebkin (*Münchener medizinische Wochenschrift,* February, 1904) are interesting in this connection. In their examination of 230 glass blowers who had worked at their trade for many years, they found only five of these to be emphysematous.

Dr. W. Gilman Thompson in "Text-book of Medicine," 1902, makes this statement: "The extent to which forcible expiration against obstruction, as in the blowing upon wind instruments, blow-pipes, etc., aids in over expansion of the air sacs has been much overrated. As a primary cause of emphysema, it probably has no influence, but as a secondary cause, when the lung circulation is impaired and connective tissue tends to replace certain normal lung tissue, it may have force. My colleague, the late J. West Roosevelt, examined the chests of all the blowers upon wind instruments in several large metropolitan orchestras without discovering a case in many years. Beer-drinking workmen or musicians with a cirrhotic diathesis may develop emphysema; but its primary cause is, then, the chronic alcoholism, and not the occupation." There is, then, apparently no evidence, pathological or clinical, that playing upon wind instruments is, in itself, a primary cause of emphysema.

Pathological Physiology.—Except as a cause of emphysema, I have found no mention in any works on pathology or medicine of any injurious effects following this exercise. In looking through the Army Medical Library in Washington, D. C., I came upon a suggestion of possible results in Robillier—Recueil de Mémoires de Médecine, de Chirurgie et de Pharmacie Militaires, Paris, 1825, Vol. XVI., p. 56—De L'Influence des Instrumens à vent, en cuivre sur la santé des soldats qui en font usage. I quote from it as follows:

"Among the pathological effects which may result from prolonged exercise on the clarion, cornet, and trumpet, are those on the circulation and on the lungs. The robust men with large chests become habituated, and do not suffer bad effects; but those of feeble constitution and narrow chests, those who are very full-blooded (*tres sanguins*), who have a short neck and who are large and thick set, experience, after having devoted a long time to a wind instrument, the oppression of suffocation, as if they had just been running.

"These effects come not only from the fatigue of the agents of respiration, but from the stasis of blood. This stasis of blood in the chest, likewise the frequent and rapid passage of air through the bronchi, can become a predisposition, and even a cause of catarrh, pneumonia, and, consequently, of phthisis.

"May not the engorgement of the blood in the right cavities of the heart, occasioned by the difficulty of passage through the lungs, produce at length hypertrophy and dilatation of the right ventricle? May not the reflux of the blood arterial and venous, during the long expiration, produce cerebral congestion and become a cause of apoplexy? Lastly, may not the tension of the muscles of the abdomen, with the pressing down of the diaphragm, produce hernia?"

While the breathlessness mentioned, and sometimes the dizziness, does occur, it is only with violent exertion, or where tones must be long sustained at a very high pressure, and it is probably not more serious than the breathlessness from running. In producing apoplexy it might, just as any similar exertion, as in lifting a heavy weight or straining at stool, produce the finishing touch to the preceding degenerative condition. This, and the other effects mentioned by Robillier, must occur with extreme rarity.

Bulbar paralysis is mentioned by neurologists as being sometimes the result of the continued use of the tongue and lips in playing. Dr. Chas. L. Dana writes me that "among a pretty long list of cases of bulbar paralysis, I have had perhaps one or two in which it seemed as though the cause was that of playing on wind instruments. . . . I should not consider a musician in any danger from bulbar paralysis, unless he had had syphilis."

There is a prevailing belief among musicians that performers on the oboe are subject to mental peculiarities. Mr. F. N. Innes, Director of Innes' Band, writes me: "There is doubtless a great deal of nonsense about this belief, but the belief is certainly prevalent, and I should personally say that my own experience has tended to confirm the belief that, in the cases of a small minority of players on this instrument, the effects as stated apply."

Mr. Arthur Brooke, of the Boston Symphony Orchestra, told me of an oboe player in London, who, when tried for a theft, pleaded not guilty on

the ground that his act was the result of a mental condition produced by his professional work. The condition, if it exists, has been attributed to the fact that the air is forced through a very small aperture, and so the expiration is unusually prolonged.

It seems hardly possible that any such mental effects could follow from this cause in an instrument which requires so little pressure within the lungs. It would seem that the quality of tone of this instrument, and the character of the music which is most frequently given to it, might seem a more possible cause for any such mental condition, if it exists. That there is no decrease in longevity among such musicians is suggested by the fact that an oboeist ninety-two years old recently played at a public performance in Boston.

Correspondence.—At best our knowledge of physiology is very limited, and the bodily machinery does not always obey to the letter the laws we would lay down for it. The results of experience are, therefore, of first importance in this study. In the hope of obtaining information as to the results of this exercise, I have written to a number of physicians who, from wide clinical experience, might be expected to have made note of any especial tendency to disease among such musicians, and to directors of bands and orchestras, teachers of wind instruments, and others who have had a wide and intimate knowledge of members of the profession.

That performers on wind instruments do not show any marked tendency to certain affections, one could feel assured from the following letter:

"That is a very interesting subject, and I wish I had some definite data to go upon to answer your questions. Unfortunately, I have not, nor do I know exactly where you will get it. Do let me hear the results of your investigations.

"Very truly yours,

"(Signed) W. Osler.

"Baltimore, May 4, 1904."

Similarly negative replies were received from other clinicians of wide experience. Some of the answers were more specific. I give herewith the questions sent, and the general tenor of the replies.

1. Are the performers on wind musical instruments more or less subject to (a) catarrhal conditions of the respiratory tract?

All my correspondents, except one, agree that such performers are not more susceptible to such affections. The exception is the Surgeon-General of the German Army, who says that the musicians of the Prussian Army "show a special inclination to emphysema, and in connection therewith to catarrhal diseases of the lungs." The Surgeon-General of the Austrian Army says that musicians are more rarely in military hospitals on account of bronchitis and pneumonia, perhaps because of less exposure than other soldiers. Fully half the musicians heard from (both of orchestras and bands) believe from their observations that catarrhal troubles are less frequent than in other occupations.

(b) Are they more or less subject to pneumonia?

The replies were that they are neither more nor less subject to this disease.

(c) Are they more or less subject to emphysema?

This disease seems almost unknown to musicians, either under the technical name or explained as an "overdistention of the lungs." One prominent bandmaster of many years' experience writes that he has had his physician explain to him the affection, and that he has never known anything of the sort. Mr. Louis C. Elson of Boston says "they are sometimes subject to emphysema." Dr. Tyson writes that they are more subject to the disease. As quoted above, the Surgeon-General of the German Army says they "show a special inclination to emphysema," but gives no statistics. (The mention of catarrhal troubles in connection would, with the theories before mentioned, make one wonder which came first in the case of these men). The Surgeon-General of the Armies of Austria thinks that players on the larger instruments are inclined to emphysema. I have already mentioned the lack of evidence on this subject from the pathologists to whom I have written.

2. Are they more or less subject to tuberculosis?

Most of the physicians say their knowledge of such cases is very limited, and it certainly has not impressed them that such men are more subject to this disease. Dr. Knopf gives me the following statement: "Musicians performing on such instruments offer a relatively great mortality statistic from tuberculosis and morbidity statistic of catarrhal conditions for the following reasons: Many men with inferior physique choose music as a profession, thinking it to be a light and easy way of making a living. Not infrequently these people have a distinct hereditary tuberculous predisposition; furthermore, the majority of musicians play indoors, in dusty, badly ventilated and overheated ball rooms, concert halls, dining rooms or theaters. Strauss (La Tuberculose et son Bacille) found tubercle bacilli in the nasal mucous membrane of nearly all the members of the orchestra of the Paris Opera House. On the other hand, in Europe, and particularly in Germany and France, the military bands are composed of men who must be physically up to the standard of the average soldier, and a part of their training is military. These military bands play mostly outdoors, and show to the best of my knowledge no greater or less morbidity or mortality from the respiratory organs than the rest of the army." He says that his personal experience with such persons has been limited. Dr. Trudeau writes me: "It is impossible for me to give you much information in regad to performers on wind instruments, as my experience with such patients has been very limited. All I can say is that I can remember but very few cases of tuberculosis that have come under my notice occurring in such people. My experience has been so limited, and I have seen so few of them, that I do not venture to answer your question."

The Surgeon-General of the Austrian Army writes me that the musicians of his army are not more inclined to tuberculosis than other men in the service. The Surgeon-General of the Italian Army writes that he "has never observed or heard that other military physicians have observed a special, evident influence (favorable or unfavorable) upon the development of tuberculosis due to playing on wind instruments." The Medical Director of the Armies of England writes that he has "no exact information, but there would appear to be danger of mouth infection through the same instruments being used by different performers."

I have the following from Mr. Innes, Director of Innes' Band: "I have employed a great many musicians from time to time, and the only member of my band who suffered from tuberculosis was a man who played the string bass (not a wind instrument)." Mr. Brooke of the Chicago Marine Band writes: "I have had thirty-eight years' active experience with wind instrument players.

and have never known one to die of tuberculosis, except where the case was directly traceable to the excessive use of cigarettes." Mr. Hindley of the Knickerbocker Theater (New York), who has had forty years' experience, says: "The few who died from tuberculosis in my experience have been mostly those who have lived an irregular and very often a dissipated life." Mr. Carl Clair, Bandmaster of Barnum & Bailey's Circus, writes: "I have been following circus work for the past eighteen years, thirteen years Bandmaster of Barnum & Bailey's Circus with a band of thirty to forty musicians, and during this time have had hundreds of different men under my direction, and never knew of one being troubled with any disease of the lungs." C. G. Conn, the largest manufacturer of wind instruments in this country, thinks players on these instruments are less subject to tuberculosis. Mr. Arthur Brooke, flutist of the Boston Symphony Orchestra, writes: "The only cases of consumption I have known have been three oboe, one trombone, one French horn, and one clarinet player; but every one of these I can trace to dissipation, either in younger days, or continued use of liquor, except the clarinet player, who came, I am told, from a consumptive family." Mr. Louis C. Elson of the New England Conservatory, who has had a wide experience with musicians of this country and Europe, says: "They are less subject to tuberculosis—much less." Monsieur A. Lavignac of the Paris Conservatory writes: "They claim that they are less subject to tuberculosis, but in the Conservatory of Paris I have had occasion to testify to several cases of pulmonary tuberculosis during several years with the wind instruments." (A gentleman who is acquainted with the lives of these young Parisian musicians volunteers the suggestion that their extreme dissipation is sufficient to account for all their diseases). Mr. Krehbiel, the eminent musical critic of New York, writes: "In my acquaintance, say of thirty years, with orchestral players, I can recall only one case of death from pulmonary troubles. That was the case of a cornet player, and I do not know that his profession had anything to do with his death."

I have given only the more interesting replies. Summing up the whole of my correspondence with musicians, I find that about one-half think tuberculosis not more frequent, and the other fifty per cent. believe it to be less frequent among such performers.

3. What is the percentage of deaths from tuberculosis among such performers?

The only reply giving anything valuable in the way of statistics is from the Surgeon-General of the German Army. A special study of tuberculosis in this army, made in 1898, the investigation covering a period of eight years of service. Each department of the army was grouped separately, and the following are some of the percentages from this disease per 1,000: Infantry, 1.8; field artillery, 1.8; cavalry, 1.9; light artillery, 1.9; musicians, 4.1; mechanics, 4.6; tailors, 5.0; laborers, 6.0; bakers, 7.3.

The number of musicians was 5,897, of which about 92 per cent. were players of wind instruments. Aside from the fact that the 8 per cent. who played the percussion instruments might influence the total somewhat, the figures may be considered as of the highest value.

In the armies of the United States, of England, Austria, and of Italy, the musicians are not grouped in separate health reports. Mr. Louis Elson says that "in Italy careful statistics covering ten years failed to show a single death from tuberculosis among trombone players."

The statistical report prepared by the Committee on the Prevention of Tuberculosis in New York City, gives a high mortality for musicians, but I am told by the statistician that the figures include all sorts of musicians—opera singers, piano teachers, organ grinders, etc. There were, in fact, only seventy-one of all descriptions.

While the figures of Chalmers in England may include a larger number of persons, they likewise embrace such a heterogeneous mixture and are valueless for the purpose of this article.

4. Do you know of any cases of tuberculosis or other lung trouble that have apparently been helped by such exercise?

My medical correspondents say they have not known of such cases. Dr. Knopf writes: "Since blowing a wind instrument for the purpose of producing sound does not correspond to physiological breathing, the inspiration being short and the expiration being prolonged and forced, which is pathogenic and almost pathognomic of pulmonary tuberculosis, I cannot conceive how continued playing on such instruments can be of therapeutic benefit in pulmonary troubles." More than half the musicians have written that they know personally of cases of tuberculosis which have apparently been helped, or of persons with weak lungs who have taken up the study of a wind instrument at the suggestion of a physician, and who have been undoubtedly benefited.

Without giving the entire list of such cases, it may be interesting to quote from a letter from C. A. Lanier in reference to his brother, Sidney Lanier, who was no less distinguished as a musician than as a man of letters: "He did not deem himself a consumptive until after the war, during which he was a prisoner at a bleak point of confinement. . . He thought that regular exercise of breathing into most wind instruments would be helpful and strengthening to most lungs. He thought that women, especially, should play the flute. . . . His first hemorrhage came at 25, and he lived to be 39. He continued to play until his last year."

M. Lavignac, in answering this question, says that the emphysematous can be helped by vocal exercises or playing on wind instruments. (L'emphysémateuse peut etre amélioré par l'exercise vocal ou le jeu de l'instrument à vent.)

5. Have you known any bad results directly attributable to such exercise?

The unanimous answer is "none whatever."

6. Are they more or less subject to heart disease?

All replies from physicians are to the effect that they are neither more nor less subject to heart lesions. Of the musicians most of them say that they have never known a case of heart trouble.

7. What instruments seem most helpful or detrimental?

Dr. Knopf writes: "To the strongly developed individual, the moderate playing of any musical instrument, in relatively sanitary environments, I do not consider detrimental. I know of no wind instruments helpful therapeutically or prophylactically in diseases of the respiratory organs."

A majority of the answers from musicians give the larger brass instruments and the flute as the more beneficial; while the oboe is placed first among those which may possibly be detrimental, with the bassoon and horn in the same class.

The following statistics of the wind instrument performers of the Boston Symphony Orchestra have been secured through the kindness of Mr. Arthur Brooke of that organization. They are of interest as showing the general health of such musicians. The rehearsals and concerts of this orchestra number about two hundred and fifty for the year. On so many, he says, the

	Times Absent.	*Number of Seasons.*
First flute	3	9
Second flute	4	7
Third flute	[illegible]	22
First oboe	4	5
English horn	[illegible]	18
Second French horn	0	20
Third horn	[illegible]	14
Fourth horn (over sixty years)	0	24
First trumpet	4	5
Second trumpet	[illegible]	15
First trombone	few	18

This gives an average absence of less than two times in ten seasons of two hundred and fifty days each, or two times for twenty-five hundred days.

Literature.—In works on general medicine, I have found nothing bearing on this theme save in connection with the subject of emphysema. The following suggestion for those suffering from tuberculosis is from a most intelligent layman—Sidney Lanier: "The expansion of the lungs is of the greatest importance in removing congestion and preventing hemorrhage. . . A habit of this sort (of deep breathing) once acquired will soon develop a comfortable feeling in the chest and a freedom from oppression quite astonishing in view of the simplicity of the means used. The process itself is a better expectorant than any known to the pharmacopœia, and often has more efficacy in relieving the dreadful hack of the consumptive than all the drugs that can be administered without any of their injurious accompaniments. This gentle and constant expansion of the vesicles of the lung cannot be overestimated. every means should be devised to remind oneself of it and even to make it pleasant. The latter has been accomplished with great efficiency by playing the Boehm flute. The operation of playing the flute—so far as it depends on the breath—involves the precise motion of the lungs, which is of benefit to the consumptive, to wit, a full inspiration (always take care not too full, not straining in the least) succeeded by a slow and gentle delivery of the breath. * * * the least sign of fatigue should be the signal for stopping until the next day. . . The recommendation of flute playing to consumptives will seem strange to some, and possibly there may be physicians who would oppose it. It has, however, been long known as beneficial. Quantz, the flute player to Frederick the Great, speaks particularly of its value in this behalf. Perhaps it may be proper to add that this author knows positively and personally of most signal benefits resulting therefrom." ("Advice to Consumptives in Florida," pp. 213, 214).

In Burq ("Congrès International D'Hygiene," Tome 2, No. 10, p. 408) I found this summary of a study of the subject made by the above congress in 1879. "Conclusions: (1) That all the exercises of the respiratory organs, when they are done with moderation, and always according to the laws of reasonable gymnastics of the lungs, when they take place mechanically with fatigue (either mental or physical) and if nothing prevents free pulmonary expansion, are eminently salutary, and in this capacity ought early to enter into the hygienic of all persons more or less threatened with (I do not say already attacked by) pulmonary tuberculosis.

E (2) That the professions of singing and of music, above all the playing upon of wind instruments, exercised wisely by delicate persons, it goes without saying, can only be an excellent prevention of pulmonary consumption. I have mentioned wind instruments especially, because their playing naturally excludes dramatic passion, and other causes which, with song artists in particular, too often tend to destroy the good effects of the vocal exercises."

Review and Conclusions.—The use or disuse of function determines the development or decay of the organ which functionates. It follows from this law that insufficient breathing—incomplete expansion of the lungs—is a factor in lowering the vitality of the whole body, and especially of the lung tissues and in rendering those tissues more susceptible to bacterial invasion If the effects are as believed, then deep breathing exercise must not only serve to develop the chest and give more room for the organs of circulation and respiration, but it must also serve as a prophylactic measure of importance in bronchial and lung affections. Deep breathing has often been recommended for those inclined to such conditions. The difficulty of getting persons to carry out such exercise with patience and persistence is overcome when a wind instrument is breathed into. Besides the pleasureableness which causes the person to continue the exercise, there is an absence of the attendant evil of self-consciousness—of "condensed imagination." Notwithstanding exposure, and perhaps alcoholism, professional musicians would seem, from the data I have been able to collect, to be less subject to catarrhal affections.

As regards pneumonia, they would seem to be not more nor less subject to the disease. (The only case I have known followed extreme exposure in other work).

As regards emphysema, there is no good evidence that playing upon wind instruments is ever a primary cause. Where degenerative changes in the lung tissue have been brought about through some hereditary tendency, alcoholism or other condition, the process may perhaps be hastened by such forced expiration, but it occurs only with those performers who must develop an extreme degree of pressure within the lungs. Heart disease seems to be not more frequent among musicians than with persons of other callings. The few instances given are among those performers who must develop great pressure within the lungs.

In considering the effects with regard to tuberculosis, we may consider first the

Effects on the Non-Tuberculous of Robust Constitution.—There seems to be no evidence that there is anything in the exercise of playing on wind instruments which predisposes to infection, and, on the other hand, there could not be expected to be any prophylactic effect upon lung tissue already up to a normal standard. From the statistics of the German army, we gather that musicians of robust constitution are not more subject to tuberculosis than men of any other occupation of similar sanitary conditions.

In the case of the *Non-Tuberculous with Hereditary or other Predisposition,* the limitations of hereditary physical endurance and capacity for development must not be overlooked, and the

antitoxic insufficiency of the tissues, which seems to be a part of the inherited condition, should be taken into account. Persons of the diathesis, being often less vigorous, are inclined to avoid the sports of those who possess the average of vitality.

The general condition of such persons can be proved by general physical development, and is widely believed. Also that the lowered vitality of the lung tissues may be improved by a more complete use of the lungs is as widely held. Deep breathing exercises and singing have been highly recommended as prophylactic measures, and we can certainly class with these the blowing upon wind instruments. The players of wind instruments have no thought of "doing breathing exercises," and, besides, have the exhilaration which comes from an enjoyable exercise.

Persons of a tuberculous tendency often have a voice which gives them little pleasure in singing, and for such a wind instrument offers a sound-producing apparatus as perfect as that which might be used by the most robust instrumentalist. The effort required for some instruments, when the volume of tone is considered, is not greater than that of singing, while for the flute it is much less.

In professional work, both singing and playing become more taxing from the length of time which must be spent in the exercise and the greater volume of tone required. Flute playing is the only exception to the demand for greater force. Besides the demands on strength and endurance, the surroundings of professional musicians are often far from ideal.

Briefly, then, for persons inclined by physique or inheritance to tuberculosis, blowing on wind instruments presents a pleasurable exercise tending to expand the lungs and develop the chest, with accompanying good effects upon the circulation and digestion. The instruments used should be those in which the breath is not too much forced or withheld, and which require muscular exertion and a depth of breathing compatible with the physique of the performer.

That development of the chest and lungs does follow such exercise, when wisely carried on, seems borne out by my correspondence, by the literature quoted, and by a former investigation of the subject. The limitations of heredity as to possible physical development in persons of this type should not be overlooked, and they should be discouraged from adopting music with the expectation of finding in it an easy means to a livelihood, or with the anticipation of reaching a top round in the professional ladder.

For the Tuberculous it would seem that the breathing of the exercise under consideration is never injurious so far as the local condition is concerned, and in tending to expand unused or collapsed portions of the lungs and influencing the circulation in those regions might be of some benefit. The pneumatic cabinet, which has found considerable favor in the treatment of the disease, simulates in its respiratory effects somewhat the expiration of this exercise. In this machine, however, the inspiration is wholly passive, the atmospheric pressure on the whole body outside the alveoli being reduced. The expiration, however, is against pressure inside the alveoli sometimes as much as 50 mm. Hg.

The organism which has contracted tuberculosis may be compared to a ship which has sprung a leak. The inflowing water should not only be pumped out and the leak repaired, but it is also wise at the same time to lighten the burden of the vessel by getting rid of superfluous cargo. In the diseased we should endeavor to aid the local reparative process, but at the same time should not forget to diminish to a minimum the general wear and tear. While the exercise in its special effects seems to be comparable to an aid in checking the leak in the ship, may it not at the same time, through the muscular exertion which goes with it, add an additional burden to the general economy, and so neutralize local effects for good? Herein lies the danger. That the exercise is pleasurable, while making it the more beneficial to the normal organism, adds to the danger for the tuberculous. We have already noted the muscular effort required by some instruments when used in military bands and large orchestras. Of course, this effort is not long continued, and is hardly to be compared in laboriousness with most occupations. In those organizations requiring a less volume of tone, the theater pit and dance hall offer most vicious surroundings, even if the work be not fatiguing. The amateur is not bound to any hours of work nor to bad hygiene, and the only danger which besets him lies in overdoing, or in ensemble playing under bad conditions of ventilation or of dust.

Where the quality or quantity of his work then seems to make too great demands on his general vitality, the professional musician who has contracted tuberculosis would best adopt some less taxing work, and where his surroundings are bad he should find a place entailing less danger from added infection. The amateur should shun ensemble playing in bad surroundings, and should avoid carrying the exercise to the point of fatigue. Musicians having the disease should be made aware that they may spread the infection by allowing others to use the mouthpieces of their instruments.

Since in the first steps in learning to play an instrument much effort is wasted in producing the tones, it would seem unwise for one in whom tuberculosis had progressed to take up the exercise, as the pleasure would be slight as compared with the fatigue which might be entailed.

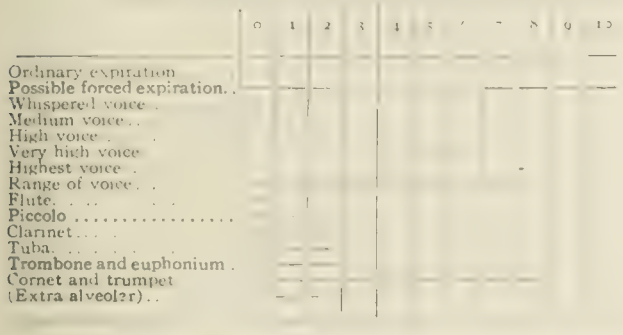
The instrument par excellence is the flute, especially the Boehm flute, since it offers less effort than the other instruments, and less even than singing; requires less skill in the production of tone than the reed instruments; is adapted for individual playing; is possessed of beauty of tone; is not somber; has a mechanism easily acquired, though always offering something to overcome in perfection of technique; and, lastly, is an instrument adapted for women as well as men. Of the other most used instruments, probably the soprano saxophone comes next in ease of blowing and manipulation, though it does not offer the same beauty of tone. The clarinet, while an especially interesting instrument, requires much more study, and, for a good tone, more force than the flute, with less freedom of breathing. The larger instruments, while requiring less pressure, demand larger lung capacity and more frequent breathing and, so, more muscular exertion.

While conclusions favorable to the use of this exercise have been drawn, I hope the possible objections have been carefully pointed out. It certainly is not the aim of the writer to set all the world a playing on pipes and a tooting on trumpets, with the expectation of thereby ridding mankind of all affections of the respiratory tract. Unfortunately, the organism and its relations are too complex for such results. However, this

exercise, not forgetting its proper limitations, should not be overlooked as a simple, safe, and pleasurable method of helping in the more complete development (up to the bounds of individual heredity) of the resistive powers, and possibly as an aid in helping Nature rid herself of conditions opposed to health and life.

Pressures Necessary in Producing Vocal Sounds and in Playing Upon Wind Instruments.

(Registered in Centimeters of Mercury.)



APPENDICITIS.

TO OPERATE OR NOT TO OPERATE.

By J. J. BROWNSON, M.D.,

DUBUQUE, IOWA.

In November, 1903, I read a paper before the Austin Flint, Cedar Valley Medical Society at New Hampton, Iowa, giving my views on operation for appendicitis, as practised by me in this locality for the past fifteen years. The principles upon which I based the time for operation were as follows: There have been more deaths from appendicitis since the operative method has been in vogue than during the expectant plan, which I believe is due to interference being practised at the wrong time.

1. The operation for appendicitis ought to be done in the primary stage or before high fever period. The appendix should be removed, to guard against fulminating cases and those in which rupture occurs into the abdominal cavity.

2. In the secondary period after suppuration, drainage should be instituted, and nature left to take care of the appendix.

3. In the interval, after all symptoms of inflammation have subsided, the appendix should be removed.

The operation ought not to be done in the intermediary period when there is fever and distention of the abdomen, because the danger from operation at this period is greater than the risk of the case becoming fulminating, or the abscess bursting into the abdominal cavity.

Since that occasion I have kept a close observation upon the results of operation for this disease in Dubuque county, not only in my own, but in the practice of other physicians. I am pleased to state that while many of my confreres did not at the meeting openly coincide with my ideas as to the time for operation in this disease, yet I noticed that the principles of the article were being quite closely followed. As a result there have been but two deaths in this county from appendicitis, following operation, since the publication of that article in *American Medicine*, January, 1904; while at the same time, so far as I know, there has been no operation performed for appendicitis during the intermediary period of the disease.

It will perhaps be interesting to know some of the points brought out in the discussion of my paper before the society at that time. Much to my surprise, the trend of that discussion, which was led by two of Chicago's prominent surgeons who were present at the meeting, seemed to be directed to the treatment of appendicitis when abscess with adhesions had formed. The Chicago gentlemen denounced as most unscientific and unsurgical the proceeding which would simply open the abscess and leave the appendix. They very forcibly declared: "Go down and break up the adhesions. Open up, clean up, and remove the appendix." They probably overlooked the fact that when nature forms the abscess the portion of the appendix that is diseased sloughs away and is removed by that same process of nature that eliminates the materies morbi from any part of the system when suppuration and evacuation take place. Everyone knows that should recurrence take place in one of these cases where the abscess had been evacuated it would follow up the old scar and there would be no danger of the pus breaking into the abdomen.

A surgeon of great prominence in the East reports very successful results in what we have hitherto called cases of acute septic peritonitis, caused by perforation of the appendix or the bursting of an abscess pouring the septic contents directly into the abdominal cavity. A great many of us in the West have always regarded these cases as surely fatal. From the description given by the gentlemen in the East, the cases they call acute septic peritonitis (the symptoms being a pulse of 120 to 130, temperature 102°, with prostration and pus diffusing into the peritoneal cavity) are here in the West regarded, not as acute septic peritonitis, but rather as abscess with adhesion or incapsulation. On close examination it will be found that no case of acute septic peritonitis, caused by the direct perforation of the peritoneal cavity, will be found with a temperature of 102° or a pulse of 120; rather will they have a temperature of 105° or 106° and pulse of 140 or 160, together with a leaky skin and such extreme prostration as to make it plain that the patient is thoroughly overwhelmed with the poisonous principles and is practically moribund. These are the cases which result from the waiting plan in the abscess period and result in death, no matter what procedure is followed. It is better in these conditions to let nature take its course and not to attempt a forlorn task which injures the reputation of both the operator and the science of surgery.

The so-called "starvation treatment" is really no treatment at all. It is simply awaiting the proper period for operation, should such period come. The symptoms in these cases of appendicitis, to a certain extent, are the same as in typhoid fever, so near akin indeed as to permit us to use them for comparison. The greatest danger of death from appendicitis is from perforation: one of the greatest dangers in typhoid fever is also from perforation. The truth is that a thousand cases treated by the "starvation method" would exhibit no better results than would be shown in a like number of cases treated by the ordinary expectant plan with the administration of proper liquid nourishment, as is usual in typhoid or other fevers. The theory that starvation keeps the intestines quiet is untenable, for it is well known that the intestinal canal is never quiet unless under the influence of morphine, and the use of this drug in such cases is decried by nearly all authors. Indeed, some of the best authorities prefer the opposite treatment—catharsis; and they report fully as good results. If one will follow the conclusions reached

in my paper, published some years ago, and which conclusions I am happy to say are confirmed by clinical results and are now approved by the best authorities, he will agree that there is in the course of appendicitis a period when the treatment must be nonsurgical. Such time is the intermediary period, marked by great distention and high fever. If we desire to give the patient the benefit of the wisest, most conservative, modern philosophical treatment we must refrain from surgical interference during this stage of the disease.

Of course there is risk in the expectant treatment, as there is in the operative treatment, but to me the question to be decided is, "Is the condition of the patient and the period of the disease such that it is more dangerous to operate than it is to postpone operation?" It is now generally conceded that the risk of an operation is greater during the intermediary period than the risk of perforation, and this view is confirmed by clinical results. Hence we conclude that when the disease has reached the intermediary stage a wise and judicious expectant treatment is the safer course. Should an abscess form, it must be promptly treated by proper drainage, as previously indicated. If no abscess form, the case will go on to resolution and the patient will recover. As to the other periods of the disease, the advisability of operation and the technique are fully settled.

It will perhaps be of interest to give the comments of some of the leading men on the above propositions as stated in my paper, after it was published nearly three years ago. One of the greatest authorities on appendicitis in this country thus writes: "You have boiled down the subject to some very substantial and practical facts, and I feel that your paper would make a good guide for the general practitioner." A professor of surgery in one of the universities says: "I desire to thank you for the copy of your article on appendicitis. More than that, I want to congratulate you upon having reached conclusions that are sound and impregnable. My experience, which has been considerable, coincides directly with your own, and the facts are so indisputable and easily demonstrated that I marvel when I hear of men going directly in the face of them, as many do." Another prominent physician said: "I have just read your New Hampton paper on appendicitis. I am becoming more and more convinced that the principles advocated in said article are correct." One of the leading authorities in medicine said: "The mortality throughout the country at large, in appendicitis, is probably greater now, owing to the indiscriminate operation by men who are not experts." A leading medical editor said: "I am much pleased with your views, as they correspond exactly with mine." One of the officers of the society writes: "Notwithstanding the fact that your conclusions were not concurred in by gentlemen present whom we are bound to respect and acknowledge as more or less authoritative, yet I believe that at least in the work of private practice without expert facilities you are right beyond a reasonable doubt." A practitioner of long experience says: "I have long since become satisfied that operation for the removal of the appendix under any and all circumstances has sacrificed many lives that might have otherwise been saved."

In a paper published in *American Medicine*, August, 1904, Dr. H. Wetherhill says: "Were I or one of my very dear friends in the third to sixth day (intermediary period) of peritonitis of appendicular origin, and obliged to make a choice of some gray-beard with half a century of empiricism back of him, or that of some modern surgical enthusiast of the 'operate as soon as the diagnosis is made' sort, I would not hesitate a moment in choosing the former. However brilliant and dexterous and famous an operator might be, I would not select him if he had a penchant for operating on sight and for removing the appendix regardless of its situation and surroundings. I am far from alone in believing, on the other hand, that intermediary operations are usually attended with a general mortality, and that indeed they are sometimes directly homicidal."

The prime object in the treatment of appendicitis is to prevent the usual cause of death, viz., perforation. Of course the question would devolve itself into, "Would the danger of removing the appendix during this period be greater than the risk of the appendix perforating?" I might go on and cite opinions and instances by famous authors everywhere, but it would take up too much time. I only wish to say in conclusion that a conservative, close observation of these cases in a moderate surgical practice in this locality for fifteen years leads me to state that the intermediary period is the time when a surgeon should withhold his hand.

I repeat: "To Operate or Not to Operate?" To operate in the primary period, in the abscess period, and in the interval period. *Not* to operate in the intermediary period, when there is great distention and high fever, because the risk of perforation of the appendix is less than the risk of operation at this period.

I believe and I hope that everyone who reads these conclusions carefully and ponders over them and observes the results, not only in his own practice, but in that of others, will be convinced of their truth, so that the publication of them will, I trust, be considered at least a slight attempt to establish landmarks and guideposts in the management of appendicitis.

Regarding the two deaths above referred to, following operation, one occurred in the practice of one of my friends; it was the case of a child that was operated on in the abscess period and died some two weeks after operation. The case of death following operation in my own practice was as follows: Miss Q., age 23, had had previous attacks of appendicitis. I was called in consultation with Dr. Heles to see her on the third day of the disease. Her temperature was 100° and her pulse 90; no distention, but extreme tenderness in the McBurney region. She had vomited the day previous and on the morning I saw her. Operation was advised and accepted, and she was removed to the Mercy Hospital in the afternoon. The operation was performed at 3 P.M. On opening the abdomen, the appendix, very greatly enlarged, imbedded in a mass of adhesions, was enucleated with considerable difficulty, but finally removed without perforating. It was very much enlarged and contained pus and a concretion as large as a kidney bean. The concretion had acted as a ball valve, allowing the contents to pass from the bowel into the appendix, but preventing their return. The constant pressure had so increased the size of the appendix as to produce almost ulceration at the points of its juncture with the cecum. The operation was quickly done, without any accident, and the wound closed as usual. The patient reacted well and I left for St. Louis that evening. Dr. Heles furnished me the remaining history of the case, which was as follows: "The patient reacted well, fever dropped, pulse became normal in a day or two, and everything went along to a most speedy convalescence. The stitches were removed on the tenth day. On the evening of the fourteenth day, after entertaining her friends for an hour or two in

the evening and dismissing them with a good-night, saying that she was going home in the morning, they left. She requested the nurse to turn down the light, so that she could get some sleep, as she was going home in the morning. The nurse did as she was requested and left the room. In about five minutes the bell rang, and when the nurse entered the room Miss Q. sat up in bed and said, 'Open the window; I am smothering,' and fell dead upon her pillow."

On talking with some of her friends afterward I learned that she had had, two years previous, while attending a picnic, a fainting spell, from which she was revived with great difficulty. From the history and outcome of this case, which, of course, had nothing to do with the operation, I am inclined to think that death was caused by probable heart clot.

As stated, this is the case in which I had death following operation for appendicitis; it shows, however, that no matter how careful or accurate we may try to be, work by human hands will never attain perfection.

Spastic Constipation.—T. W. Stumm, in his paper on this subject, declares that treatment is the most important thing in these cases. The physician must remember that he has to deal with an irritative condition in the large intestine, and that the ordinary means resorted to in relieving atonic constipation will only aggravate it and make it worse. The patients usually try all the cathartics known to them, and find that they only make the condition worse. The diet must be selected with great care. Patients suffering with spastic constipation should be given foods that are bland and non-irritating. Such a diet, rich in cellulose, as is ordered in atonic constipation, will only aggravate spastic constipation, by increasing the irritation in the intestine. Pickles, cabbage, turnips, cucumbers, pork, pickled meats, goose, strong coffee, and tea should be avoided. Fruit may be allowed, but would much better be cooked than raw. Food that will excite peristalsis through a chemical action rather than a mechanical one should be selected. In contradistinction to atonic constipation, the patients do much better with only moderate exercise. Sometimes rest in bed for two or three weeks will do much good. Warm baths and hot applications to the abdomen are beneficial in causing a relaxation of the spasm. The baths should be taken just before going to bed, and heat in some form, applied while in bed, is helpful. During the day the abdomen should be well protected with woolen cloths. Medicinal treatment in such cases is not satisfactory. Cathartics in all forms should be avoided. Belladonna or opium acts very well in relieving the spasm, but the best therapeutic results are obtained through the injection of olive oil, or what is equally as good, cottonseed oil. This is used at first every night, later every second night, and then once or twice a week, as it is needed. After a time it may be entirely discontinued. The action of the oil is probably threefold; it lubricates the mucosa of the intestine; it softens the intestinal contents; it further aids chemically in splitting fatty acids. The last action is probably the one that causes an increased peristalsis through chemical excitability. The writer adds that, in order to secure results, the oil must be properly injected. It should be given before going to bed, and retained until morning. The ordinary individual will retain a pint. The patient should lie on the right side, the left limb extended, the right flexed at the knee and placed in front and over the extended left one. The oil, at a temperature of 100° F., is allowed to run slowly into the intestine through a moderate-sized rectal tube passed seven or eight inches into the rectum. The patient should then remain perfectly quiet. If the hyperacidity is annoying, it may be necessary to order a little magnesia for a time, but an excess of fat in the diet will usually overcome any acidity. Small doses of Carlsbad salts, but not enough to act as a laxative, may be used instead of the magnesia or the fatty diet, if the physician does not care to employ these. It is sometimes necessary to employ bromides if marked nervous symptoms are present. Such means as are outlined here usually secure good and lasting results. Electricity, massage, violent exercise, cold baths, and other measures employed in atonic constipation should not be used in the treatment of spastic constipation.—*The St. Paul Medical Journal*

Ante- and Post-Operative Treatment of Cancer of the Breast.—George C. Johnston says that the changes taking place in carcinomatous tissue when exposed to therapeutic doses of Roentgen rays, consist of a breaking down of the islands of diseased cells, beginning and most pronounced in the rapidly-growing periphery. A peculiar endarteritis of an obliterating type attacks the blood-vessels, which are surrounded by masses of small cells. This degeneration is apparent in even the deepest part of the tumor. A dosage can be formulated and administered strong enough to destroy the pathological tissue, but sparing the normal. In addition to the change in the tumors and the blood-vessels, a peculiar action on the lymphatics, both vessels and glands, is noted. The former are, as it were, sclerosed. The glands are small, hard, fibroid masses. If there were no other factor to be considered, radiation might be regarded as an agent fulfilling every indication to be desired in the treatment of this disease. Yet the fact has to be accepted that the use of the ray alone in the treatment of carcinoma is jusified in but few cases. As of old, the mainstay is careful complete surgical extirpation in operable cases. On the other hand, operation alone cannot boast of a remarkable percentage of cures. The writer describes a course of radiation which he believes will accomplish the desired prophylactic result in the majority of cases. He is convinced that cases of extensive carcinoma may be taken in charge, rayed, operated upon, and by a continued post-operative treatment freed from carcinoma. Successful work demands the intelligent cooperation of the surgeon and the radiologist. Much can be accomplished when these two work together with a full knowledge of the limitations of their art. The *x*-ray must not break down more tissue than the patient can successfully eliminate, and the knife must not remove more tissue than is absolutely necessary. The writer states that a large percentage of successful results need not be expected, but he believes that failure should stimulate repeated endeavors. He holds that the cure of one ordinarily hopeless case is a greater victory than a long series of successful results in ordinary, primary cases.—*Archives of Physiological Therapy*

Fat Indigestion from a Mother's Milk.—W. P. Northrup gives the history of this case in which a mother, anxious to nurse her child, fell into misfortune through trying to follow the conflicting advice of several physicians. If any one efficient practitioner had had the sole responsibility of the case, all mishaps would have been prevented. An attack of tonsillitis on the part of the mother apparently disturbed the baby's digestion somewhat. The second attack with its consequent anemia wholly upset it. An excess of fat was found in the mother's milk, apparently produced by forced feeding, including a quart of milk daily, lack of exercise, indoor living, and two attacks of tonsillitis. This excess of fat brought about in the infant ileocolitis with the symptoms of diarrhea (no vomiting), with frothy, brownish to olive-green, offensive passages, containing an excessive amount of mucus in tenacious masses, colic, sleeplessness, and loss of weight. The fat in the milk was lowered by diet and driving in the open air, from 8.98 per cent. to 4.90 per cent. The infant became susceptible to the presence of the least trace of milk in her food and could not digest it for a time. Castor oil and barley water were given and irrigations were resorted to. The child recovered. The writer states that in another case of this kind he would take the baby from the breast at once.—*Archives of Pediatrics.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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EXPERIMENTAL WORK IN GASTRIC PHYSIOLOGY.

A VERY considerable portion of the *Festschrift** recently published under the direction of Professor Orth by the workers in the Pathological Institute of the University of Berlin in commemoration of the opening of the new buildings of that department is devoted to a series of studies on gastric physiology. The work of the institute is carried out in three departments, devoted respectively to pathological anatomy and histology, including bacteriology, to biological chemistry, and to experimental biology. The latter of these, of which Adolf Bickel is the head, has been equipped with unusual facilities for operative work on animals, and the technically rather difficult surgical procedures required in studies of this sort could therefore be prosecuted under the most favorable circumstances. A portion of the observations were made on dogs which had been subjected to the Pavlov operations. In one of these, as is well known, a gastrostomy is done and later the esophagus is divided in the neck and the end communicating with the stomach is closed while that leading from the mouth is sutured to the skin. Such dogs must be fed through the gastric fistula, as food taken into the mouth passes out again through the opening in the neck. The other operation consists in the formation of a gastric diverticulum, or lesser stomach, which is completely shut off from the remainder of the organ and is provided with a fistula leading to the surface. Food swallowed enters the main cavity of the stomach, and the secretory activities of this portion of the organ are reproduced in the lesser stomach, from which gastric juice may be obtained for analysis entirely uncontaminated. The reflex secretion obtained from animals of the former type represents the activity of the entire gastric mucosa, but is the result of only a fraction of the normal physiological stimuli, since the food never comes in contact with either the gastric or intestinal walls. Animals of the second group produce juice formed in response to normal stimuli, but not typical of the entire stomach, since it is manufactured only by a portion of the fundus. The results to be described were obtained from the study of such experiment dogs, and also comprise what, according to Bickel, are the first observations made on an adult human being presenting conditions similar to those occurring in these laboratory animals. This person was a girl of twenty-three years who eight years previously had acquired an impermeable stricture of the esophagus in consequence of poisoning by lye. After having been nourished for some years through a gastric fistula, the esophagus was divided in the neck, the lower end buried, and the upper end brought to the skin surface. By connecting this opening with that in the stomach by a rubber tube the patient, who had almost forgotten how to chew and swallow, was enabled to take her food by mouth. On removing the rubber tube the same conditions existed as in the experiment dogs. Roeder and Sommerfeld have reported observations made in a similar case, but this patient was a child of twelve years.

Many of the investigations made by Bickel and his collaborators relate to freezing-point determinations, electrical conductivity, and ultramicroscopic observations, and the results obtained, while of value from the laboratory standpoint, are not, yet at least, directly helpful to the clinician. Others, however, bear directly on practical matters and should prove of much interest to practitioners. For example, it appears that, although the secretion of the specific substances of the gastric juice is an intermittent process, mucus is being constantly formed, and in consequence the mucosa of the resting stomach is alkaline to litmus. Silver nitrate and other caustics evoke an active secretion of mucus, but especially is this the case with the electrical current, which causes the production of mucus alone without any of the components of the true gastric juice. No matter how applied, percutaneously or endogastrically, whether strong or weak, galvanic or faradic, the electric current, according to these observers, is valueless as a stimulus to the digestive functions of the stomach, and the gastric electrotherapeutists will have to revise their doctrines. Furthermore, an abnormal secretion of mucus can be produced experimentally only by local stimulation of the mucosa, and only those regions directly irritated respond by forming mucus. That the secretion of gastric juice can be encouraged to a remarkable degree by stimulating the senses of taste or smell is well known, but it was found that it made no difference in the effect on the gastric mucosa whether the sensory impression were an agreeable one or not. For example, both quinine and asafetida were very repugnant to the young woman with the gastric fistula, yet their administration influenced the secretion favorably. The inhibiting effect on secretion of strong emotions could be strikingly demonstrated in the case of one of the experiment dogs that always flew into a violent rage when a cat was placed near his cage. Whenever this was done the flow of secretion was abruptly checked. Another observation of practical importance was that the same individual on different occasions responded differently to the stimulus of the same amounts of the same foods, on some days more juice being formed than on others. The more juice is secreted, the higher will appear to be the acidity of the stomach contents, which does not depend so much on the percentage strength in acid of the juice as on the amount of juice secreted. The unreliability of the results obtained from the analysis of a single test meal is evident, as the same stomach may on different days show great fluctuations in secretory

* Arbeiten aus dem Pathologischen Institut zu Berlin, Herausgegeben von Johannes Orth. August Hirschwald, Berlin, 1906.

activity. On the other hand, although the quantitative variations may be great, the gastric mucosa appears to be provided with a regulating apparatus which is very efficient in controlling the composition of the juice, for this is subject to astonishingly slight changes. A highly interesting series of studies is devoted to the effects of the different foods, condiments, etc., on the gastric secretion, and remarkable variations in the effect of different substances are recorded. Fat and solutions of sugar and starch are no more stimulating than water, and even egg albumin has little value in this respect, while tea is directly inhibitory.

It would lead too far afield, however, to endeavor to follow this group of workers through the entire range of their explorations in gastric physiology. The results obtained bear on many aspects of the disorders of the stomach and their treatment, but especially do they contribute to an understanding of the intimate relationship existing between the nervous system and the digestive function. Since it is the nervous dyspeptics who contribute the lion's share of the revenues of the stomach specialists, we opine that this series of experimental observations will be found of unusual interest and value to those concerned with this branch of medicine.

THE SANITARY ASPECT OF THE RE-OCCUPATION OF CUBA.

When, nine years ago, the situation in Cuba was seen to be approaching an acute stage, and it became apparent that the only relief would be in American occupation of the island, the Medical Record predicted that one of the greatest benefits to follow such occupation would be the sanitation of Havana and the freeing of our southern ports from the constant menace of yellow fever. The result even surpassed our anticipation, for the confirmation of Finlay's mosquito theory by the convincing experiments of Reed, Lazear, Agramonte, and Carroll, and its practical application by Gorgas, effected a sanitary revolution unequaled in the world's history. Havana, the center and the distributing point of yellow fever, and a city scourged by smallpox as well, became in less than a year, with all its natural disadvantages and still unsewered, one of the most healthful cities of the world.

For some time after the evacuation of Cuba by the American Army, Havana remained free from yellow fever, but for over a year disquieting reports have come from the island that the disease was regaining a foothold in the larger cities, and it would seem that the political disturbances necessitating a reoccupation of the country by the United States forces have come opportunely from a sanitary point of view. It is reported that on October 1 there were five cases of yellow fever in Havana and several suspected cases in Cienfuegos and other places in Santa Clara Province. The commercial interests in the island have welcomed the resumption of American control, but no less warm is the welcome of the hotel keepers, the transportation companies, and others interested in tourist travel, who have been affected injuriously by the reimposition of quarantine against the island. It is said that they are preparing to petition Gov. Taft that the United States, whether the present American control be temporary or otherwise, retain permanent control of the sanitary affairs of Cuba. These interests contend that inasmuch as the Cuban government has failed to carry out the requirements of the Platt amendment with respect to sanitation, the United States is justified in permanently taking over the sanitary supervision of the island.

This is not to be construed as a reflection upon the present chief of the sanitary department of the island, for those who know what obstacles he has had to contend against in the administration of his department have only admiration for what he has achieved. He has been hampered in his work at every turn by lack of funds and by want of power to enforce his decrees, and the wonder is that he has kept the city and the island as free from disease as they are even to-day. But a health officer, in his war against disease, must have unquestioned and absolute power, and this, in a young country like Cuba, with its insanitary traditions of centuries, can be enforced only by military authority; the civil hand is as yet too weak. It will not be necessary to supersede Dr. Finlay, for he has proved his efficiency; but he should have the power of the United States behind him, and he and his successors should be, for many years to come—long after the civil administration of the island has been again delivered into the hands of the Cubans—under the control of the Army or of the Public Health and Marine Hospital Service, and supported in their task by the authority of the United States. Only in this way can Havana be kept, as it was made by Col. Gorgas, an inoffensive neighbor of our Gulf and South Atlantic cities.

THE SALOON AS A DISSEMINATOR OF DISEASE.

The saloon in every civilized country is regarded by a certain section of the inhabitants as a formidable menace to health. While this is true to some extent, and while drinking to excess wreaks more harm physically and mentally than any other cause, yet it has not as yet been absolutely proved that the consumption of alcoholic beverages, taken with discretion and at the proper time, does harm. On the alcohol question the opinions of medical and scientific men are strangely divergent. Some leaders of the medical world, as Sir Victor Horsley and Professor Sims Woodhead in England, hold alcohol in abhorrence and state that as a drug it is useless and as a beverage it is pernicious. Other equally distinguished leaders of science, as Professor Atwater, Professor Chittenden, and most of the German scientists who have made investigations into the matter, state that alcohol has its uses and forbear to stigmatize it as utterly destructive to body and mind. A large proportion of English-speaking medical men reserve their decision on the subject until more has been determined concerning the action of alcohol than is at present known. This, in the face of the results of numerous experiments which have taken place during the past few years, is probably the wisest course to pursue. At the same time it is satisfactory to note that drinking of alcoholic stimulants has never been so prevalent here as in Europe, and that the people of America on the whole are a temperate race.

The saloon, however, is in many instances the means of originating and disseminating disease, irre-

spective of drinking. This is especially the case when such establishments are not kept in a sanitary condition. Two special articles dealing with this matter in Great Britain, which appeared in the *Lancet* a number of months ago, contain the results of a very careful investigation of the subject. Of course, it is not easy to compare the public houses of London and the saloons of New York, viewed from a hygienic standpoint. Many, if not most, of the London establishments in the poorer quarters of that city cannot by the widest stretch of the imagination be termed sanitary. In fact, as the writer in the *Lancet* states, "The question of sanitation is almost wholly disregarded in the management of public houses." The so-called private bars of the British public house are unknown in this country. These bars are merely narrow boarded compartments opening onto a common counter and are presumably provided for the convenience of women or of those who do not wish to drink in a public house in the full sight of their fellow men. Such compartments are naturally often overcrowded, and one who uses them is compelled to rub shoulders with all sorts and conditions of men, regardless of their sanitary state.

It has been proved more or less conclusively that pulmonary tuberculosis is spread by the agency of public houses in Great Britain, and this is probably also the case to a lesser extent in regard to saloons of America. Although the saloons here are far cleaner and better ventilated than are those of Great Britain, there are many in which diseased and unwashed loafers spend a great part of their time. There are many other affections which may also be easily spread by means of the saloons. Among these are diphtheria and other infectious diseases, syphilis, and almost all forms of skin diseases. Over and above the fact that American saloons, as a rule, are far cleaner and more hygienic than the British public houses, there is one lamentable feature of drinking in Great Britain which is absent here. The habit of drinking among women in public bars is referred to. Drinking by women is practised everywhere, but in no other part of the civilized world can it be witnessed to such an extent as in Great Britain. What are known in England as respectable women are accustomed to foregather in the public house for the sole purpose of drinking and gossiping. No particular loss of self-respect attaches to the woman who does this, and consequently the custom shows no signs of declining.

We may, on the whole, congratulate ourselves that, although in many matters hygienic we are not quite in the front, at least our saloons will compare favorably with those of the other great English-speaking people.

The Ethics of Manufacturing.

Much has been written of late in the medical journals of this country on the ethics of proprietary remedies, both those prepared solely for physicians' use and those advertised to the general public. With the exception of one or two journals in which the denunciation of almost every drug, simple or compound, not listed in the Pharmacopœia, and even of some long since admitted to this compendium, has reached hysterical proportions, this discussion has been reasonable and sound, and the agreement has been reached that physicians are within their rights in seeking to know the ingredients and their relative proportions contained in all compound remedies offered as aids in the treatment of disease. The details of the methods employed in the compounding of these preparations are not essential, since few physicians would understand them if they were published, and they may properly be regarded as trade secrets the revealing of which would only result in depriving the manufacturers of the legitimate reward of their labor. As yet, we regret to say, the agitation has not had the desired effect, since inquiry among pharmacists shows that physicians continue to prescribe the secret remedies in spite of the anathemas of the violent and the arguments of the reasonable. The reason for this is probably that the prescribers have found the remedies effectual and so continue to use them empirically in cases in which they believe they are indicated. It will take time to bring the mass of the profession, as well as the manufacturers, to view this matter in the proper light, and the more soberly the subject is discussed and the less vituperation is used in place of argument, the sooner the looked-for reform will be effected. The *American Journal of Clinical Medicine* has gone a step further than most of its contemporaries in applying the test of ethics to the manufacturers as well as to their individual products. It calls attention to the well-known fact that some drug houses which offer perfectly ethical preparations to the profession also manufacture many of the quack medicines advertised to the public, not selling them themselves, but supplying them to the conscienceless proprietors who cater to the public craving for "dope." It asks whether all the preparations of such manufacturers should not be placed under the ban of professional disapproval. This is a large question, and apparently sound arguments may be urged on both sides. Our own opinion is that it is nobody's business, but his own, what a drug manufacturer may do in addition to making "ethical" preparations for physicians' use, so long as he does not offend against the law of the land. But if we must insist upon a certificate of church membership from our shoemakers and drug manufacturers, since the Council on Pharmacy of the American Medical Association has undertaken to determine the ethics of proprietary remedies in general, the question of the moral character of the manufacturers of these preparations would seem to be one equally within the scope of its investigation.

The Cure of Strabismus.

The unsuccess which in former times attended tenotomy for the cure of strabismus constituted one of the opprobria of ophthalmic surgery. Babies a few months old were operated upon, the muscle of one eye only, the one which the surgeon assumed to be the offender, being divided, and in a year or two the squint was found to be as bad as before; another operation was performed, and perhaps another, and the defect remained. The reason for this failure to relieve was, as Dr. D. B. St. John Roosa has pointed out in various papers published in the Medical Record and elsewhere, that the measures employed were directed to the effect only, the cause of the condition being unrecognized and untreated. He returns to the subject in a clinical lecture in the *Post-Graduate* for July, 1906, and insists that the operation, which he performed before the class, is to be regarded as only one of the steps in the curing of squint. Functional strabismus, he says, is invari-

ably caused by an error of refraction, and unless this error is corrected by glasses the efforts of the surgeon are doomed to failure. Indeed, the attempt should always be made to relieve the condition by glasses first, and resort should be had to operation only when these have been found to be insufficient. For this reason operation upon infants is inadvisable, since at an early age, before they begin to distinguish such small objects as letters and figures, they cannot usually wear glasses with profit. The operation which Dr. Roosa prefers is that of Panas of stretching and division of the muscle, both eyes being operated upon at one sitting. The operation has not the element of danger associated with advancement, and it is much less liable to be followed by overcorrection resulting in divergent squint. The operation of advancement is necessary in certain cases, but it should be reserved for those cases and not employed as a routine measure. In fitting glasses after the operation Dr. Roosa's practice is to correct only the astigmatism, and not the hypermetropia in the eyes of young subjects.

News of the Week.

Dr. L. Duncan Bulkley will, during the coming winter, deliver his eighth course of clinical lectures on diseases of the skin in the out-patient hall of the New York Skin and Cancer Hospital on Wednesday afternoons at 4:15 o'clock. The first lecture will be delivered on Wednesday, November 7. These lectures, which have always attracted large audiences, are free to medical men.

Reappointment of Surgeon-General O'Reilly.—The President has reappointed Dr. Robert M. O'Reilly, Surgeon-General, U. S. A., to serve a second term of four years.

Dr. L. G. Hanley, Surgeon of the Sisters of Charity Hospital, Buffalo, N. Y., was, on September 26, 1906, given the degree of LL.D. at Niagara University, Niagara Falls, N. Y.

Dr. H. S. Frenkel of Heiden, Switzerland, well known for his compensatory method of treating locomotor ataxia, will visit New York early in November for the purpose of demonstrating the principles involved in his system, and of pointing out in what type of cases it is likely to be successful. It is announced that he will read papers before several of the medical societies.

Child Labor Laws.—The amendment to the labor law concerning the employment of children, which was enacted by the last legislature, went into effect on the first of October. The amendment makes it unlawful to employ children under sixteen years of age in any factory in this State before 6 A. M. or after 11 P. M. The employment of children under the age of sixteen is prohibited in New York City after 7 in the evening in any mercantile establishment, business office, telegraph office, restaurant, hotel, apartment house, or in the distribution or transmission of merchandise or messages. No child under sixteen years of age, and no female, shall be permitted to work in any mine or quarry.

Inspection of Bakeries.—The law providing for the inspection of bakeries and confectioneries in this State went into effect on October 1. This law provides that "if, on inspection, the Commissioner of Labor find any bakery or confectionery to be so unclean, ill-drained, or ill-ventilated as to be unsanitary, he may, after not less than forty-eight hours' notice in writing, to be served by affixing the notice on the inside of the main entrance door of said bakery, order the person found in charge thereof immediately to cease operating it until it be properly cleaned, drained, or ventilated. If such bakery or confectionery be thereupon continued in operation or be thereafter operated before it be properly cleaned, drained, or ventilated, the Commissioner of Labor may, after first making and filing in the public records of his office a written order stating the reasons therefor, at once and without further notice fasten up and seal the oven or other cooking apparatus of said bakery or confectionery, and affix to all materials, receptacles, tools, and instruments found therein labels or conspicuous signs bearing the word 'unclean.' No one but the Commissioner of Labor shall remove any such seal, label, or sign, and he may refuse to remove it until such bakery or confectionery be properly cleaned, drained, or ventilated."

Arrests for Obstructing Ambulance.—Two negroes were arrested and fined last week for obstructing the progress of a Roosevelt Hospital ambulance by driving in front of it and refusing to heed the driver's signals.

Salaried Admitting Physicians at Bellevue Hospital.—The State Civil Service Commission has approved of the increase to the sum of one thousand dollars a year of the salaries of the four admitting physicians at Bellevue Hospital, whom it is now proposed to appoint. These physicians are to replace the members of the house staff who have heretofore attended to this work as a part of their duties. The eligibility for appointment is limited to persons who have served for at least two years in Bellevue Hospital. They are to serve for six hours a day, under such rules and regulations as may be prescribed by the Board of Trustees. Applications may be sent to Mr. James K. Paulding, Secretary of the Board of Trustees, at the hospital.

Conference of New York Sanitary Officers.—The Sixth Annual Conference of Sanitary Officers of the State of New York will be held at Syracuse, October 24 to 26, 1906. The program includes discussions on tuberculosis, meat inspection, water supplies, sewage disposal, disinfection, etc.

Meat Scandal in Vermont.—The Attorney-General of Vermont, in a report to the Governor of the State, charges gross negligence on the part of the Cattle Commission of Vermont. It is alleged that the Commission did not strictly follow the law, which requires that the carcasses of condemned animals shall be buried, and in several instances it has appeared that the Commission took the condemned animals to a slaughterhouse and had them slaughtered there, and disposed of the carcasses for fertilizing purposes. It is further stated that 200 condemned cows were sold by a member of the Commission to a drover, who took them into Massachusetts, where all but twenty of the animals were slaughtered and sold for food.

Registration of the Blind.—The Commission for the Registration of the Blind of this State, consisting of Dr. F. Parke Lewis of Buffalo, W. J. McClusky of Syracuse, and E. Morford of Brooklyn, met on September 29 and organized by electing Dr. Lewis president, and O. H. Burritt, superintendent of the State School for the Blind, at Batavia, secretary. The commission

announced that it would welcome suggestions regarding its efforts to improve the condition of the blind.

Public First Aid Cabinets.—A number of cabinets, containing dressing materials and other appliances likely to be of use in emergencies, have been placed in the streets of Leicester, England. The cabinets are kept locked, but can readily be opened by breaking a glass door, in the same way as fire alarm boxes.

New Sea View Hospital.—Bids will be opened on October 15 by the Charities Department for the group of buildings to be erected by the city at Castleton, S. I., which, when completed, will be known as the Sea View Hospital. The buildings will comprise eight four-story structures to be used as wards, and in the center of this group will be a chapel. Reinforced concrete will be used extensively in the construction. The buildings will cost about $1,000,000.

Straus Milk Stations Closed.—On September 24 the fourteenth season of the Nathan Straus milk depots ended, and the booths for the distribution of pasteurized milk in the public parks and on the recreation piers were closed. The quantity of pasteurized milk distributed exceeded that of any other year. The total number of bottles dispensed was 3,142,252, and the number of glasses of milk drunk on the piers and from the booths in the parks was 1,078,405. Contracts have been signed by Mr. Straus for the erection of a building at 348 and 350 East Thirty-second street, to be devoted exclusively to the pasteurization and modification of milk for the tenement babies.

Railway Casualties.—According to a statement issued by the Interstate Commerce Commission, in the course of twelve months an average of 26 persons were killed and 238 injured a day on railroads in the United States. The total number killed during the year was 9,703, while the injured numbered 86,008.

Honorary Degrees.—Among those receiving the honorary degree of LL.D. at the quatercentenary celebrations of the University of Aberdeen, held two weeks ago, were Dr. Howard A. Kelly of Baltimore, Dr. A. B. Macallum of Toronto, and Dr. J. William White of Philadelphia.

Honorary Degrees Conferred at the Harvard Dedication.—The following honorary degrees were conferred at the academic session held on September 26 in connection with the dedication of the new buildings of the Harvard Medical School: Charles Allerton Coolidge, architect, honorary doctor of arts; Dr. Simon Flexner, honorary doctor of science; Dr. John Collins Warren, doctor of laws; Dr. Henry Pickering Bowditch, doctor of laws; Dr. Abraham Jacobi, doctor of laws; Dr. José Eames, professor of pathology and chief of the clinical staff in the Medical School of Mexico, doctor of laws; Dr. Franz Keibel, professor of anatomy in the University of Freiburg, doctor of laws; Dr. Charles Scott Sherrington, professor at the University of London, doctor of laws; Dr. Francis John Shepherd, professor of anatomy in McGill University, doctor of laws; Sir Thomas Barlow, professor of clinical medicine in the University College Hospital, doctor of laws.

Beer Drinking in France.—The statisticians announce that the consumption of beer in France has increased more than 40 per cent. during the past five years, while the amount of absinthe used has shown a corresponding decline.

Cocaine in India.—The cocaine habit is said to have become so serious a menace to the prosperity of India that the government has formulated the most drastic regulations to check the increase of the vice. Even the mere possession of the drug by the laity is a punishable offense.

The Incomes of British Medical Men.—According to a recently published estimate, the incomes of English physicians have fallen off 25 per cent. during the past six years. Among the causes assigned for this decrease are the diminishing morbidity from epidemic influenza, which was very prevalent in 1900, the greater freedom from other infectious diseases, and the diminution in sickness during the winter months attributable to the mildness of recent winters.

An Epidemic of Ptomain Poisoning.—It is reported from Kattowitz, in Prussian Silesia, that thirty persons in a neighboring village have become mentally deranged as a consequence of the consumption of spoiled meat.

A League of Medical Socialists.—The newspapers have announced that a number of East Side physicians holding socialistic views are forming a league having for its object the nomination for public offices of socialist candidates.

The Tuberculosis Campaign in Berlin.—The report of the Berlin Tuberculosis Dispensary, established two years ago, has been recently issued and shows very encouraging results. Six physicians and eleven nurses attended the office ten times weekly; 15,661 persons were examined medically, and, in addition, 18,644 visits were made to dwellings, 365 beds were granted, 2,765 persons were helped with their rent and in other ways, for purposes of observation 804 persons were placed in hospitals, 622 children were sent to children's hospitals, 1,000 more to homes in the woods or other suitable places, and 8,200 dwellings were rendered sanitary. The bureau altogether spent something like 500,000 marks in its work of charity.

Registration at Columbia.—The elevation of the standards for admission to the College of Physicians and Surgeons has been followed by the expected improvement in the general character of the freshman class. For the first ten days of registration the number of students was 331, as against 405 last year. Owing to the same reason, a falling off has been reported in the attendance at the College of Pharmacy, which had dropped from 255 to 178. The total number of students registered at Columbia during the first ten days was 3,142, which is 74 less than the figure for the corresponding date last year.

American Society of Sanitary and Moral Prophylaxis.—At the regular meeting of this society, to be held at the Academy of Medicine on Thursday evening, October 11, at 8:30 P.M., the subject for discussion will be, "Venereal Infection in Children." Papers will be read and discussed by Drs. Charles H. May, J. Riddle Goffe, Virgil P. Gibney, Ludwig Weiss, W. Travis Gibb, L. Emmet Holt, William M. Polk, William P. Northrup, and others.

North Berkshire Medical Society.—The following were elected as officers at the annual meeting of this society held last week in North Adams, Mass.: *President*, Dr. A. K. Boom of Adams; *Vice-President*, Dr. G. F. Simpson; *Secretary and Treasurer*, Dr. L. A. Jones.

Mississippi Valley Homeopathic Medical Society.—At the meeting of this society held at Davenport, Ia., on September 20, the following officers were elected: *President,* Dr. W. F. Spencer of Geneseo; *Vice-President,* Dr. E. J. Ward of Rock Island; *Secretary and Treasurer,* Dr. W. F. Hunt of Davenport. The next meeting will be held in Rock Island.

Obituary Notes.—Dr. HARVEY LINK of Millard, Neb., died on September 11 at the age of eighty-two years. Dr. Link came to Nebraska in 1856, and had practised in Millard ever since. In 1867 he was a representative to the Territorial legislature, and in 1883 he was elected president of the newly organized Douglas County Medical Society.

Dr. A. H. ONG of Martin's Ferry, W. Va., died on September 22 as the result of heart failure. He had been in practice in and about Martin's Ferry for many years.

Dr. DANIEL M. SKINNER of Belleville, N. J., died on September 26 of paralysis, at the age of seventy-one years. He served in the Civil War as assistant surgeon on Admiral Farragut's flagship, and had practised in Belleville for about forty years.

Dr. LEONARD D. WHITE of Uxbridge, Mass., died on September 19 of heart disease at the age of forty-seven years. He was graduated from Harvard Medical School in the class of 1881, and began the practice of medicine in Uxbridge shortly afterwards. He had served for several years as assistant medical examiner.

Dr. W. B. FORSTER of Hope, Ark., died on September 15 at Texarkana at the age of eighty-four years. Dr. Forster was born in Alabama, and had practised in Hope for the past twenty years.

Dr. G. W. WILSON of Epperson Springs, Tenn., died of appendicitis on September 15 at Nashville at the age of forty-three years. He was born in Allen County, Kentucky, but had practised for many years in the vicinity of Epperson Springs.

Dr. Z. G. VAN ZANDT of Montrose, Ill., died on September 21 of paralysis at the age of sixty-four years. He was a pioneer physician, and had practised for many years in southern Illinois.

Dr. JOHN C. BEEKMAN of this city died at Atlantic City on September 28 at the age of forty-eight years. He had practised in Harlem over twenty years, and was on the staff of the Harlem Hospital. He was graduated from the New York University Medical School in 1882.

Dr. ANDREW FINE of Oakland, Cal., died on September 20 at the age of sixty-four years. He was graduated from the California Medical College, and after practising for some years in Watsonville settled in Oakland in 1879. For twenty-four years he was a member of the State Board of Pension Examiners, and had held numerous other official positions.

Dr. W. J. DAWSON of Los Angeles, Cal., died on September 19 at the age of fifty-eight years. Dr. Dawson had practised for twnety-three years in Los Angeles, where he was known as the "blind physician," as he had been sightless for many years.

Dr. GEORGE ATHERTON SPALDING died suddenly on October 2 at his home, in this city, of heart disease. He was born in 1849 and was graduated in 1872 from Andover College. He studied medicine at the College of Physicians and Surgeons, New York, obtaining his diploma in 1872. For a time he was an assistant to Dr. John Dalton, the Professor of Physiology in that institution. For two years he was resident physician in St. Luke's Hospital, and for the last ten years he had been an attending physician at the hospital.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE COMING SESSION—AN EMERGENCY FUND—COUNTY COUNCIL'S SANITARY PROJECTS—"EXPERT PATHOLOGIST" ON GOAT'S MILK—SIR J. CRICHTON-BROWNE ON BIRTH-RATES AND INFANT MORTALITY, ETC.—OBITUARY.

LONDON, September 14, 1906.

THE coming event which is just now casting its shadow before a good many of us is the approaching opening of the Winter Session. The first of October is looked forward to with special interest by the teachers, with even anxiety by some, while students, old and new, are just as naturally forecasting its probabilities. The usual celebrations are duly arranged, and programs are being freely circulated. The old introductory lecture still maintains a place, but other forms of inauguration continue to encroach upon it. The teachers one meets are mostly absorbed in the consideration of the probable number of new entries. Those who are to lecture are moderately reticent as to the subjects they intend to discuss. One has heard so many discourses of the sort that it is easy to sympathize with those who have found it difficult to make up their minds.

The University of London has made so much progress with the arrangements consequent on its reorganization that the medical schools are able to include full directions in their prospectuses to students who desire to attain its degree in medicine.

The quatercentenary of Aberdeen University is looked forward to as an event of unusual interest. The King will open the new college buildings on the 27th, and Lord Strathcona will give a grand banquet to 2,400 guests in a temporary building erected for the purpose.

The British Medical Association has now organized the contemplated "emergency fund" to be created by voluntary subscriptions, to assist members of the profession in various parts of the country in defending their legitimate interests when threatened by organized bodies. It is intended to apply the fund by way of grants to practitioners, or to divisions or branches of the Association, to meet expenditures in local disputes or otherwise. There may, perhaps, be room for good work in this direction, but it seems doubtful whether the appeal for voluntary contributions will be very successful, seeing that the entire management of the fund is proposed to be kept in the hands of the medico-political committee of the Association, the record of which is not such as to inspire confidence in its discretion or its financial ability.

The London County Council is determined to obtain further powers in reference to sanitary questions, and will apply to Parliament next session for authority to deal effectually with milk inspection and supply, the sanitation of fried-fish shops and marine stores, the water supply, storage and cooking conveniences of tenement houses, the employment of another class of inspectors, and other matters, including the right to compel laundries to supply lists of their customers and to enforce cleansing on verminous persons. The Council is ever endeavoring to extend its power, and already ominous notes of objection to tyranny may be heard in various directions.

An inquest was held on Monday by Mr. Troutbeck on a laborer of twenty-one, who had been taken ill after a dose of "hygeia salts." Three other people had suffered from sickness after a dose. But there was a question as to whether some beef had not set up ptomaine poisoning There was contradictory evidence as to eating this beef. The deceased, his mother said, would not have any, and she took none herself, though she, too, had been ill. Dr. Freberger was, of course, called, and he gave the opinion that the cause of death was ptomaine poisoning from the beef, which was probably decomposed. This expert pathologist of Coroner Troutbeck recently said at an inquest on an infant that "goat's milk was worse than skim milk," and the death of the child was due to malnutrition from having been fed on it! How much more nonsense is to be palmed on juries by this "expert"?

Yesterday the annual Congress of the Sanitary Inspectors' Association was opened at Blackpool, and Sir J. Crichton-Browne delivered his presidential address. As on some other occasions, the subjects discussed by the president, though interesting from a medical point of view, were scarcely such as one would expect to occupy inspectors. He began with a reference to the diminished birth-rate, partly due, he seemed to say, to a deliberate restraint of fertility among the élite of the nation. Bearing in mind that 25 per cent. of the married population produced 50 per cent. of the next generation, and that mental and moral traits and many morbid traits were not less hereditary than corporeal ap-

pearances, it was impossible for him to exaggerate the importance of the problems raised by the statistics adduced. If, he continued, we are recruiting the population from the mentally and physically feebler stocks at a greater rate than from the more capable and healthful, the gradual deterioration of the race is inevitable. Weeds will accumulate and good grain grow scarce. It is race failure or race suicide that confronts us; if race failure is being manifested more rapidly in the superior than in the inferior societies of the race—that is to say, if the reduction in the size of families has begun at the wrong end of the social scale, then national decadence and disaster may be anticipated. The racial struggle for existence is not over—Greece and Rome are not to be forgotten. The strategy of the struggle and the weapons employed are constantly changing, but universal disarmament would only mask the conflict and perhaps hasten the catastrophe in the case of some of the more tame and less resistant, and a declining birth-rate among the best breeds means diminished racial resistance. The waste of infantile life in England and Wales is still enormous, as proved by the latest statistics. In 1904 the mortality under one year was equal to 145 per 1,000 births; but the diseases to which this sacrifice was principally due were not beyond sanitary control, and this seems to be adequate reason for impressing the sanitary inspectors with such facts. History, said the president, proves that a dwindling birth-rate is a symptom of national decrepitude, and a high infantile mortality is a prodigal waste of the national resources. Sir James next considered the prevalent diseases of the day. Neurasthenia, he said, a word unknown to Webster, is daily on the medical man's lips. To counteract the depression alcohol is indulged in, and though in amounts short of what can be called intemperance, still the amount is ultimately injurious. Overworked men and women would probably take less if they had more wholesome recreation out of doors. Change of air and the cultivation of the love of nature, leading to exercise in fresh air, were recommended, but rapid locomotion might become a craze. The confirmed motorist became sluggish in intellect and excitable in temper, tending toward homicidal mania. The difficulties besetting sanitary inspectors were no longer what they were. When they exposed flagrant defects they were no longer, as in Ibsen's play, "the enemy of the people." They were the true and candid friends of the people, and as time goes on the people will more and more grasp and reward their friendliness.

Dr. John Henry Bell, consulting officer at Bradford Royal Infirmary and to the Eye Hospital, died suddenly on Sunday, from cardiac disease, aged seventy-four. He was M.D., St. And., 1861, M.R.C.S., 1857. He was much interested in anthrax, on which he contributed the article to Allbutt's "System of Medicine" and notes to the medical journals.

Dr. T. P. Cann has lost his life in an unusual way. He pricked his finger in an operation on the tonsils and streptococcal infection followed. He died on August 27, aged thirty-one. He was a Durham M.D.

Dr. Franklin H. Oliver, who died on the 22d ult., aged forty-seven, was chief district officer of the Royal Maternity Charity and surgeon to the City Lying-in Hospital. He also held other appointments and enjoyed an extensive practice.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE CHOLERA—USE OF HUMAN EXCREMENT AS A FERTILIZER—A CHOLERA SERUM—BERIBERI AMONG LEPERS—SEGREGATION OF LEPERS—MISTAKES IN DIAGNOSIS—STUDY OF AN ERUPTIVE DISEASE IN GUAM.

MANILA, P. I., August 18, 1906.

THE outbreak of cholera, of which mention has been made in the last two letters, has not gained any considerable headway, the number of cases remaining about the same. The disease is being gradually eradicated from the provinces of Laguna and Rizal, but provinces not heretofore infected since the outbreak, August, 1905, are being gradually invaded, the provinces of Pangasinan and Benguet being the latest added to the list. So far, there has been no general infection of the water supplies at any point, and to this may be attributed the fact that the disease has not become epidemic, the infection being confined, in all probability, to foodstuffs. Occasionally a well becomes infected, but the prompt measures which are taken for its disinfection usually result favorably.

The disease in Manila, for the week ended August 11, showed a gradual decrease in the number of cases, but for the week ended August 18 a large increase has taken place. From August 1 to date there have been 159 cases with 137 deaths in Manila; and since July 1 there has been a total of 552 cases with 486 deaths. In view of the fact that a number of vegetable gardens were found during the last ten days which were being fertilized with liquid human excrement, and that the latter in all probability contained cholera organisms, it is not surprising that there should have been a sharp increase in the number of cholera cases in the city.

The mortality from the disease is gradually becoming lower; instead of 90 per cent. of the cases dying, as was the case during the last week in June, the rate has gradually gone down until it has now reached 69 per cent. at the San Lazaro Cholera Hospital.

One of the serious menaces which constantly confront the Philippines is the use of human excrement as a fertilizing material, it no doubt being responsible for the propagation of cholera, dysentery, and other water-borne diseases, and in view of the inadequate fines and punishments which are provided by existing law, the Commission, at a session held to-day, enacted a law making the use of such material for that purpose a penal offense. The act provides that: "No farmer, market gardener, or other person or persons shall use any human excreta, excrement, dejecta, or the contents of any water or earth closet, privy, vault, cesspool, latrine, pail, or other receptacle for human feces or urine, as a fertilizer for any land on which is grown any article or product intended for human food or human consumption, or allow any human excrement, excreta, or dejecta to be sprinkled on or applied in any manner or for any purpose to any crop, product, or vegetation growing on said land. Any person violating the provisions of this act shall, upon conviction, be punished by a fine of not less than fifty pesos nor more than two hundred pesos, or by imprisonment not to exceed six months, or by both such fine and imprisonment in the discretion of the court, for each offense."

About a week ago Dr. Denier, a bacteriologist connected with the Pasteur Institute of Saigon, arrived in Manila for the purpose of testing the value of a curative serum for cholera which has recently been prepared by him. So far, he has had an opportunity to try it with only a few cases, and it is entirely too early to state whether the serum has any value. The matter will be reported fully later.

Among the lepers that were recently removed to the Culion Léper Colony an outbreak of beriberi occurred, the mortality being particularly high. Investigation showed that while there were lepers from many islands at Culion, the beriberi has occurred only among those who were removed from the Cebú Leper Hospital. Since they suffered from beriberi at Cebú, it is quite probable that they carried the infection with them when they were transferred to the Culion Colony.

It is variously estimated that there are from four to five thousand lepers in the Islands. It is further estimated that it would require an expenditure of about 25 cents per capita per day by the Government for subsistence, material for houses, clothing, transportation, administration, etc., to maintain them all; in round numbers, an outlay of $400,000 (United States currency) would be required. The Government at the present time can scarcely support a fixed charge of this size. Fortunately, however, the geography of the Islands is such that the present finances and the demands of practical medicine can both be met and reconciled to a reasonable degree.

The plan is to remove all lepers from those islands which are well isolated, and at the same time have only comparatively few victims. In this way a large amount of territory, or area, can be freed of lepers at once. The principal source of infection being removed, there should be few persons attacked in these sections in the future, and the few cases that do occur can be immediately removed. The lepers from the islands of Minduro, Nasbate, Romblon, Tablas, Siquijor, Negros, Palawan, and Cuyo have all been removed.

One noteworthy fact was observed while lepers were being collected from the islands mentioned, namely: Only about one-half of those who were previously reported as lepers, were, on examination, found to be afflicted with the disease. If this same proportion should be maintained in the remaining islands, the number of actual lepers will be much smaller than has been estimated, and the solution of the leprosy problem would not be nearly so serious a matter as first appearances indicated.

It will now be very interesting to note whether further cases of leprosy occur in the islands from which they have now been removed, and if they occur with the same frequency as heretofore.

Dr. E. R. Stitt of the United States Navy, who started the laboratory at Cañacao which is maintained in connection with the Naval Hospital at Cavite, has gone to Guam for the purpose of making an investigation into the etiology of the eruptive disease found among the natives of that island, and of which so much has been written in the lay press.

Progress of Medical Science.

Boston Medical and Surgical Journal, September 20, 1906.

The Winter Climate of Tucson, Pima County, Arizona.—I. W. Brewer gives a brief description of this locality. Most of the houses are built of adobe and are cool in summer and warm in winter. Temperature and humidity tables are appended. The place is essentially a winter station, as the summers are very hot and but few invalids are able to remain after the first of April. The lowest recorded temperature is 10° during a portion of the winter months. The relative humidity averages about 46 per cent. and varies but little from month to month. During the six months under consideration 66 per cent. of the days are liable to be clear and but 6 per cent. cloudy. Rain falls on an average of nineteen days. The prevailing direction of the wind is from the south, and the velocity averages between five and six miles per hour. There are occasional dust storms that blow with considerable force, but they are infrequent during the winter and fall. In winter Tucson has a higher temperature and lower humidity than many of the noted resorts in this country and abroad. It is a little cooler and dryer than Cairo, Egypt, although the rainfall is greater. Tucson is a desirable winter resort for persons in the early stages of tuberculosis, but not for advanced cases.

New York Medical Journal, September 22, 1905.

Danger of Weak Solutions of Carbolic Acid Used in Surgical Dressings.—L. B. Meyer makes a plea for the restriction of the sale of carbolic acid, setting forth that the present indiscriminate dispensing of carbolic solution is dangerous and declaring that physicians often order solutions of dangerous strength. Very weak ointments and solutions when applied to terminal parts often cause death of tissue and constitutional symptoms. He tabulates 22 cases of dermatitis, burns, superficial and deep gangrene following the use of preparations of ordinary strength. He declares that existing laws should be so reformulated as to forbid the sale of carbolic in any strength except on a physician's certificate. Solutions stronger than one-half of one per cent. may cause trouble if idiosyncrasy is present. Stronger applications can be made to carbuncles, in erysipelas, etc., than can safely be used on the fingers and toes.

Small, Frequent Meals in the Treatment of Certain Biliary Affections.—C. Herrman has observed in a case of biliary fistula the effect of the ingestion of food on the relative quantity of bile flowing into the duodenum through the common duct and that flowing into the cystic duct and out through the fistula. He noted the following facts: First, the amount of fistulous bile was greater during the night than during the day, in the proportion of about two to one. Second, when a meal was taken late at night there was very much less fistulous bile, the daily amount of bile secreted remaining approximately the same. These facts indicated that the ingestion of food had a decided effect on the amount of bile which passed into the duodenum. It was further noted that fruit and other substances which increased intestinal peristalsis also diminished the amount of fistulous bile. Alcohol seemed to act unfavorably by increasing the amount which escaped. The regular habit of tea drinking gave a disagreeable odor to the bile. Applying the principles thus suggested to the treatment of catarrhal jaundice, the author notes that the main object is to facilitate the bile flow through the common duct and to stimulate the gall-bladder to contraction. This, he believes, is best accomplished by the regular and frequent ingestion of food. His treatment consists in giving five or six small meals instead of the usual three daily, an extra one being introduced at 10 o'clock in the morning, at 4 o'clock in the afternoon, and at 11 o'clock at night. These small meals consist of milk, eggs, broth, crackers, or bread. If the patient awakes during the night, a glass of milk may be taken. The bowels are to be kept open by mild laxatives. A daily rectal injection of cold water is sometimes very efficacious. Light exercises, especially such as bring into play the diaphragm and the abdominal muscles, are helpful. In this way the writer has treated three cases of catarrhal jaundice in children with surprisingly good results. Within five days the urine and stools resumed their normal appearance, and in from ten days to two weeks the jaundice had disappeared.

Journal of the American Medical Association, September 29, 1906

Cirrhotic Changes from Injury to the Liver.—W. G. MacCallum notes the fact that the circulation of various poisons in the blood may cause focal or diffuse destruction of the liver cells. If limited in extent there may be no definite symptoms and the injured portion is replaced by scar tissue, the other portions being hypertrophied to compensate. If the cause persists, these changes may be continuous and finally result in one or other of the forms of cirrhosis of the liver. If the injury is very extensive, symptoms at once arise and a condition commonly classed as yellow atrophy of the liver may be brought about and quickly cause death, with great distortion of the liver. Such a case is here referred to. The object of the present paper, however, is to show that there is a scarred condition of the liver intermediate between the ordinary cirrhosis and the extreme distortion above mentioned, a condition, in other words, in which some single attack of infectious disease or some single intoxication has produced a single, nonprogressive, though widespread, injury from which complete and permanent recovery has occurred. Generally such livers show a smooth, even surface, interrupted only by a network of fine linear grooves indicating where the destruction of liver cells occurred. Elsewhere the lobules are normal, except for being a little larger than usual. These cases, when observed at autopsy, are commonly recognized as cases of incipient cirrhosis, but MacCallum holds that there is no evidence that the condition is part of a progressive process. It seems more probable that there is here a stationary condition differing from ordinary cirrhosis merely in not being progressive and representing only the scars of an old injury.

Cancer of the Lips and Tongue.—D. N. Eisendrath remarks that cancers of the lips, tongue, ear, etc., all belong to the squamous-celled type that extends almost exclusively by continuity of tissue or along the lymph spaces or vessels, and very rarely gives rise to metastases in distant organs. Hence the better chance of a permanent cure by early radical operation. For the less advanced cases as well as in the severer ones Eisendrath removes the lymphatic nodes and surrounding tissues in the submaxillary triangle and along the internal jugular vein as a routine procedure. At least a half inch of healthy tissue, or even more, on each side of the growth should be cut away, and in cancer of the tongue, if it extends beyond the median line, it is better to remove the entire organ, as the lymphatics on both sides of the neck are probably involved. Eisendrath insists on the importance of thorough removal of the deep cervical nodes along the internal jugular and on the necessity of avoiding infection of the field of operation, either from the primary growth or from the cancerous lymph nodes. The primary focus should be cauterized, if possible, and great care be taken to avoid opening the nodes. Eisendrath operates in cancer of the lips, face, and ear at one sitting, and he has done the same in cancer of the tongue in fairly robust patients without too much glandular involvement. If the latter is extensive it is better to follow Butlin's plan of operation in two stages.

Value of the X-Rays in Ocular Therapeutics.—G. O. Ring concludes that *x*-ray therapy is very promising in malignant disease of the eye. In superficial epithelioma and rodent ulcer of the eyelids it can usually be relied on, he believes, to effect a cure. He states that it is believed that good results obtained in certain cases of malignant disease of the cornea, conjunctiva, and caruncle will become general under more improved technique, and that the *x*-ray has proved of much value in the more extensive orbital carcinomata, though the results are less favorable the deeper the growth. Enough cures have been reported of lid and orbit sarcomata to warrant an exhaustive trial of the *x*-ray in this disease, more radical operative measures with subsequent *x*-ray treatment being indicated in case of primary failure. Ordinarily the rays have an anodyne effect in malignant disease of the eyelids and orbit, but in some cases exacerbations of pain have been reported from their use. *X*-ray treatment has been of benefit in trachoma, and there is testimony as to its value in vernal and chronic conjunctivitis, scleritis, episcleritis, traumatic uveitis, conjunctival tuberculosis, corneal ulceration, gloma, and gummata. Ring cautions against submitting cases to any but experts in *x*-ray treatment.

Temperature Taking in the Groin in Children.—A. H. Parks points out the advantages of taking the tempera-

ture of infants in the closed groin. The oral method is hardly practicable, and there are some dangers in the rectal method in the exposure and possibility of breakage of the instrument, as well as some other inconveniences and objections. He has made comparisons of temperatures taken by the different methods, rectal and inguinal, in 175 children, ranging between four months and five years in age, under identical conditions, and found that the average difference between the temperature of the closed inguinal fold and the rectum is 0.34° F. (0.18° C.), while the normal temperature in the former in the child is 98.5° F. The great facility of the inguinal method was very noticeable, as the natural close apposition of the thigh to the body retained the instrument in place and the retention of the thermometer in the groin was accomplished without any crying or uneasiness on the part of the child. In extremely emaciated cases it may be better to use the internal method, but when it is possible to use the external method the groin possesses decided advantages over the axilla.

The Lancet, September 15, 1906.

The Prophylactic Use of Antidiphtheritic Serum.—W. W. Shackelton records his personal experience in an epidemic occurring in a large school for boys. The usual dose employed was 2,000 units. Seven cases had occurred in a house holding 45 boys. No case occurred in this house after the first inoculation for five weeks except one, and that on the day after inoculation. One other case occurred in this house, but that was in the case of a boy (the only one who had not been injected). In another house in which three cases had occurred, inoculation stopped all further spread of the disease. All the cases (14) recovered. The article is a convincing exposition of the benefits of immunizing treatment.

Some Observations on Convulsions in Children and Their Relation to Epilepsy.—According to R. O. Moon, convulsions in early life may shade off indefinitely into epilepsy so that it is impossible to say where the one ends and the other begins. In an analysis of 100 cases fully one-half are shown to be without obvious cause. To such cases the name of idiopathic epilepsy is given. In the other half the first convulsion arose in connection with rickets, teething, trauma, specific fevers, indigestion, or indefinite ill health. A history of alcoholism was found in one or both parents in 10 per cent. of all cases, equally divided between the two varieties. The prognosis does not appear to be better in the cases originating in connection with some peripheral affection than with the others. There is an important element in all these cases other than the mere number of attacks. It is the mental and moral impairment of the patient. The starting point of some form of insanity may easily lie in uncared-for cases of convulsive tendencies. Frequently there are manifestations of nervous instability which indicate a radical unsoundness of the central nervous system as a more important factor in the production of infantile convulsions than is an extrinsic cause. Of drugs used in treatment special mention is made of urethane and chloral. It is possible that a convulsion may, regardless of its cause, have some effect upon the brain in the direction of setting up a bad habit, and render further attacks probable.

The Rash in Cerebrospinal Meningitis.—W. Wright says in commenting on some features of recent cases in Glasgow that in two instances a decided purpuric rash, purple in color and hemorrhagic in character as to the spots, with well-marked edges, was seen on the dorsum of the feet, but in no other area. In another case punctate hemorrhages appeared all over the trunk and limbs in scattered patches of six or seven spots. In still another case the rash appeared in crops at intervals of about seven days. On examination on the twenty-first day of the illness, purple and maroon spots, circular, with regular edges all the same size—*i.e.* that of a lentil—were seen on the dorsum of the feet, on the arms, the legs, the trunk (back and front), four below the chin, and one behind each ear. They were scattered over the body with areas of three to four inches of normal skin between each. These spots were definitely hemorrhagic in character and so well defined as to be seen from a considerable distance, the picture presenting quite the aspect of "spotted fever." Two days later these had almost disappeared, but others took their place.

The Pulse in Aortic Disease; the Relation of Pulse Curves to Blood Pressure.—T. Lewis analyzes 20 cases, giving a tabulated list of symptomological findings and reproducing a number of sphygmographic tracings. These must be examined in the original paper by those interested. Some of the most striking facts brought out in the study are the following: In 14 cases of an average age of thirty-six and one-half years there was an average systolic blood pressure of 132 mm. Hg. These cases were not associated with granular kidney; in 4 cases with chronic interstitial nephritis, average age 46 years, pressure was 136 mm. There was no definite relation between the pressure and the amount of arteriosclerosis and none between the pressure and amount of cardiac compensation. A pulsus bisferiens was palpable in 13 out of the 20. A definite relation existed between the height of the first secondary wave and the amount of arteriosclerosis; the greater the sclerosis the higher the wave, but there was no relation between the wave-height and pressure or compensation. A dicrotic notch was observable in all. It showed no definite relationship to the amount of regurgitation, arteriosclerosis, or compensation. The author comments on the difficulty of estimating blood pressure by palpation, and even by some of the sphygmographs, and states that many errors are current in the text-books regarding the interpretation of the curves produced on these instruments.

Suture of Perforating Heart Wound; Death on the Eleventh Day.—A patient of F. T. Travers fell and was impaled on the large spike of an iron fence. He managed to free himself, but fell and lay for some time without aid. Seen three hours after, he presented a transverse wound about two inches long over the lower end of the sternum, through which a vertical fissure in the bone could be seen. In addition there was the usual picture of collapse from hemorrhage. The wound was enlarged, exposing the lower half of the sternum on the left side; the vertical fissure extended upward to the second right costal cartilage, and there were fractures through the left half between the fourth and fifth and fifth and sixth costal cartilages; the portion between the second and fifth costal cartilages was missing. The third, fourth, and fifth cartilages were divided at their attachment to the ribs, and the lower fragment of the sternum was turned downward. In freeing the third cartilage the pleura was wounded. The rent, about half an inch in length, was at once clipped with artery forceps and closed by two sutures. A rent in the pericardium about two and a half inches in length was now exposed, through which blood was slowly escaping. The pericardium was full of blood-clot, which was gently sponged away; a piece of bone one inch by half an inch was removed, and a small spicule of bone was felt imbedded in the heart and extracted. On further examination a wound was felt in the right ventricle, and on following this along another piece of bone was felt. This was seized with forceps and removed, and its removal was followed immediately by a terrific gush of dark blood. The wound in the heart was at once plugged by the operator thrusting his finfiers in. The insertion of three fingers practically stopped the hemorrhage. He also found that his fingers were within the cavity of the heart, the index being separated from the middle and ring fingers by a band of tissue, which at the time he took to be the anterior flap of the tricuspid valve. Three sutures were inserted, withdrawing a finger as each was passed, and by them the wound was roughly drawn together, and then ten sutures were passed through the muscular coats, using the first three, which were left long, to steady the heart and bring the wound into view. A second row of ten Lembert sutures were passed through the pericardial serous coat, closing in the first row. The patient did well for a few days, but was very restless, and finally died on the eleventh day. Autopsy showed the wound in the heart well closed except at a small point where the muscle was necrotic.

Berliner klinische Wochenschrift, September 10, 1906.

The Surgical Treatment of Gastric Ulcer.—Rydygier took the occasion of the presentation of a patient on whom he had operated twenty-five years before for gastric ulcer by resection, to reiterate his conviction that this plan is preferable to gastroenterostomy in the treatment of ulcer of the stomach. While he admits that the resection operation is still technically more difficult than gastroenterostomy, he considers that this objection is more than counterbalanced by the advantage of removing completely the diseased area. A not unimportant drawback to the less radical procedure is the fact that the ulcer so frequently furnishes the starting point for a subsequent carcinoma, a danger that is obviated by resection. He concludes that the resection operation in those cases in which it can be carried out secures a more rapid and certain cure than any other

surgical procedure, since in addition to the improvement in the circulatory conditions it also removes the diseased tissues.

The Spirochete Question.—Friedenthal calls attention to the discrepancies existing in the descriptions of the *Spirochæta pallida* furnished by different observers, and also criticises the statements that the organisms can be demonstrated in large numbers in the internal organs of syphilitics after treatment of the tissues by a modification of Cajal's silver impregnation method as used in the study of the histology of the nervous system. The author believes that these structures, which have been interpreted by most observers as being spirochetes, are in reality artefacts such as nerve fibers or connective tissue fibers, and he illustrates a number of such pictures which he obtained in carcinomatous tissues. In another communication Schulze takes the same stand and illustrates structures resembling the conventional spirochetes which he obtained on inoculating the rabbit cornea with street dirt.

Munchener medizinische Wochenschrift, September 11, 1906.

Reflex Inhibition of the Renal Secretion During Cystoscopy.—Grund points out a danger of misinterpretation that attends the results obtained in renal diagnosis by the aid of cystoscopy with or without catheterization of the ureters. Just as stone occluding the ureter on one side can give rise to total anuria, the reflexes attending cystoscopic manipulations may also cause complete inhibition of renal activity. The author describes a case in which during a period of twenty-five minutes no urine at all entered the bladder of a patient suffering from tuberculosis of the bladder and kidneys while he was being examined by means of the cystoscope. The author says it is uncertain whether it is the irritation of the instrument or of the artificial distention of the bladder that gives rise to the reflex, though probably it is the stimulation at the neck of the bladder caused by both that originates the condition.

Epileptic Automobilists.—Thalwitzer proves that the danger of automobile accidents being caused through serious nervous diseases on the part of chauffeurs really exists, by describing two instances that have come under his own observation. In each case the driver of the machine came to grief on a straight road by suddenly turning his machine into the ditch, and was picked up unconscious and unable to explain how the accident had occurred. Investigation revealed the fact that each of the patients was an epileptic, and the occurrences point out the unwisdom of allowing such individuals to control motor vehicles.

The Treatment of Chronic Bronchitis by Means of the X-Ray.—Schilling gives the case histories of a number of patients suffering from chronic bronchitis and bronchial asthma whose condition was very considerably ameliorated by a single application of the *x*-rays. The radiation was carried out from various directions, during a period of ten to fifteen minutes, avoiding those parts protected by the thickest muscular layers. The most noticeable effect was the prompt reduction in the amount of bronchial secretion, which was very striking, and great relief also resulted from the cessation of the asthmatic attacks. While the author considers that the number of patients treated is still too small to permit of drawing very definite conclusions as to the value of the method, he is convinced that it has possibilities, and urges others to make control observations.

Deutsche medizinische Wochenschrift, September 13, 1906.

An Inhalation Mask for Producing Hyperemia of the Lungs.—Kuhn describes an inhalation mask which he has devised for use in cases of pulmonary tuberculosis in order to produce congestion of the lungs, basing his belief in the suitability of this form of treatment on the principles that underlie Bier's plan of treatment. The congestion is effected by restricting inhalation while expiration is unimpeded, and a model is described by means of which it is possible to demonstrate the greatly increased inflow of blood into the pulmonary vessels that must result under these conditions. The method does not involve increased activity of the lung itself, and therefore does not oppose the prevalent views in regard to the superiority of the rest treatment of the lung over that by pulmonary gymnastics. About forty patients have so far been treated by this method with very satisfactory results. The improvement in the general condition was both subjective and objective, fewer bacilli occurred in the sputum, and the cough was reduced in severity. An interesting observation was the fact that polycythemia and a rise in the hemoglobin percentage attended the use of the mask. There seemed to be no tendency to the production of pulmonary hemorrhages, and in ordinary cases there is no danger of overtaxing the heart. In advanced stages of the disease, in which the heart is already much weakened, the use of the mask would not be advisable, however.

The Behavior of the Spleen in Carcinoma.—Hollister investigated the condition of the spleen in one hundred and fourteen cases of carcinoma, of which sixty-one were of the stomach and nineteen of the esophagus. The others were of the bronchi, rectum, pancreas, biliary passages, a sigmoid flexure, uterus, breast, bladder, etc. The spleen was small, or at least not enlarged, in ninety-two cases and was enlarged in twenty-two cases. In many instances it was distinctly atrophic. The cases in which the spleen was enlarged presented some complication sufficient to account for the increase in size of the organ, such as chronic congestion in the portal system, severe general sepsis, or metastases in the spleen itself. The author concludes that the fact that the spleen undergoes no enlargement in the majority of cases of carcinoma is evidence against the infectious nature of the disease, and he considers that clinically it may be taken for granted that enlargement of the spleen is rare in carcinoma and when it exists depends on the presence of some complication. In doubtful cases of hepatic disease splenic tumor is against carcinoma, while its absence speaks in favor of malignant disease.

French and Italian Journals.

Yellow Fever.—Marchoux and Simond made most interesting observations during the time of the French expedition which was sent to Rio de Janeiro to study this disease. The frequency of abortion in pregnant women attacked by yellow fever tends to show that the mother can transmit the disease to the fetus. This fever can attack the infant in the first months of life. Relapses are rare, but when they occur they are in general very grave. The *Stegomyia fasciata* is the transmitting agent of yellow fever. This insect can inoculate the disease by its bite after it has itself become infected. It contracts the disease by biting patients on the first, second, or third day of the disease. Sometimes, the authors maintain, the disease can be transmitted from the insect mother to its young by heredity. This hereditary transmission does not pass beyond the first generation. During the period when the mosquito possesses the infecting power it does not try to bite a human being between the hours of 7 in the morning and 5 in the evening. Prophylactic measures should be practised in relation both to the mosquito and to the patient. The insects should be exterminated and human beings should be protected from bites, especially during the night.—*La Tribune Médicale,* September 1, 1906.

The Healing of Aseptic Wounds of the Brain.—Da Fano has made careful experiments on animals to determine the part taken in the repair of brain tissue by the connective tissue and the neuroglia. The scars examined were produced by lesions made experimentally with removal of a small amount of brain tissue, in the brains of rabbits and dogs. The connective tissue and neuroglia take different parts in the repair of tissue, according to the length of time since the wound. At first the connective tissue takes the whole office of repair, the nerve elements undergoing degeneration; later a marginal layer forms of nerve tissue, with fibers predominating. Still later, in consequence of the retraction of the cicatrix, the relations between the connective tissue and the marginal nerve layer become more complex and an interlacing of connective tissue fibers and nerve fibers takes place of a complicated nature. The neuroglia in the cicatrix is formed of cells with protoplasmic prolongations in which a fibrillar portion is differentiated from the cytoplasm. It has not yet been determined whether it contains nerve fibers independent of the cells.—*La Riforma Medica,* July 14, 1906.

Harmlessness of Dust Made from the Desiccation of Tuberculous Sputum.—Cadéac declares that the dust ground from dried tuberculous sputum is harmless both to the digestive and to the respiratory passages. Not a single experiment has shown the transmission of tuberculosis by the inhalation of dust gathered from localities inhabited by tuberculous patients. The writer has demonstrated that it is almost impossible to cause the development of this disease by the inhalation of this infected dust. The desiccation and the rapid conversion of sputum into flying dust are the natural means of preservation against tuberculous infection.—*Le Bulletin Médical,* September 5, 1906.

Book Reviews.

Les Empoisonneuses. Étude Psychologique et Médico-Légale. Par le Dr. René Charpentier, Ancien Externe des Hôpitaux de Paris. Interne des Asiles d'Aliénés de la Seine. Paris: Steinheil, 1906.

Charpentier's thesis deals with the famous women poisoners of all ages from the viewpoint of the alienist and the criminologist. A historical review of the principal women poisoners of antiquity and the Middle Ages, beginning with the mythological Hekate, queen of Colchos, down to Lucrecia Borgia and the Marquise de Brinvilliers, forms the first part of the book. The second portion is devoted to clinical and biographical studies of modern poisoners, who are classified as (1) hysterical degenerates, (2) poisoners with melancholic tendencies, (3) poisoners who simulate insanity, and (4) falsely accused poisoners. The author concludes that poisoning is peculiarly a woman's crime; that it is the favorite weapon of hysterical women; that these women are always physically and mentally degenerate, and that they should be confined in asylums instead of being condemned to death. Dr. Charpentier has contributed an excellent monograph on an extremely interesting phase of psychiatry and criminalogy, and his book will find a place in the library of both lawyers and physicians who are interested in the psychology of poisoners.

The Autotoxicoses; Their Theory, Pathology, and Treatment. By Heinrich Stern, Ph.M., M.D., New York, Professor of Special Medical Pathology and Therapy in the College of Physicians and Surgeons, Boston; Director of the Institute for Medical Diagnosis and Research in the City of New York; Physician-in-Chief, Philanthropin Hospital in the City of New York; Pediatrist and Pathologist, Misericordia Hospital and the Hartsdale Infirmary; Consulting Physician, Metropolitan and Red Cross Hospitals; Chairman Section on Pharmacology, American Medical Association; Permanent Member Medical Society State of New York; Fellow of the New York Academy of Medicine, etc., etc. Chicago: G. P. Engelhard and Company, 1906.

The present volume is the latest addition to the literature of autointoxication. The subject is, naturally, of the greatest importance, and the author endeavors to show that certain phenomena are due to the absorption of poisonous metabolic products. He also contends that autointoxication is not as common as is generally supposed, and that the condition when present is hard to demonstrate. Dr. Stern's book is divided into two parts; the first contains a brief historical epitome, which is followed by chapters on autointoxication in general, intestinal autointoxication, catabolic autointoxication, critical considerations of the autointoxications, the physicoautotoxic state, and the pathogenesis of uremia. There is also a chapter containing recapitulation and conclusions. Part Two deals with the treatment of intestinal and catabolic autointoxications. In the appendix is a glossary, which is very necessary in view of the terminology adopted by the author. To use the terms carbamid and tartronyl cyanamid for the more familiar words urea and uric acid tends to confusion and serves no good purpose. There is so much of value in the book, that it is a pity the author has made it difficult for the reader to profit by it.

Aids to Surgery. By Joseph Cunning, M.B., B.S., F.R.C.S. Eng., Senior Resident Medical Officer Royal Free Hospital. New York: William Wood and Company, 1906.

This is a volume of the new Students' Aid Series, and can be recommended as a first-class *résumé* of the main principles and facts of surgery. The arrangement follows closely that of Rose and Carless' Manual of Surgery, and a better guide the author could not have selected. To students in college this book will save the drudgery of taking notes; and to all who have to face a written examination in surgery this little book will prove of incalculable service. The work contains thirty-nine chapters, and within the compass of 384 small pages the author has managed to compress all the essentials of surgery. It is concise, accurate, and unusually complete.

Clinical Bacteriology and Hæmatology for Practitioners. By W. D'Este Emery, M.D., D.Sc., Lond., Clinical Pathologist to King's College Hospital, etc. Being the Second Edition of "A Handbook of Bacteriological Diagnosis for Practitioners." Philadelphia: P. Blakiston's Son & Co., 1906.

The highest compliment that can be paid to a medical book nowadays is to say that it fills a distinct want. The present volume will supply the increasing demand for a practical manual of bacteriological and hematological examinations which excludes everything but what a practitioner needs. Emery's book is written evidently by a teacher who has had to supply information to post-graduate practitioners in the most practical, direct, and boiled-down form possible. The text covers the elementary technics of bacteriology, the bacteriological diagnosis of disease, the examination of pus, saliva, throat secretions, conjunctiva, sputum, gastric contents, pleural and other exudates, and the blood. Concise directions for fixing, hardening, embedding and cutting sections are also given. Hematology is treated in forty pages of pithy matter and a chapter on cytodiagnosis is appended. The two plates on the blood (VII and VIII) are not only true to life, but sufficiently diagrammatic to constitute a useful summary of the different types of cells, the method used being to portray a single typical cell of each kind. The other colored plates are also of a high character. The book is thoroughly up to date, containing, for example, descriptions of the macroscopic methods for typhoid fever diagnosis and the detection of *Spirochæta pallida* of Schaudinn; Wright's opsonic blood reaction, etc. As a rule a single method of procedure is given for each examination, the selection of stains, etc., being usually very practical, this mode of writing doing away with the bewildering array of methods usually found in text-books.

Collected Studies on Immunity. By Prof. Paul Ehrlich, Privy Councilor and Director of the Royal Institute for Experimental Therapy, Frankfort, Germany, and by His Collaborators, with Several New Contributions, Including a Chapter Written Expressly for This Edition by Professor Ehrlich, Translated by Dr. Charles Bolduan, Professor of Bacteriology and Hygiene in Fordham University, New York; Assistant Bacteriologist, Research Laboratory, Department of Health, City of New York. New York: John Wiley and Sons; London: Chapman and Hall, Limited, 1906.

This invaluable collection of the immunity studies of Ehrlich and his collaborators presents to the English reader for the first time a consecutive history, as it were, of the wonderful developments along the lines of Ehrlich's ingenious theory of immunity. The nomenclature employed by the German, French, and English investigators who have worked along the lines indicated by Ehrlich and which by reason of its confusing synonyms has made the subject a difficult one for the ordinary medical reader, is no longer a stumbling block as presented in this series of studies collected and translated by Bolduan. As already stated, the translator has arranged this collection of studies consecutively. The volume consists of forty chapters, each one being a more or less independent contribution to the subject and representing the work not only of Ehrlich and Morgenroth, but that of von Dungern, M. Neisser, Lipstein, Rehns, Sachs, Proscher, Marshall, Korschun, Kyes, Shiga, and Marx, and a forty-first chapter presenting a general review of the whole subject written by Ehrlich himself expressly for this translation. This volume, therefore, brings the subject up to the present year and is indispensable to the student and worker in this field, especially when he does not read German. The convenience, moreover, of collating the whole subject so succinctly between the covers of one volume is a great advantage. The charts and tables are extremely interesting, and the diagrams illustrating the ingenious side-chain theory are of infinite assistance to the comprehension of the text. It may be safely said that this volume constitutes one of the most important and valuable contributions of the year to English medical literature.

The Urethrotomies and Kidney Capsulotomy in Diseases and Injuries of the Urinary Organs. By Reginald Harrison, F.R.C.S., etc. New York: William Wood and Company, 1906.

This book is based on a series of clinical lectures given by the author and represents in a way his most recent views on the subjects in question. The writer has been connected intimately with the development of these branches, and his text is therefore authoritative. The entire subject of urethrotomy is discussed in a brief yet thoroughly practical manner, but the general interest will probably be centered on the chapter on capsulotomy, which operation the author was among the first to advocate for the relief of inflammatory affections of the kidney. Harrison claims that it is sufficient to incise the renal capsule in order to relieve the tension in the organ, and does not think it necessary to strip back or remove part of the capsule after the manner of Edebohls. Harrison believes that the operation of capsulotomy as advocated by him has been shown by experience to warrant its adoption in suitable cases, and thinks that more attention should be given to the subject of tension in the earlier stages of kidney inflammation and its relation to circulatory complications. The book contains but 96 pages, yet every one is interesting and instructive.

Society Reports.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Twenty-eighth Annual Meeting, Held at Niagara Falls, May 31, June 1 and 2, 1906

THE PRESIDENT, DR. JOSEPH W GLEITSMANN, IN THE CHAIR.

President's Address.—Dr. GLEITSMANN delivered this address (see page 57)

How Far are Abnormalities of the Nasal Septum Responsible for Malfunction of the Nose?—Dr. HENRY L. SWAIN of New Haven, Conn., described the usual provisions of nature for keeping the nasal passages free from irritating and harmful materials. Macroscopical particles are taken care of with comparative ease, but we do not know as much about microscopical particles. In the latter instance the protecting duty falls on the cells, whose chemical or phagocytic functions are called into play. The protective system may be rendered useless by deformities of the nasal skeleton, which render ready cleansing by sneezing and blowing and the free downward flow of fluids practically impossible. Under these circumstances bacterial growth in the nose may occur with great rapidity. The nasal integrity depends, after all, on the condition of the epithelial cells on the outer wall. Concerning the protection against subtle chemical, electrical, and other irritations, we are largely ignorant of the manner in which nature works. Nor, moreover, do we know just how and why the vital cells know and appreciate what is harmful and what harmless. A solution of this riddle gives the key to all physiological phenomena. As a result of repeated attacks of acute rhinitis a chronic change is set up, and the protective mechanism becomes permanently impaired. The author does not think it logical to lay all the blame of this impairment, as is commonly done, on the nasal septum. Its influence in states of deviation from the normal perpendicular has been overestimated on nasal function. Septal deviations are often the outcome of inherited facial asymmetry, or arise from exaggerations by the accidents of disease, neglect of teeth, trauma in youth, etc., yet many patients having the misshapen septa live ordinarily long lives without any more nasal disturbance than is experienced by patients having comparatively straight septa. The present views as to the relation of septal abnormalities to nasal malfunction are the natural result of the teaching of recent years. If the septum is so bent as actually to interfere with breathing, there is no doubt as to the course to be followed, but whatever we do, we should accomplish the desired result by as mild measures as possible, with little destruction of the normal epithelium and with as good preservation of the normal anatomical relations as possible. The author stated that he could not make it seem right to remove turbinal tissue when an exostosis was at fault. It might be easier, but it was not logical. Neither was it right to remove turbinal tissue when the problem was to make crooked septa straight. Yet after much experience, we are sometimes met with the fact that, although we may have done at the time what seemed best in our judgment, the catarrhal condition for which relief has been sought has not been greatly benefited. We should not fall into the habit of laying the whole fault for the catarrh on a slight septal bend. The catarrhal condition is referable in part at least to the conditions of modern life, dry heat, narrow apartments, late hours, busy work, etc. Often, then, the main thing to bring about is an alteration in the manner of living and a change in environment. If we confine ourselves to surgical intervention, our ultimate results will be disappointing. We may straighten the septum, plane it off, smooth it down, but yet hypertrophy will return, annual catarrhs continue, and sinus disease occur in spite of all.

Some Observations on Nontraumatic Perforations of the Septum.—Dr. CHARLES W. RICHARDSON referred to cases without a known etiological factor and with an indefinite pathological history. In none of this group could the exciting cause be the irritation from acids or chemicals. In only a few was there any history of obstruction. We know that when the anterior inferior portion of the septum is injured, nature's efforts at repair are very unsatisfactory. In addition to the exposed situation of this area there seemed to be some additional constitutional condition lessening the normal nutritive activity of the affected structures, so that ordinary irritation worked an unexpectedly great destruction. Such a constitutional influence is seen in typhoid fever, for instance, and the author believed that in the tuberculously inclined especially there was something imparted to the tissues, especially those of the fibrous and epithelial type, which rendered them, when the nutritive changes were impaired, liable to retrogression and destruction. In an analysis of fifteen personal cases, there was found in eleven either direct physical evidence of tuberculosis in the patient or there was a definite family history of this diathesis. Findings made on the cadaver by Weichselbaum and Hajek confirmed the view taken. Many cases of septal irritation were not followed by perforation. Many endure for years, some heal, and some may perforate, but tuberculosis and the tuberculous diathesis impress on various tissues of the body such alteration in their nutritive processes that when the proper stimulus is applied they lead to degenerative changes which may or may not show the characteristic histological elements of tuberculosis.

Nasal Skiagraphy.—Dr. CORNELIUS G. COAKLEY of New York City gave an exhibition of skiagraphs, showing various diseased conditions and anomalies of the nasal accessory sinuses, and described the technical methods employed in their production. He was of the opinion that while in certain instances the results of this method of diagnosis might be very uncertain, yet in other instances it afforded us very definite information as to the size, shape, and relations of the sinuses, and gave us also very definite knowledge as to the condition of the mucous lining.

The Ultimate Results of Radical Operations Upon the Accessory Nasal Sinuses.—Dr. D. BRYSON DELAVAN of New York commented on the fact that relief had not always been finally afforded by radical operation, that the progress had often been painfully slow, and the ultimate outcome unsatisfactory and disappointing. Unsuccessful cases are not often reported, and statistics calculated to show the relative values of different methods of operation are not attainable. There have been notable exceptions to this rule in the case of the work of some members of the Association, who have frankly stated their actual results. In some instances the nasal cavity has assumed a condition to all intents normal as to sensation and function, yet the patient has been unaware of any unusual change in it, and the progress of time has been unmarked by semblance of accident or relapse. In other cases the results have not been so fortunate. Sometimes the cure itself has been incomplete, or, again, new foci of disease have developed, at times long after every probability of their appearance has passed away. The ultimate condition is a subject which apparently has been studiously avoided. It cannot be denied that the results in many cases have been brilliant and permanent, but sometimes the formation of crusts persists for years after intranasal operation. The undue widening of the nasal cavities may cause the many unpleasant symptoms due to the too free admission of air. A better knowledge of all these results is highly desirable, because (1) if the seriousness of the situation has been overestimated, it is well that we should be reassured; (2) if it has not been overestimated, the best means for its prevention should be studied and applied. Most important of all, through a clear understanding of the dangers, difficulties, and discomforts of these

more radical cases, the profession will be led to appreciate and thus reduce to the lowest possible number the cases of acute sinus disease and early recognition and efficient treatment of it when it has once appeared, cure the conditon and thus reduce to the lowest possible number the cases which have become fully and hopelessly established as chronic. The establishment of necrosis calls, of course, for the removal of offending tissue. Great responsibility rests upon the practitioner who first sees the case, particularly during grippe seasons, when so much can be done to make the patient comfortable, lessen the severity of the inflammation, and prevent the establishment of the later features of neglected sinus disease. So also the possible influence of a specific factor in a given case should lead us to administer the iodide, neglect of which precaution may lead to widespread disaster. In any event, reasonable conservatism in operation and prolonged observation of every case are factors which are indispensable.

A New Operation for Extreme Cases of Septal Deflection, With Presentation of a Successful Result in an Adult Patient.—Dr. J. Price-Brown of Toronto made a plea for the retention of the substance of the septum and was not inclined to grant all that the advocates of the submucous resection claimed for the latter procedure. Many cases of perforation had been reported, even in the hands of skilled operators. We do not know what will be in future years the condition of these resected septa. We do not know how the latter will stand the aridity of fevers, typhoids, and pneumonias. Therefore the ideal result would be to so act on the septum as to relieve it of all tension without removing it, and to replace it with perfect healing in the central plane. The author has been in the habit of making two longitudinal cuts with a thick saw from before backward through the septum, making them from the convex side, about half an inch apart, passing through both mucosa, the lower cut being just above the superior maxillary ridge. Rubber splints were then employed to hold the septum in the correct position. Results were fairly good, but the cuts did not destroy the central resiliency of the large curvature from before backward. Therefore the author had joined the two incisions by a third one at right angles to them, and the operation might be called the "H" operation. The points to which he wished to draw attention were these: First, that as the curvature of the cartilage from above downward gave it a greater width than it could occupy if it were upright in its normal position, the two longitudinal cuts should be so managed as to remove two long slips of the septal cartilage and at the same time be made at an oblique angle, so that the cut edges could slide over each other; second, that the cross of the "H" should be very decidedly oblique, extending at right angles beyond both of the other and parallel incisions, and cutting through both mucosa and cartilage, so that in replacing the segments the posterior central segment would slide forward over its fellow and the anterior one backward. It matters little how these cuts are made if the principle on which they are founded is carried out. (The clinical history of the case was then read and the patient was examined by the gentlemen interested.)

Dr. Emil Mayer thought that Dr. Brown's operation was mechanically a double Asch operation. On general principles he was of the opinion that the submucous operation is the best one yet devised. Cases should be selected, however. He had been unable to operate satisfactorily in this way on very young children, and had not been able to secure good anesthesia, when it came to working on the bony portions, from cocaine alone. One case was mentioned of cocaine intoxication.

Dr. Otto T. Freer championed the submucous operation, and said he had had no difficulty with children, even under local anesthesia. He had examined Dr. Brown's patient and did not feel satisfied with the result. The more he operated the more inclined he felt to use sharp rather than blunt instruments, as he believed the former less painful. He also believed that the submucous operation was applicable to every possible form of deflection.

Dr. C. F. Theisen employed general anesthesia in children under fifteen years, using the recumbent position and strong electric illumination. If the deviation was confined to the cartilaginous septum, the Asch procedure was good, but if the bone was involved the submucous operation would give better results.

Dr. J. O. Roe believed that a great many submucous operations were being done unnecessarily. He, too, would regard Dr. Brown's operation as a modified Asch.

Dr. C. W. Richardson did not believe that Dr. Brown's operation would give satisfactory results in many cases. He failed to see how it could produce a perfectly straight septum. He had been won over to the submucous operation, though not particularly enthusiastic over it at first.

In closing the discussion, Dr. Brown justified the positions taken in his paper. As long as we had normal tissue present it was our duty to replace it in the proper position, rather than to remove it. He referred to certain mechanical principles involved in septal reposition. In his patient, the results, so far as personal comfort and restoration of nasal function were concerned, were most satisfactory.

The Ethmoturbinal Cells, Clinically Considered.—Dr. John O. Roe of Rochester discussed the theories as to the mode of formation of these cells in the middle turbinate body and enumerated the symptoms caused by their distention. We might have pressure symptoms or troubles of a reflex nature. The enlargement of the bone caused by the distended cell was often mistaken for a polyp. The cells were often the seat of an empyema, and the source of the pus was erroneously looked for in some one of the accessory nasal sinuses. The condition could be differentiated from enlargement caused by growths, cysts, or simple turbinate tissue hypertrophy by the use of the probe. Puncture of a supposed polyp might reveal the exact nature of the growth. Treatment should consist in the removal of all pressure and the restoration of nasal patency. Removal of the entire turbinate might be necessary, especially if the condition were associated with disease of the posterior ethmoid or frontal cells. If the outer wall of the cell is thin it may be forced inward, thus leading to a collapse and obliteration of the cavity in the turbinate.

Frontonasal Encephalocele.—Dr. Frederic E. Hopkins of Springfield reported the history of a case of this nature. A child of eleven months was brought to him with a small swelling over the right nasal bone. It was congenital and had been regarded as a cyst. The fossa on that side seemed obstructed and seemed to contain constantly a clear, watery fluid. Polyps had been removed from this side three months previously, giving but temporary relief. Dr. Hopkins found a mass in the right naris, extending to the depth of half an inch and apparently attached to the outer wall near the end of the inferior turbinate. This was removed without incident with a cold wire snare. Examination now revealed a globular tumor at the level of the middle turbinate, about five-eighths of an inch in diameter, perfectly smooth, of a grayish color, and semitransparent. Pressure on the swelling in the naris caused an increase of the swelling over the nasal bone outside. Diagnosis of cerebral hernia was made and nothing further done at the time. The naris now dropped cerebrospinal fluid at the rate of about four drops per minute. The child became ill on the fifth day and died of meningitis at the end of two weeks. The report of the pathologist on the tissue removed was to the effect that it was doubtless a part of the meninges, as it contained more fibrous tissue and cellular elements than an edematous polyp, which it was first supposed to be.

Diseases of the Trachea.—Dr. James E. Newcomb of New York opened "A Symposium of Diseases of the Trachea," taking up the subject of Abnormalities, Hemorrhages, Inflammations, and Infections. A plea was made

for a more extensive use of the mirror in examining the trachea. Various malformations were briefly described. Perichondritis was generally secondary to some infection, as typhoid, tuberculosis, or syphilis. Various dermatoses might occur, such as erythema nodosum, herpes, impetigo herpetiformis, erythema multiforme, lichen ruber, and angioneurotic edema. Acute catarrh was generally associated with that of the larynx and bronchi. Dysphagia had been by some authors regarded as a symptom of tracheal inflammation. New methods of tracheal injection were touched on, such as that of Marangos, who injects through the nose, and Mendel, who projects the fluid against the side of the pharynx, whence it runs down into the trachea. Ozena might occur primarily in the tube, and several instances of severe stenosis were on record from crust accumulation. Nothing new had been advanced as to the etiology of this affection. Tracheal hemorrhage had been reported by numerous writers, and generally as a sequel of influenza. It was necessary to follow up such cases, as they might eventually become tuberculous. But there were cases in which the blood could be seen to ooze from varicose vessels just below the glottis, while the rest of the tracheal walls were perfectly clear. Tuberculosis was generally a feeble episode only, in the laryngeal and pulmonary disease it accompanied. Primary tuberculosis of the trachea, however, had been observed. True tuberculoma of the trachea had been described twenty-five years ago by J. N. Mackenzie, but few authoritative cases were on record. Syphilitic lesions found in the trachea comprised catarrh, erythema, condyloma, ulcers, perichondritis, cicatrices, and gumma. Infiltration in this region might be delayed for years. The use of the bronchoscope as recently developed offered the possibility of a greater definiteness of localization of lesion. Each case called for treatment constitutionally and mechanically, according to its special requirements. It was difficult in clinical practice to separate syphilis of the trachea from that of the bronchi.

Tracheal Tumors.—Dr CLEMENT F. THEISEN of Albany, N. Y., presented a paper based on a study of most of the authentic cases of primary tracheal tumors on record, 135 cases being considered. Of these 89 were benign and 46 malignant. Of the former, the varieties found comprised fibroma (polyps), lipoma, papilloma, ecchondroma and chondroosteoma, adenoma, intratracheal struma, and lymphoma; of the latter, carcinoma and sarcoma. Particular attention was given by the author to intratracheal struma, ten cases of which were now on record. The majority of papillomata occurred in children and were undoubtedly congenital. Only one genuine case of lipoma is recorded. Two cases of lymphoma and seven of adenoma were considered. Twenty-four cases of fibroma were found, fifteen of which were pedunculated. In the majority of cases they occurred during middle life. Very little was known as to the genesis of ecchondromata and chondroosteomata. Of the malignant growths, primary carcinoma occurred most frequently in the medullary form, but occasionally as a cylindroma. In a number of instances the growth originated in the tracheal mucous glands. One case seemed to be a malignant degeneration of an original strumor, and in this case an extensive resection of the trachea was performed. Cancer favors the male sex. Of sarcoma, the author had been able to find records of eighteen cases. While endotracheal operations have been performed several times, they offer little chance of permanent success. The sexes suffer alike in this form of malignancy, young people rather than old. The author then discussed the etiology, symptomatology, diagnosis, and treatment of tracheal tumors in general. An extensive bibliography was appended.

Tracheal Stenoses.—Dr. WILLIAM K. SIMPSON of New York City enumerated as the extrinsic causes of stenosis, struma, pressure by tumors, glandular hypertrophies, emphysema pressure, aneurysms, phlegmonous inflammations of cellular tissue, extension of bone disease, trauma; intrinsic causes were classified as cicatrices and adhesions, morbid growths and foreign bodies, inhalation of irritants and ingestion of corrosive chemicals, and inflammations leading to thickening of the tracheal walls. The author then discussed the mode of action of these various causes in detail, and enumerated the symptoms caused thereby. The especial symptom was the stridulous breathing. Tracheal dyspnea had some characteristics peculiar to itself. It was inspiratory in character, the inspiration being longer than expiration; might be labored, noisy, or wheezing, was at times audible for a considerable distance, but had not the peculiar brassy, croupy, stridulous sound of laryngeal dyspnea. Diagnosis could be made by the laryngeal mirror, aided in obscure cases by the *x*-ray. Operation revealed a greater extent of stenosis than would be indicated by the mirror image. Treatment depended on the recognition of the cause. Outside of specific cases it was entirely surgical. We had at our command tracheotomy, tracheal fissure, with exsection of the stricture tissue, resection of the portion of the trachea involved, and finally the various forms of dilatation. Dr. Simpson showed various models of cannulæ employed for the last-named purpose.

Foreign Bodies and Tracheoscopy.—Dr. A. COOLIDGE, Jr., of Boston spoke of the behavior of foreign bodies drawn into the upper air passages, and said that the important question, after considering the nature of the body, its probable position, and the patient's general condition, was, what is the danger of leaving it alone; next, if an attempt at removal was made, was the patient's chance improved or not; and, finally, what operation should be done? Various statistics were quoted, but the proper methods of treatment adopted during recent years rendered an entirely new consideration of all the foregoing points necessary. The author briefly traced the history of tracheoscopy and bronchoscopy, and discussed the physical principles involved. In the older methods the surgeons worked in the dark; with modern instruments, he could see just what he was doing, and inspection of the trachea and bronchi became just as definite a procedure as inspection of other bodily areas requiring special instruments. Modern essentials were a proper tube, a good illumination, and an instrument for extraction of the foreign body which could be easily and safely used through the tube. The author submitted various instruments, and spoke of certain modifications in their employment which had proven of service to him. In closing, he reported three cases, in addition to the five previously reported to the Association. The foreign bodies were respectively a prune stone, shingle nail, and hook. All were successfully removed.

Dr. EMIL MAYER had had five personal cases of bronchoscopy, and expected to publish shortly a record of his experience. In one of these cases a melon seed had been removed from a child of ten months. As far as he knew this was the youngest case on record. The introduction of the tube was sometimes very difficult.

Dr. E. FLETCHER INGALS had found some of the instruments on the market clumsy, if not even dangerous. He had done the upper operation some twelve or fourteen times and the lower once. He was in doubt as to the advisability of using cocaine or atropine in these cases. There had been some unaccountable cases of death following a successful operation.

Dr. J. SOLIS-COHEN thought that stenoses following tracheotomy often arose from the fact that the operation was done too high up. He had adopted the practice of using two tubes, one long and the other short. These were changed frequently, so that the irritation from pressure did not constantly bear on the same spot. Tubes flattened laterally were preferable to round tubes.

Dr. D. BRYSON DELAVAN believed that damage was sometimes done to the vagus through too much manipulation of

these regions. Such damage might explain some of the mysterious fatal cases.

Dr. THOMAS HUBBARD had found that rings of cicatricial tissue sometimes formed after operation, causing dyspnea.

Dr. THOMAS J. HARRIS said that dyspnea was sometimes hard to account for, as no stenotic ring could be found to explain it.

Dr. JOHN O. ROE called attention to the fact that in his experience those who had had a tracheotomy done in their childhood rarely reached an advanced age.

Dr. J. W. GLEITSMANN said that the tubes in halves which Dr. Coolidge had shown had been known to turn over each other, thus rendering the manipulation of the bronchoscopy tubes very difficult.

Dr. W. K. SIMPSON said that small bodies were often expelled through the short O'Dwyer tubes by the act of coughing.

Dr. C. F. THEISEN referred to a recent publication by Schroetter, describing a bronchoscope devised after a new principle. It had been described in a recent issue of the *Wiener medizinische Wochenschrift*.

Fibroma of the Larynx in a Child of Five Years; Apparent Cure; Recurrence as a Papilloma; Laryngofissure; Cure.—Dr. THOMAS J. HARRIS of New York gave the later history of a case which was originally reported to the Association one year ago. The sequence of later events is indicated in the title. The stenosis returned in about six months after she had seemed cured, and appeared to be granulomatous in nature, but the microscope showed it to be papillomatous. A tube was then worn for about six months longer, since which time the larynx had been free. The voice, however, was gone. A fair view of the larynx could now be obtained with the short Killian tube, and while there was no evidence of any neoplasm, there was very little cord remaining.

Hysterical Mutism.—Dr. G. HUDSON MAKUEN of Philadelphia gave a general description of this condition. He also reported the case of a young man of twenty-two years who was struck across the bridge of the nose and right orbit by a live trolley wire. He was dazed for a few hours, but apparently not severely injured. The power of speech, however, was in complete abeyance. When coming under the author's observation some time later, several minor faults of the upper air passages were removed, without any effect on the loss of speech. There was marked anesthesia in the larynx. The patient could not hold the vocal cords in approximation sufficiently to make them vibrate and produce sound; he could not produce either resonant or whispered sounds, and did not seem to know how to begin to try, lacking the mental conception of articulative movements as well as that of movements for vocalization. Instruction was carried on for some weeks, with the result of the acquirement of a few short, partly-whispered words, but the patient soon forgot what he had apparently acquired. There was a "psychological lesion" in the center for motor speech. All sorts of laryngeal stimulation were tried for some time. During the fourth month of his illness he had two typical hysterical seizures, and during the second one, which was very severe and happened at night, his silence of fifteen months was broken, though his first words were uttered in a state of unconsciousness. He was gradually awakened and talked constantly. From that time on progress was satisfactory, though for a considerable period he was troubled with various nervous symptoms.

Papilloma of the Larynx From Inhaling Flames.—Dr. A. B. THRASHER of Cincinnati presented the history of this case. His patient, a man, had been injured two months before coming under observation by an explosion of gas in the cellar of a drug store. He had had a severe inflammation of the upper air tract, from which he had made a slow recovery and had gradually become aphonic. Examination revealed in addition to a general redness of the parts several granulomatous-looking masses springing from the ventricles and almost obstructing the entire cords. Other similar bodies were seen below the cords during forced inspiration. Examination of a fragment removed revealed a papillomatous neoplasm, with some admixture of granulation tissue. The masses were removed a few at a time, bleeding following each seance being rather profuse. Silver nitrate, 10 per cent., was applied to the base of each nodule. A few months later the larynx was sufficiently cleared to allow of a view of both cords, and his voice became considerably stronger. Still later the voice became normal, though no later view of the region was had. The author noted that so far as this one case went, it lent favor to the theory of the inflammatory origin of laryngeal papillomata.

Scleroma of the Larynx.—Dr. EMIL MAYER of New York City reported one personal case, his patient being a Russian Pole, girl, aged sixteen years. While crossing the ocean three years previously she took cold and became hoarse. Hoarseness had remained constant. Masses of crusts were expelled, together with much secretion from the nose and nasopharynx, and there had been an increasing dyspnea. Odor was absent, and the general health had continued good. Some of the crusts were removed and sent to the pathologist, who reported that the condition was scleroma. Dr. Mayer reviewed the literature of the subject, epitomizing the statements of various authors. Dr. Mayer stated that the prognosis as to recovery was bad, though the general health might not be impaired save from such symptoms as the varying stenosis would occasion. External conditions had been benefited by the *x*-ray. In the larynx, removal of the crusts was often necessary. The pressure of an intubation tube both before and after tracheotomy had been useful, as had also the Schroetter tube. The lesion was to be regarded as a chronic, incurable one, and to a certain degree contagious. The writer deemed it most advisable that the sanitary authorities take action now with view to a prevention of further cases, inasmuch as present cases were few and far between, and the problem presented itself in a comparatively simple form. Quarantine officers should not allow cases of scleroma to land.

Two Cases of Bone Impacted in the Larynx.—Dr. JOHN M. INGERSOLL of Cleveland reported the cases. Case 1 was that of a man with progressive inspiratory dyspnea, leading up to cyanosis and necessitating tracheotomy. The following day examination showed complete abductor paralysis of the larynx, a view below the cords being impossible. Above the cords the organ was inflamed, and two ulcerations were made out. Iodide of potassium was given, but had no effect on the glottic picture. Patient died of septic pneumonia one month later. Autopsy revealed a condition not at all suspected. In addition to the usual septic conditions, a piece of bone irregularly triangular, about 5 cm. long and 2 cm. wide, curved on the flat, was found in a cavity on the posterior wall of the larynx, access thereto being through an ulcer about 2 cm. in diameter. The gullet was intact and its mucosa normal. The bone had evidently fallen into the larynx during a meal and had worked its way through the posterior wall of the larynx into the position in which it was found on autopsy. The man gave no history of any such accident. It had evidently pressed on the recurrent nerves and thus led to the paralysis. A second case was also reported, with similar initial symptoms and which was supposed to be due to syphilis. Tracheotomy was done to relieve the dyspnea. All that could be seen was a grayish, rough surface below the cords. Finally the larynx was split and a piece of bone was found imbedded in the right side of the trachea, just below the larynx. Relief was immediate and complete. In this case also the man had no recollection of ever having swallowed the offending material.

Sarcoma of the Nasopharynx; Treatment by Injections of Adrenalin.—Dr. J. E. RHODES of Chicago re-

ported the case of a married woman of 22 years with the history of a growth commencing in the throat at the age of ten. When seen by the author there was a mass in the nasopharynx completely obstructing the choanæ, severe pain, profuse discharge, and all the features of a chronic sepsis. Palpation showed an attachment to the nasopharyngeal wall and the extension of the mass down nearly to the edge of the soft palate. It was firm though not hard, did not bleed easily, and no ulceration could be made out. Microscopical examination of a fragment showed the tumor to be a spindle-celled sarcoma, highly cellular, with many lymphoid cells. A consideration of all the features in the case led to a decision against operation. Consequently Rhodes determined to inject adrenalin through the nasal channels through a long needle. The symptoms were considerably relieved by this plan of treatment, but the patient died in about two months from exhaustion. The author referred to other cases similarly treated by others and believed that the method deserved a further trial. Reference was also made to the physiological effect of the remedy. Caution was suggested as requisite in this special application of it. It has been found by animal experimentation that arteriosclerosis sometimes follows its prolonged administration.

Dr. C. F. Theisen said that a pathologist in one of the Albany laboratories had produced myocarditis in animals by injections of adrenalin.

Dr. J. Price-Brown had found that adrenalin had an effect in checking the circulation in sarcoma and lessened bleeding. In this disease the characteristic secondary reaction of the remedy seemed to be wanting.

Dr. D. Bryson Delavan did not believe in the theory of the secondary reaction of adrenalin. In his experience it had been entirely wanting. Clinically speaking, the reports of hemorrhage after the use of the remedy had been inconclusive. Hemorrhage occurred in a certain number of cases anyway, and it was not clear to his own mind at least that adrenalin had anything to do with it.

Dr. E. Fletcher Ingals had had excellent results from injections of lactic acid in the case of nasopharyngeal sarcoma. It should be begun in 15 per cent. strength and gradually run up to 35 per cent.

Dr. Norval H. Pierce stated that after injections of adrenalin or its local use on mucous membranes, streptococci and staphylococci were greatly increased in virulency. He would utter a caution in the use of the remedy.

The Removal of Adenoid Vegetations Through the Nasal Passages by a New Method—Dr. Otto T. Freer of Chicago finds objections to the various forms of curette and ring knife now so generally employed, claiming that they do not afford clean and sufficient removal of the offending masses. If the latter are at all tough the blade is apt to slip over them. Moreover, the ramifications of the nasopharyngeal cavity are such that no ring knife or similarly constructed instrument will reach them. Hence Freer prefers to operate through the nasal fossæ and has devised for this purpose a slender forceps with a smoothly rounded beak. It is of the general model originally devised by Ingals for the removal of bone in the nose. At first sight it would seem as if the instrument were too large to pass through the nose, but experience has shown that there is no difficulty in this respect. The author uses chloroform anesthesia combined with cocaine in 10 per cent. solution and has had no difficulty with this combination.

Mouth Breathing.—Dr. William Lincoln of Cleveland read a short paper with this title and illustrated his remarks with lantern slides. He called attention to the fact that many children remained mouth breathers after adenoids and enlarged tonsils had been removed, but the patients have often suffered so great a distortion of the osseous framework of the face, particularly of the upper and lower maxillæ and their arches, that no amount of work by the rhinologist alone will relieve the difficulties from which they suffer. The dentist is the one who can help the sufferer out. Under normal conditions the mouth is closed and the teeth and lips properly apposited by the normal tonicity of the facial and buccal muscles, but when the latter are weakened by altered bone conformation the jaws are closed and held together only by conscious effort. During sleep the jaws drop apart. Sometimes the posterior molars come together in such a way that it is impossible for the incisors to meet. Thus the jaws are locked. The determination of cause and effect in the study of these deformities of the facial bones and lymphoid hypertrophies is not easy. Either condition may be provocative of the other. Adenoids and tonsils may weaken the growing child so that dentition is delayed and teeth decay started and the whole framework of the face and whole body retarded and weakened in texture. Locally it seems probable that if the lymphoid masses are large they may be slight, but constant pressure changes to some extent the correct relation of the upper and lower maxillæ. On the other hand, the normal width and shape of the maxillary arches being disturbed, there must follow septal deformities, turbinal distortion and enlargements, and in consequence encroachments on the lumen of the nares, rendering nasal breathing impossible or very difficult, whereby in turn the nasopharynx suffers and adenoids ensue. The slides shown illustrated the changes in jaw conformation produced by proper dental prosthesis.

Malignant Disease of the Tongue.—Dr. J. H. Bryan of Washington, D. C., discussed two cases. Case 1 was that of a man of 60 years with an indurated ulcer on the right border of the tongue at its posterior third. Strong irritants had given it an inflamed appearance. No glands were found. Diagnosis, malignancy. The patient was operated on by Mr. Butlin of London, who, after doing a preliminary laryngotomy, excised the whole right half of the tongue. Three weeks later a complete dissection was made of all the glands of the neck. Nothing was found in them suggestive of cancer, but the mass removed from the tongue was found to be a squamous-celled carcinoma. Remained well for about seven months, when a swelling appeared in the opposite side of the neck. This was removed, but the next day after the operation the patient developed a hemiplegia and he died of a pneumonia forty-eight hours after operation. Case 2 was that of a man of 70 years who had for some time suffered from dysphagia without apparent cause. Later there developed a mass at the base of the tongue, projecting out of the larynx and suggestive of an exaggerated degree of edema of the epiglottis. There was no pain. The growth bled easily on examination. There was a small glandular enlargement on the left side of the neck at about the bifurcation of the common carotid artery. Examination of a fragment of the growth revealed it to be a surface epithelioma without the formation of pearls. The Kocher operation was performed, it being shown that attachment was to the tongue and not to the epiglottis. Recovery was slow, but uninterrupted. Eight months later the patient was doing fairly well, though troubled somewhat with difficult articulation and accumulation of fluids in the mouth.

Examination of the Throat in Chronic Systemic Infections.—Dr. J. L. Goodale of Boston referred to frequent consultations he had had with orthopedists in regard to the relation of throat conditions to chronic arthritis. The question was constantly arising, did the throat condition account for enlarged cervical glands, and was it the point of entrance for the joint infections? The paper was confined to the consideration of tuberculous lymph nodes and infectious arthritis. Experience has shown that the removal of a septic focus has often relieved the joint symptoms. Ten cases were reported, showing that tuberculous cervical adenitis may exist in association with the

presence of tubercle bacilli in enlarged tonsils with or without visible change in the latter, and is not necessarily affected by tonsillar removal, and, second, that a form of cervical adenitis exists accompanied by distinct enlargement and subacute or chronic inflammation of the tonsils, and disappears after their excision. In the first place it appears reasonable to assume that a penetration of bacilli takes place through the tonsils into the glands, and in the second that an absorption of irritating material has occurred, being generated in the tonsils and conveyed to the glands. Removal of the focus of toxine production is naturally followed by immediate relief. The author then discussed the matter of the modes of penetration of such irritating and infecting material through the tonsils, maintaining that it would be favored by an increase in the size and number of the intercellular spaces of the lacunar epithelium and the retention of crypt contents. Now in regard to chronic arthritis, it may be true that this condition is due to a specific organism, and it is certainly likely, nay more, probable, that such organism is constantly present in the mouth and that certain patients are peculiarly susceptible to it. Given this systematic predisposition, local vulnerability would become of importance in determining an attack. We are therefore compelled to seek for the place of diminished resistance. This may be in the throat, and in all such instances the tonsils should be carefully examined. The arthritic individual predisposed to rheumatic infection finds in certain remedies, diet, etc., means for resisting infection or in controlling bacterial development after entrance thereof. The examination of many cases of infectious arthritis has shown pathological alterations in the tonsils, characterized in general by the retention of lacunar detritus with or without enlargement of the tonsil. Hence if we can eliminate in these joint cases other portals of infection it is logical to thoroughly extirpate the tonsils. We shall thus replace a tissue of diminished resistance by a stout barrier of compact structure without nook or recess to harbor a pathogenic parasite.

Etiology of Hyperkeratosis of the Tonsils.—Dr. George B. Wood of Philadelphia presented a paper on this subject. He took strong issue with those writers who have ascribed the disease to the effect of a specific infection, the leptothrix, declaring that neither this nor any other microorganism stood in such causal relationship. He maintained that it would be as rational to hold the dirt and grime of a miner's hand responsible for the production of the horny layer of the skin as to believe that such a saprophyte as the leptothrix is responsible for what is really a calloused tonsil. There is, it is true, a rather acute infection of the throat in which this organism is probably the exciting cause, but such infection is not limited to the tonsillar tissues and may occur in any portion of the body in which vital resistance has been lowered and to which the organisms have obtained access. True, hyperkeratosis is limited to lymphoid tissue portions of the throat. The true explanation of the condition under discussion is found in the behavior of the epithelium lining the tonsillar crypts. These are dilated and filled with a horny mass which emerges at various points into the epithelium. The latter is in a state of active growth which results in the formation of the keratoid plugs. Other changes may occur, but this change in the epithelium of the crypts is the characteristic pathologic feature of hyperkeratosis. The author is of the opinion that the cryptal epithelium is a primogenial source of lymphocytes. At the bottom of the whole process is a decreased functional activity of the tonsil while a portion of the cryptal epithelium still possesses its physiological tendency toward growth.

Dr. J. H. Bryan opened the discussion on the two last papers on tonsillar conditions. He had had one case in which accumulation in the tonsillar crypts had seemed to stand in a causative relation to arthritis. It was too early to speak positively.

Dr. Thomas Hubbard believed this subject to be a most timely one. We should endeavor to remove tonsils before the child had absorbed enough poison to lead to rheumatic outbreak with consequent valvular cardiac lesions. He had had an interesting series of cases of keratosis occurring in the same family.

Dr. H. L. Swain spoke in commendation of Dr. Goodale's work, which showed, however, that it was not possible always to tell whether tonsils were healthy or not until we had removed and examined them. The statements made in the paper called for a more serious consideration of tonsillar diseases in their relation to systemic infection than we had been accustomed to give.

Dr. Emil Mayer noted that the removal of cheesy contents from tonsillar crypts often cured obstinate cough.

Dr. Goodale in closing the discussion said that the tonsil was only one of a large number of glandular structures, and it would be interesting to know if what was true of it was true also of other lymphoid deposits, such as those in the small bowel, etc. In all suspicious cases we should never omit to carefully examine the tonsils in our search for sources of infection.

Dr. Wood in closing begged to add one or two words on the subject of epithelial metamorphosis. He noted that the thymus, essentially an adenoid structure, had been shown to develop from the epithelial cells forming the original anlage. No leucocytes appeared in the blood until they had occurred in the developing thymus. As the thymus disappeared the tonsils developed and later the solitary lymph follicles of the intestine and the lymphatic tissue of the appendix very possibly carried on this manufacture of leucocytes.

Mixed Tumor of the Soft Palate.—Dr. T. H. Halsted of Syracuse, N. Y., reported the case of a man of 55 years complaining of recent sore throat and hoarseness. He had had similar attacks for fifteen years or more. Examination showed an appearance about the left tonsil suggestive of quinsy with superficial inflammation of all the surrounding parts, but the swollen area was very hard to the feel. The superficial inflammation quickly cleared up, leaving the appearance of an enormously enlarged tonsil buried between the pillars and almost entirely covered by them. The swelling was greatest in the soft palate above the arch and was pushing the posterior pillars backward and largely obstructing the left side of the nasopharynx, extending up to the Eustachian orifice. The mass was of stonelike hardness and had a nodular surface. There were no enlarged glands, cervical swelling, or history of bleeding. A diagnosis of malignant growth was made. Later there was some bleeding from the throat, but no change in appearance. The mass was removed under local anesthesia without difficulty or special incident. The tumor was of oval shape, 7 x 4 x 5 cm. in measurement, and contained several small cysts. Recovery was rapid. At the end of seven months there had been no recurrence. Microscopical diagnosis, a cylindroma evidently originating in connection with the parotid gland (possibly an aberrant portion) or in connection with mucous glands.

Cases of Sarcoma.—Dr. Thomas Hubbard of Toledo presented the reports of two cases. The first was that of sarcoma developing in fibromyxoma of the epitonsillar space. His patient was a man of 40 years, with a mass ovoid in shape and about two and one-half inches in longest diameter, situated just above the left tonsil and in the substance of the soft palate. Nodules gave it an irregular surface and these nodules appeared very vascular. The mass was enucleated under Schleich infiltration anesthesia. No return ten months after operation. Microscopical diagnosis, mixed-celled sarcoma. The second case was sarcoma of the neck following extirpation of the tonsil. Patient was a man of 30 years whose tonsil was removed following enlargement of the cervical glands, the whole picture being suggestive of malignancy. The glands did not subside, but

gave evidence of harboring some septic process, and finally the whole glandular mass was excised. Microscope revealed a small round-celled lymphosarcoma of a compound lymph gland. The patient lived only two months, and before death presented the usual symptoms following involvement of the vagus and its branches.

Officers for the ensuing year were elected as follows: *President,* Dr. A. W. De Roaldes, New Orleans, La.; *First Vice-President,* Dr. G. Hudson Makuen, Philadelphia, Pa.; *Second Vice-President,* Dr. A. B. Thrasher, Cincinnati, Ohio; *Secretary and Treasurer,* Dr. James E. Newcomb, New York City; *Librarian,* Dr. J. H. Bryan, Washington, D. C.; *Member of Council,* Dr. J. W. Gleitsmann, New York City. The meeting for 1907 will be held at Washington, D. C., in connection with the Triennial Congress of that year.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, Held at Bedford Springs, September 10, 11, 12, and 13, 1906.

(Special Report to the MEDICAL RECORD).

(*Concluded from page 511.*)

GENERAL SESSION.

Second Day—Wednesday, September 12.

The Thyroids and Parathyroids; Their Relations, Histology, Physiology, and Chemistry.—Dr. ALLEN J. SMITH of Philadelphia presented an elaborate paper upon this subject, saying that the parathyroids and thyroid gland are structurally distinct and are not in any sense interconvertible. That there is some relation in their function was considered probable. The parathyroids were said to be essential to life. The loss of the thyroid, it was stated, was followed by chronic trophic and metabolic disturbances. While the function of the parathyroid strongly suggested its action in an antitoxic manner, there was reason to believe that in case of the thyroid a true metabolic secretion is produced, although he thought it possible that in a limited sense here, too, an antitoxic action was associated. He thought it probable that the active product of the thyroid was one of the iodine-organic compounds which have been isolated from it, probably the thyroglobin of Oswald. He thought there was suggestive evidence that in addition to the indefinite relation believed to exist functionally between the thyroid and parathyroids, there was also a close relation held to the thyroid by the hypophysis cerebri, which possibly may have some degree of compensatory ability.

The Pathology of Diseases of the Thyroid Gland.—Dr. GEORGE P. MÜLLER of Philadelphia, in presenting this paper, stated that, presupposing an acquaintance with the anatomy and histology of the gland, the various affections should be grouped clinically into hypertrophies, tumors, cysts, and inflammations. These main types were said to contain certain subdivisions which were grouped at the end of the paper, but were discussed in the order in which they bear a relation to each other.

Classification of the Diseases of the Thyroid Gland and Therapeutic Uses and Abuses of the Thyroid Gland.—Dr. THEODORE J. ELTERICH of Allegheny classified diseases of the thyroid gland under the captions of congestion, inflammation (thyroiditis), neoplasms, simple hypertrophy (goiter), exophthalmic goiter (Basedow's, Graves', or Parry's disease), cretinism, and myxedema. These several divisions were discussed. Thyroid gland or thyroidin had served more than any other similar substance to establish organotherapy upon a firm basis. The results were most astonishing in myxedema in its various forms, and in cretinism. The indications against the use of thyroid preparations were given as weakness of cardiac action, albuminuria, and glycosuria. Coincident tuberculous disease, or suspicion of grave renal or hepatic disease, should cause hesitation in prescribing the drug.

Symptomatology, Diagnosis, and Medical Treatment of Exophthalmic Goiter.—Dr. ALFRED STENGEL of Philadelphia said that no physician could have seen cases of exophthalmic goiter, or Graves' disease, without having gathered the impression that there are different types classified under one name. Reference was made to the functional element of the secretion of a substance, called thyroglobulin, the overproduction of which was responsible for many of the symptoms which were called Graves' disease. The symptoms were fully considered and a review given of the value of medical treatment, with a consideration of the indication for operative interference.

Surgery of the Thyroid Gland.—Dr. ROBERT G. LECONTE of Philadelphia, owing to the limit of time, elaborated but three points in the surgery of goiter: (1) Mortality was considered, with a view of advising or rejecting operation in an individual case. (2) The indications for operation were considered. (3) The technique of the operation was discussed, including the questions of anesthesia, position, incision, and dissection. In conclusion Dr. LeConte stated his belief, first, that in hopeless cases of malignancy too many radical operations were undertaken where palliative surgery would prolong life and increase the comfort of the patient; second, that in benign tumors of the thyroid, palliative methods were often resorted to when a radical operation should be done, because Graves' disease, or even malignancy, not infrequently was later engrafted.

The Relation Between the Thyroid and the Eye.—Dr. JOHN E. WEEKS of New York, in presenting this paper, drew attention to the fact that diseases of the thyroid and parathyroid were as yet inseparable, and that in considering the symptoms present in the eye due to thyroid disease, disease of the parathyroid must be included. The relation of the thyroid to the eye was considered under a number of headings, a table of which was given, including conditions of the eye due to pressure of thyroid enlargements; to local metastatis of malignant thyroid tumors (very rare); to or associated with absence of thyroid gland; to compensatory enlargement of the hypophysis cerebri; aggravated by or otherwise associated with goiter—Graves' disease, etc.; due to some form of hyperthyresis. Under the head of conditions aggravated by or otherwise associated with goiter, the eye symptoms of Graves' disease were given and fully described. The effects of overdosing with thyroid preparations were also enlarged upon to some extent.

Dr. EDWARD MARTIN, referring to Dr. Stengel's statement of the medical remedies and indication for operative interference, thought the main question was in regard to the length of time medical remedies were to be tried. Surgically, it was known that if the thyroid could be properly removed the symptoms of Graves' disease would disappear. His belief was that when the cases, in spite of any treatment, were progressive, they should be operated upon, and that if operated upon early enough, the operative mortality was almost as low as in operations for appendicitis.

The papers were further discussed by Dr. Samuel D. Risley of Philadelphia and Dr. James I. Johnston of Pittsburg.

The new president, Dr. Isaac C. Gable of York, was introduced, and the announcement was made of Reading as the place of meeting in 1907.

Third Day—Thursday, September 13.

Oration on State Medicine.—Dr. SAMUEL G. DIXON, Health Commissioner of Pennsylvania, delivered this oration. He paid a tribute to the work done by Dr. Benjamin Lee in the State Board of Health and to the members of the medical profession who had stood by the work for twenty years past. He made a plea for vaccination and referred to the fact that a year ago the Department had called attention to a health law which had been on the statute books since 1895, providing that unvaccinated children could not

be admitted to school; and further referred to the accusations that he was breaking up the schools. Much of this prejudice he believed had been overcome. Hundreds of thousands of children had been made immune against smallpox by vaccination. Not only had the Supreme Court of Pennsylvania reaffirmed the law, but the Opinion itself constituted one of the strongest arguments in favor of the vaccination of school children. He outlined the work of the Department in the fight against typhoid fever and in the distribution of diphtheria antitoxin. An earnest effort, he said, would be made to remedy the midwifery evil, and suggested that the Medical Society of the State of Pennsylvania might well lend its influence to such end. To stop the pollution of the waters of the State was also mentioned as an object receiving the attention of the Department of Health.

MEDICAL SECTION.

Third Day—Thursday, September 13.

Etiology and Symptomatology of Stenosis of the Pylorus.—Dr. GEORGE S. DICKINSON of Erie considered briefly the etiology and symptomatology of this condition and cited a few cases illustrative of the causes of the affection and the accompanying symptoms. In the first case cited the condition was attributed to the constant pressure of the stomach against the desk in a man aged fifty years and a bookkeeper.

The Differential Diagnosis and Treatment of Pyloric Stenosis.—Dr. JOHN A. LICHTY of Pittsburg enumerated the symptoms of pyloric stenosis, stating that it should be differentiated from simple atonic dilatation of the stomach, the vomiting of pregnancy, simple hyperchlorhydria, right movable kidney, gastroptosis, gastric neurasthenia, subacute gastric ulcer, hour-glass stomach, certain affections of the pancreas, and cholecystitis with or without local peritonitis. There was, he said, no pathognomonic sign of cancer of the stomach. Reference was made to the discovery by Dr. George Kelling of Dresden of that which he regarded as a reliable hemolytic reaction of the blood serum of cancer cases upon red blood corpuscles of chickens. Treatment in complete cases was regarded as necessarily surgical, pyloroplasty or pylorectomy being the desirable procedure, though the mortality was still too high. For this reason posterior gastroenterostomy was said to be still the operation most frequently employed. In partial stenosis appropriate medical and dietetic treatment was known to produce good results.

Gastroptosis, with Special Reference to Its Treatment.—Dr. JOHN J. GILBRIDE of Philadelphia called attention to the common occurrence of this disease, particularly in women, and to the fact that anomalies in the position of the stomach were more frequently overlooked than recognized. In diagnosis, determination of the lower boundary of the stomach was not considered sufficient, the lesser curvature in a lower position than normal also being essential. The symptomatology was considered. Treatment should be preventive so far as possible. Clothing forcing the abdominal organs downward was discouraged and the bandaging of the abdomen of women during the lying-in period was advised. The treatment proper of dislocation of the stomach was said to be largely mechanical. Diet should be nutritious and easily digestible. The medical treatment was outlined, and it was advised that it should be persistently tried before resorting to surgery. It should be remembered that the patients were often profoundly neurotic. In cases in which the position of the stomach produced a kink at the pylorus, as pointed out by Kussmaul, surgical intervention might be required such as that indicated in cases in which peritonitic adhesions, tumors, etc., existed. A review of the surgical procedures was given, and the most satisfactory method of elevating the stomach was said probably to be the one described and performed by Beyea. The paper was accompanied with illustrative figures.

Hyperchlorhydria and Its Treatment.—Dr. HENRY D. JUMP of Philadelphia enumerated among the causes of hyperchlorhydria overwork, hurry, and excesses in diet. The symptoms were detailed as distress at the epigastrium at the height of digestion and relieved by food, insomnia, constipation, headache, flatulence, apathy, irritability, rheumatism, and increase of hydrochloric acid. In the diagnosis the condition was to be differentiated from ulcer and mild attacks of biliary colic. Treatment consisted in removal of the cause, bland diet, small frequent meals, the use of alkalies and nitrate of silver and belladonna, or the bromides.

Clinical Results from Examination of Feces After Intestinal Test Diet.—Dr. CLEMENT R. JONES of Pittsburg called attention to some of the clinical observations made and the benefits to be derived from the newer methods of examination of fecal matter after the use of the test diet as advised by Adolph Schmidt of Dresden. He thought it a matter of common knowledge that physicians paid far too little attention to the condition, quality, and quantity of the food ingested by the average patient, to say nothing of the examination of the residue that passed from the alimentary canal. The clinical importance of being able to supply to the patient only foods suitable to his gastric and intestinal state proved the value of the examination of fecal matter.

Dr. HENRY D. BEYEA of Philadelphia had never seen a case of gastroptosis with marked symptoms in which any form of mechanical or medical treatment was of value. Since the gastric motor insufficiency seemed to render it impossible for the musculature of the stomach to force the food up toward the pylorus, he thought relief could be secured only by surgical methods. Cases were cited in which he had operated with good results.

Dr. SAMUEL WOLFE of Philadelphia recognized the value of the laboratory investigations of the stomach contents, but thought it good practice to have the patient give a record of what he had eaten, what he had taken in the way of drink, and how many cigars he had smoked.

Dr. RUDOLPH MYERS of Huntingdon had for years been troubled with acidity of the stomach which had been entirely corrected by the use of "soda mints."

Dr. DICKINSON called attention to the possibility of ulcer of the pylorus being diagnosed as cancer, and recalled cases in which this had been done. In two of these recovery ensued upon the institution of appropriate remedies.

Dr. LICHTY called attention to the necessity of removing an ulcer when the abdomen was opened for any cause and an ulcer found in the stomach. If not removed it offered a nidus for infection.

Dr. JUMP took exception to Dr. Gilbride's advocacy of the abdominal binder, stating that it was oftener up under the patient's breast than in the proper position.

Dr. GILBRIDE, in reference to the use of the abdominal binder, said that it was assumed that it was properly applied. He considered it an aid to the abdominal muscles in regaining their tone.

Dr. Jones spoke of the value of the administration of as much milk as could be well taken in cases of hyperchlorhydria. It had been borne out by experiment that milk induced the secretion of but a small amount of gastric juice, especially if taken between meals. As was known, beef acted as a stimulant to the secretion of hydrochloric acid, while the milk caused the secretion of the least amount. He mentioned seven cases of hyperchlorhydria under his care during the past year, a number of which had cleared up by the proper adjustment of glasses, there having been far-sighted astigmatism.

A Peculiar Trophic Affection of the Skin in a Neurotic Subject.—Dr. RUDOLPH MYERS in this paper cited the case of a lady of neurotic tendency, who, after a slight scratch on the ring finger, observed that the skin on the

back of the finger had become dark and sunken in a space three-fourths of an inch long and half an inch wide. New gangrenous points formed until there were fourteen. The attacks recurred every seven days until the patient had had six, the second having occurred after a severe fright. The author regarded the case as an instance of neurotic gangrene.

Dr. Alfred Gordon of Philadelphia called attention to the onset of the condition following excitement which suggested psychic influence. This inference was further confirmed by the results of the treatment employed, that of the electrical current, after which healing rapidly took place. In his judgment the case was one of hysteria. He further called attention to the fact that hysterical patients frequently exhibited superficial tender spots. This could be verified by the fact that while pressure upon the ovary did not give pain, pressure upon the skin at the level of the ovary would often give very severe pain.

Dr. John J. Burke of Pittsburg asked whether it was possible that the woman had produced the lesion by the use of an acid.

Dr. Myers closed the discussion, stating that the gangrenous spots had healed in less than a week after the application of the electricity, and that then a cyst had formed He wondered whether there might not be some condition of Raynaud's disease. The patient had been carefully watched and the possibility of the lesion having been self produced had been eliminated.

Salt-free Treatment of Epilepsy.—Dr. Alfred Gordon of Philadelphia stated the object of his paper to be the application of the knowledge of experimental physiology to clinical studies of epilepsy. It had been shown that sodium chloride played an important rôle in normal metabolism of the body by influencing the elimination of waste products. Applied to epilepsy its presence in the diet increased the severity and the frequency of the seizures. Its withdrawal produced a decidedly beneficial effect upon the duration and the character of the attacks and upon their frequency. From prolonged observation and a systematic study of thirty-seven cases the author concluded that while the removal of the alimentary salt was not a specific for epilepsy, it modified its course, and therefore added a valuable means in treatment.

Dr. Guy Hinsdale of Hot Spring, Va., referred to the retention of chlorides as one of the great disadvantages in cases of renal disease. This fact and the occurrence of convulsions in advanced renal disease formed two points of contact between the two affections. In the employment of mineral waters he would prefer those with as little chloride of sodium as possible and those which tended to dissolve out of the system some of the salts which were known to be injurious.

Dr. Gordon in closing referred to the reported cases of inoperable Jacksonian epilepsy in which dechloridization had given remarkable results.

Symptomatology and Diagnosis of Lobar Pneumonia.—Dr. James I. Johnston of Pittsburg had made an analysis of one hundred cases from the wards in the Mercy Hospital to determine the frequency of the so-called classical symptoms and signs. The initial chill was present in 82 per cent. of the cases; 87 per cent. had pain over the area of lung involved; cough was present in all. Attention was called to the frequency of apical pneumonia in the series, 16 per cent. The cases were all of lobar pneumonia uncomplicated by other diseases.

Certain Complications of Lobar Pneumonia, Considered with Reference to Surgical Interference.—Dr. Philip Y. Eisenberg of Norristown read this paper.

The Treatment of Lobar Pneumonia.—Dr. James M. Anders of Philadelphia said the leading indication in the hygienic management was absolute rest. He advised under feeding, but did not advocate the "therapeutic fast." In the treatment of the toxemia he considered water, six to eight ounces every third hour, the best diuretic. The fresh-air treatment to be effective should be carried out with rigid personal supervision. The importance of maintaining the activity of the sweat glands was shown. When the condition of the circulation cannot be constantly watched he advised the use of cardiac stimulants in small doses almost from the beginning.

Diagnostic Significance of Herpes Simplex in Infectious Diseases.—Dr. Jay F. Schamberg of Philadelphia said it was highly probable that herpes of whatever type was the result of the action of a toxin. Pneumonia, spotted fever, and malaria were said to be the diseases in which herpetogenic toxin developed with a fair degree of constancy. Its frequency in these diseases and its rarity in typhoid fever and other infectious maladies make its appearance a symptom of considerable diagnostic import.

The Relation of the Cardiac Muscle and Valves to Arterial Tension.—Dr. W. M. Stanton of Philadelphia said that the factors concerned in arterial tension were the heart, the arteries, the small vessels under the control of the vasomotor system, and the quality of the blood. The action of these several factors was described. The blood pressure picture was given in cases of aortic regurgitation, aortic stenosis, and other conditions.

Some Aids in Teaching Climatology and Climatotherapy.—Dr. Guy Hinsdale of Hot Springs, Va., suggested the organization of medical journeys, similar to those arranged annually in France, so as to familiarize physicians with climatic stations and sanatoria. A classification of American health resorts on a therapeutic basis was submitted.

Hypertrophic Pulmonary Osteoarthropathy.—Dr. H. R. M. Landis of Philadelphia reported two cases of this rare affection.

The Relation of the Lymph Glands in the Mediastinum to Disease, and Their Value in Early Diagnosis.—Dr. William S. Newcomet of Philadelphia spoke upon the need of signs for the early recognition of chest diseases, and particularly in pulmonary tuberculosis, and said that if the lymphatic glands were properly studied in early cases they would aid materially toward a proper determination of the nature and extent of the disease.

SURGICAL SECTION.

First Day—Tuesday, September 11.

The meeting was called to order by the Chairman, Dr. William L. Estes of South Bethlehem.

Chairman's Address.—Dr. William L. Estes of South Bethlehem, in this address, considered particularly the preventability and cure of syphilis and carcinoma, the first by educating the public in the doctrines of cleanliness and sterilization and the amenability of venereal diseases in the early stages to treatment; the education of the pupils in the higher schools along the lines of sociology, the requirement of aseptic practices in barber shops, etc., and the second by educating the physician to the necessity for prompt diagnosis and early radical removal.

Oration in Neurology.—Dr. Theodore H. Weisenburg of Philadelphia delivered this address, in which he discussed the advances in the surgery of the nervous system considered from the standpoint of the neurologist. He remarked upon the value of surgical measures for the palliative relief of intracranial pressure, even if radical removal was not possible, and urged the necessity for the surgeon to know more of the anatomy of the nervous system.

Cranial Injuries.—Dr. Daniel A. Webb of Scranton, in this paper, considered particularly late cerebellar abscess of traumatic origin, the only treatment for which, he said, was operative (either palliative or curative), and reported a case diagnosed as cerebellar tumor, which autopsy proved to be a deep-seated abscess of the middle lobe.

Fractures of the Base of the Skull, Resulting from Direct Violence Through the Inferior Maxilla.—Dr. Alexander G. Fell of Wilkesbarre, reported a case of compound comminuted fracture between the median line and the left mental foramen, caused by a fall of twenty feet. The patient gradually regained, but there had since developed a slight abscess of the ear.

The Present Status of Cranial Surgery.—Dr. Charles H. Frazier of Philadelphia reviewed the progress of this branch of the science during the last decade, and considered particularly its applicability in epilepsy, hemorrhage of the newborn and childhood, the cranial, fifth, and auditory nerves, and tumors.

Brain Complications Following Mastoiditis.—Dr. Fremont W. Frankhauser of Reading, in this paper, considered meningitis, abscess, thrombus in the internal jugular vein, in the lateral sinus, or in the cavernous sinus, treating particularly of the mode of infection and location of the abscess, and the symptoms, prognosis, and treatment.

An Unusual Case of Trauma of the Head, Exhibiting Symptoms of Astereognosis as the Only Localizing Symptoms.—Drs. John H. W. Rhein and Edward Martin of Philadelphia reported this case.

Impaired Cerebral Development Due to Other Than Cranial Causes, and Its Surgical Treatment.—Dr. Ernest Laplace of Philadelphia considered particularly adenoids, tongue-tie, and phimosis, recommending that they be corrected as promptly as possible, and stating that in the cases which had come under his care this had produced satisfactory results.

Second Day—Wednesday, September 12.

Oration in Gynecology.—Dr. Frank F. Simpson of Pittsburg delivered this oration, in which he reviewed the work that had been done in this field and the progress that had been made.

Surgical Treatment of Chronic Colitis.—Dr. William M. Beach of Pittsburg considered particularly the operation of appendicostomy, and cited as suitable cases for this procedure amebic dysentery, colon adhesions following catarrhal appendicitis, gynecological operations, syphilis and primary tuberculosis of the colon, describing the technique of the operation and the after-treatment.

Dr. George Erety Shoemaker of Philadelphia cited as disadvantages of the operation the establishment of a mucous channel, and the weakening of the abdominal wall.

Dr. J. M. Fisher of Philadelphia believed that the appendix should be opened immediately after attachment.

Dr. J. C. O'Day of Oil City referred to the employment of the procedure in typhoid fever and epilepsy.

Dr. Otto C. Gaub of Pittsburg believed that the operation was not justified in uncomplicated cases of typhoid fever.

A Modification of the Technique of Fixation of Movable Kidney.—Dr. George Erety Shoemaker of Philadelphia read this paper, in which he described in detail the technique of the operation, the chief factor of which was the preservation, instead of the removal of the fatty cushion.

The paper was discussed by Drs. J. C. O'Day of Oil City, Frank F. Simpson of Pittsburg, and John J. Glibride of Philadelphia.

Perineal Prostatectomy—Its Accidents and Complications.—Dr. L. J. Hammond of Philadelphia read this paper. He said he felt that this was both anatomically and clinically the logical route, and cited as indications the impossibility of catheterization, permanent hypertrophy, large amounts of residual urine, frequent and painful micturition, and acute cystitis.

Dr. William L. Rodman favored the same route as the author, except when there was very much enlargement of the middle lobe, projecting into the cavity of the bladder, he preferred the suprapubic.

The paper was further discussed by Dr. John B. Roberts of Philadelphia.

The Value and Safety of Surgical Exploration in the Abdominal Complications of Typhoid Fever.—Dr. John B. Roberts of Philadelphia read this paper. He stated that the only difficulty in these cases was the question of diagnosis, and recommended an exploratory operation in cases of doubt.

The Use of Silk in Tenoplasty—An Experimental Study.—Dr. George P. Muller of Philadelphia reported the experiments made upon ten dogs, in all of which a part of the tendon was removed and replaced by silk suture, the nearest approach to normal being in those cases in which new tendonous tissue had started to form, rather than fibrous tissue.

The Causes of Failure in Tendon Grafting.—Dr. David Silver of Pittsburg attributed these failures to improper selection of cases, and errors in planning and executing the operation, and stated that the operation for its successful performance required great dexterity and accurate technic.

Fractures of the Head of the Radius.—Dr. T. Turner Thomas of Philadelphia read this paper, showing photographs, both of experimental and other fractures, and the difficulty in some instances of detecting the fracture, even by the *x*-ray.

The paper was discussed by Dr. William L. Estes of South Bethlehem, who remarked upon the unusual number of cases of so rare a disease, and closed by the author.

Cleft Palate.—Dr. Henry R. Wharton of Philadelphia stated that the best time to operate was from three to four years, all adenoids, enlarged tonsils, and nasal catarrh having been removed prior to the operation, in order to prevent infection.

This paper was discussed by Drs. John H. Gibbon, John H. Roberts, G. Hudson Makuen, and T. Turner Thomas of Philadelphia.

Third Day—Thursday, September 13.

Address in Surgery.—Dr. Otto C. Gaub of Pittsburg delivered this address, considering particularly the occurrence of hemorrhages in the scalp (dural and intradural), thorax (intrapulmonic and extrapulmonic), and abdomen.

Injuries of the Thoracic Cavity.—Dr. Geo. W. Wagoner of Johnstown read this paper, considering (1) the conditions affecting the walls, and (2) the conditions affecting the abdominal contents. He insisted upon the principles of surgical cleanliness, the removal of destroyed tissue, enlargement of the wound, drainage, disinfection, and rest.

Foreign Bodies in the Larynx.—Dr. Frank Alleman of Lancaster read this paper, in which he considered in detail the etiology, symptomatology and diagnosis (which should be assisted by digital and laryngoscopic examination and the *x*-rays), progress and treatment.

Abscess of the Lung.—Dr. William L. Rodman of Philadelphia read this paper. He stated that, with the exception of cases following influenza, there was usually complex infection. He did not favor exploratory operation, unless immediately to be followed by a radical one, if necessary.

Empyema in Children.—Dr. John H. Jopson of Philadelphia reported a series of cases ranging in age from ten months to thirteen years, and urged prompt diagnosis and careful after-treatment as essential factors.

The Treatment of Pleural Effusions.—Dr. Edward Martin of Philadelphia stated that frank streptococcic infection offered better chances for recovery than latent pleural effusions. He described in detail the method of operation; the puncture in the absence of complications

should be made in the midaxillary line in the sixth interspace.

Surgery of the Thoracic Cavity.—Dr. JOHN C. O'DAY of Oil City considered the various conditions, and the operations therefor, including pneumonectomy, which he believed had a field in suitable cases, and in the treatment of foreign bodies, etc., the *x*-ray.

Dr. JOHN B. ROBERTS of Philadelphia deprecated the practice of inverting the patient in cases of foreign bodies in the respiratory tract, and recommended in cases of broken ribs that the patient be gotten out of bed as promptly as possible, in order to prevent hyperstatic pneumonia and kindred conditions.

Dr. JOHN H. GIBBON advocated rib resection in cases of empyema, even in young children.

Dr. B. FRANKLIN ROYER of Philadelphia reported a case of foreign body in the trachea, which had been sent to the Municipal Hospital, supposed to be a case of diphtheria, the mistake not being discovered until the time of the operation.

These papers were further discussed by Drs. Israel Cleaver of Reading, Theodore B. Appel of Lancaster, Ernest Laplace of Philadelphia, George W. Guthrie of Wilkesbarre, P. Y. Eisenberg of Norristown, Lowell M. Gates of Scranton, and Enfield of Bedford.

The Roentgen Treatment of Tuberculous Glands.—Dr. GEORGE C. JOHNSTON of Pittsburg recommended the application of the *x*-rays as a postoperative measure after complete extirpation of malignant growths, and contrasted this treatment with radical operation.

Surgical Tuberculosis.—Dr. GEORGE W. GUTHRIE of Wilkesbarre stated that in its primary stages tuberculosis was local, and recommended radical removal of the infected gland wherever possible, reporting a number of cases in which early operation had proved effective.

The Clinical Significance of the So-Called Acute Stages of Bone Tuberculosis.—Dr. H. AUGUSTUS WILSON of Philadelphia stated that bone tuberculosis is essentially a chronic insidious process, ad the phenomena heretofore known as acute stages are avoidable sequelæ, and advocated that the conditions be classed where they belong among the complications of the diseased process to be met by appropriate treatment whenever they occur.

These papers were discussed by Drs. John H. Gibbon and Ernest Laplace of Philadelphia, David Silver of Pittsburg, and William L. Estes of South Bethlehem, all of whom recommended early diagnosis and extirpation of the foci of the disease, if possible.

Dr. ISRAEL CLEAVER of Reading reported a case which he had operated on about two years ago with the expectation of finding an ovarian cyst, but which, on opening the peritoneum, was found to be diffused perineal tuberculosis. The operation was formed two years ago, following which the woman made a good recovery, and is now in a healthy condition.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

LA MÉLANCOLIE. ÉTUDE MÉDICALE ET PSYCHOLOGIE. By RENE MASSELON. 12mo, 284 pages, flexible muslin. Felix Alcan, Editeur, aPris. Price 4 fr.

PROGRESSIVE MEDICINE. Vol. VIII, No. 2. Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LANDIS, M.D. 8vo, 368 pages, illustrated paper. Lea Brothers & Co., New York. Price $6.00 per annum.

AMERICAN PRACTICE OF SURGERY. Edited by JOSEPH D. BRYANT, M.D., and ALBERT H. BUCK, M.D. Volume I., 4to, 818 pages, illustrated, muslin. William Wood & Co., New York. Price, muslin, $7.00; brown leather, $8.00, and extra half-levant morocco, $9.00.

DAS PROBLEM DER SYPHILIS UND KRITISCHE BETRACHTUNGEN UBER IHRE BEHANDLUNG. By Prof. Dr. O ROSENBACH Second enlarged edition. 8vo, 164 pages, paper. Verlag von August Hirschwald, Berlin. Price, 3M.60.

TECHNIQUE DU TRAITEMENT DES TUMEURS BLANCHES By Dr. F. CALOT. 8vo, 272 pages, illustrated, paper. Masson et Cie., Editeurs, Paris. Price, 7 fr.

LE SIGNE DE LA MORT RELLE EN L'ABSENCE DU MÉDECIN By Dr. ICARD. 12mo, 292 pages, illustrated, paper. A. Maloine, Editor, Paris. Price, 4 fr.

GYNECOLOGY. (Vol. IV. of the Practical Medicine Series.) Edited by EMILIUS C. DUDLEY, A.M., M.D., and C. VON BACHELLÉ, M.S., M.D. 12mo, 227 pages, illustrated, muslin The Year Book Publishers, Chicago. Price, $1.25.

OBSTETRICS. (Vol. V., The Practical Medicine Series.) Edited by JOSEPH B. DE LEE, A.M., M.D. 12mo, 256 pages, illustrated, muslin. The Year Book Publishers, Chicago. Price, $1.25.

A NON-SURGICAL TREATISE ON DISEASES OF THE PROSTATE GLAND AND ADNEXA. By GEORGE W. OVERALL, A.B., M.D. 12mo, 238 pages, illustrated, muslin. The Rowe Publishing Co.

SPENCER MICROSCOPES AND ACCESSORIES. Microtomes. Bacteriological Apparatus, and Laboratory Supplies. Spencer Lens Company, Buffalo, N. Y.

ELEMENTS OF GENERAL CHEMISTRY, WITH EXPERIMENTS By JOHN H. LONG, M.S., Sc.D. Fourth Edition. 8vo, 443 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.50.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By JOHN J. REESE, M.D. Seventh Edition. 8vo, 656 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $3.00.

CLINICAL DIAGNOSIS. By CHARLES P. EMERSON, A.B., M.D. 8vo, 641 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. ARMY. Second Series, Vol. XI. Mo-Nystrom. 4to, 858 pages, muslin. Government Printing Office, Washington.

REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR ENDING JUNE 30, 1904. Volume II., 8vo, 1,303 pages, muslin. The Government Printing Office, Washington, D. C.

HISTORIC NOTES AND CANADIAN MEDICAL LORE. Lecture Memoranda of the British Medical Association, Toronto, 1906. 16mo, 200 pages, illustrated, leather. Burroughs Wellcome & Co., London, Eng.

CLINICAL BACTERIOLOGY AND HÆMATOLOGY FOR PRACTITIONERS. By W. D'ESTE EMERY, M.D., B.Sc. 8vo, 240 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

HANDBUCH DER SAUERSTOFFTHERAPIE. Herausgegeben von DR. MED. MAX MIQHAELIS. 8vo, 551 pages, illustrated, paper. Verlag von Aug. Hirschwald, Berlin, Germany.

BEITRAGE ZUR KLINIK DER TUBERKULOSE. Herausgegeben von DR. LUDOLPH BRAUER, Band VI., Heftl. 4to, 140 pages, illustrated, paper. A. Stuber's Verlag (Curt Kabitzsch) Wursburg. Preis, M.5.

THE PROPHYLAXIS AND TREATMENT OF INTERNAL DISEASES. By FREDERICK FORCHHEIMER, M.D. 8vo, 652 pages, muslin. D. Appleton & Co., New York City. Price, $5.00 net.

DIET AND DIETETICS. By A. GAUTIER, Edited and Translated by A. J. RICE-OXLEY, M.A., M.D. 8vo, 552 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

DEPARTMENT OF NEUROLOGY, HARVARD MEDICAL SCHOOL. Contributions from the Massachusetts General Hospital, the Boston City Hospital, the Long Island Hospital, and the Neurological Laboratory, Volume I. 8vo, 237 pages, illustrated, paper. The Fort Hill Press, Boston, Mass.

THIRTY-SIXTH ANNUAL REPORT OF THE SECRETARY OF STATE ON THE REGISTRATION OF BIRTHS AND DEATHS, MARRIAGES AND DIVORCES IN MICHIGAN FOR THE YEAR 1902. GEORGE A. PRESCOTT, Sec. of State. 8vo, 212 pages, muslin. Wynkoop, Hallenbeck, Crawford Co., State Printers, Lansing, Mich.

TRANSACTIONS OF THE ASSOCIATION OF HOSPITAL SUPERINTENDENTS, 7th Annual Conference. Volume VII. 8vo. 306 pages, illustrated, paper. Published by the Association.

AIDS TO PHYSIOLOGY. (Students' Aids Series.) By PEYTON T. B. BEALE, F.R.C.S. Eng. 16mo, 239 pages, illustrated, muslin. William Wood & Co., New York. Price $1.25.

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State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Nov.	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	January	7
Arkansas*	J. P. Runyan, Little Rock	Little Rock	October	9
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	January	1
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Nov.	13
Delaware	P.W.Tomlinson, Wilmington	Dover	Dec.	11
Dis. of Col'bia	W.C.Woodward, Washington	Washington	October	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	October	17
Georgia	E. R. Anthony, Griffin	Atlanta	October	9
Idaho	J. L. Conant, Jr., Genesee	Lewiston	April	2
Illinois	J. A. Egan, Springfield	Chicago	October	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October	23
Iowa	J. F. Kennedy, Des Moines	Des Moines	December	11
Kansas	T. E. Raines, Concordia	Topeka	October	9
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	October	19
Maine	Wm. J. Maybury, Saco	Portland	Nov.	13
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	November	13
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	October	9
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	January	7
Mississippi	J. F. Hunter, Jackson	Jackson	October	9
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov.	26
Montana*	Wm. C. Riddell, Helena	Helena		
Nebraska	Geo. H. Brash, Beatrice	Lincoln	Nov.	7
Nevada	S. L. Lee, Carson City	Carson City	Nov.	5
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	October	16
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	1907
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	January	1
Ohio	Geo. H. Matson Columbus	Columbus	Dec.	11
Oklahoma*	J. W. Baker, Enid	Guthrie		
Oregon	B. E. Miller, [illegible]	Portland	January	1
Pennsylvania	N. C. Schae[illegible] Ha[illegible]	Philadelphia Pittsburg	Dec.	—
Rhode Island	G. T. Swarts, Providence	Providence	January	3
S. Carolina	W. M. Lester, Columbia	Columbia	June	1907
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May,	1907
Texas	T. T. Jackson, San Antonio	Houston	October	16
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	January	7
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Clarksburg	Nov.	13
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne	December	5

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Nebraska.—This State will not grant any license on the reciprocity basis unless the applicant shall have been in active practice in the State by which his license is endorsed for at least one year immediately preceding.

New York.—During the year 1905 622 graduates of medical colleges of this State were examined by the different State boards of the country. Of this number 512 were examined in this State, and 90 in other States. Of the 512 examined in New York ten failed; ten also failed out of the 90 who sought their fortunes in other States. Of the various colleges in the State, Albany, Cornell, the New York Woman's Medical College, Syracuse, and Buffalo passed all their graduates. The College of Physicians and Surgeons of New York had 3.6 per cent. of failures in this State, and 6.7 per cent. of failures in other States. From the Eclectic Medical College all passed in this State, and all failed in other States. Long Island College Hospital had 5.3 per cent. of failures in this State, and 28.6 per cent. of failures in other States. The New York Homeopathic Medical College passed all applicants in this State, and had 33.3 per cent. of failures in other States. The University and Bellevue Hospital Medical College also passed all candidates in this State, and had 6.7 per cent. of failures in other States.

Oregon.—At the July examination there were twenty-four applicants; nineteen of these were successful, and were licensed to practise.

Minnesota.—Eighteen physicians were licensed at the April examination, and sixty-nine at the examination held in June.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending September 29, 1906:

	Cases	Death
Tuberculosis Pulmonalis	367	151
Diphtheria	137	12
Measles	61	5
Scarlet Fever	41	3
Smallpox	1	—
Varicella	12	—
Typhoid Fever	114	19
Whooping Cough	35	8
Cerebrospinal Meningitis	15	12
Malarial Fever	.....	.....
Totals	783	210

Deaths in Industrial Accidents.—According to the London *Labour Gazette*, out of every 10,000 work people about seven are killed in the year by industrial accidents. In the case of seamen the number killed per 10,000 is about sixty-two.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 29, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Indiana, South Bend	Sept. 16–22	1	..
Kentucky, Lexington	Sept. 8–15	1	..
Louisiana, New Orleans	Sept. 8–15	7	6 Imported.
Ohio, Cincinnati	Sept. 14–21	1	..
Pennsylvania, Altoona	Sept. 15–22	1	1

YELLOW FEVER.

Cuba, Habana	Sept. 27	2	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Aug. 4–18	8	..
Brazil, Bahia	Aug. 11–18	0	..
Pernambuco	Aug. 1–15	..	3
Rio de Janeiro	Aug. 12–Sept. 2	10	..
Chile, Antofagasta	July 29–Aug. 12	39	4
Coquimbo	July 29–Aug. 12	30	1
Talcahuana	July 29–Aug. 12	..	Present.
India, Bombay	Aug. 14–28	..	4
Calcutta	Aug. 4–11	..	2
Karachi	Aug. 12–26	5	2
Madras	Aug. 4–17	..	3
Russia, Moscow	Aug. 18–25	2	.
Odessa	Aug. 25–Sept. 1	0	..
St. Petersburg	Aug. 18–25	2	1
Siberia, Vladivostok	July 28–Aug. 4	1	..
Spain, Barcelona	Sept. 1–10	..	8
Seville	Aug. 1–31	..	31
Turkey, Constantinople	Aug. 26–Sept. 9	.	2

YELLOW FEVER.

Ecuador, Guayaquil	Aug. 1–31	..	9
Mexico, Merida	Sept. 2–15	5	4
Tuxtepec	Sept. 2–15	4	5
Vera Cruz	Sept. 2–15	2	1

CHOLERA—INSULAR

Philippine Islands, Manila	July 28—Aug. 4	38	30
Provinces	July 28–Aug. 4	731	534

CHOLERA—FOREIGN.

India, Bombay	Aug. 14–28	..	89
Calcutta	Aug. 4–17	..	8
Madras	Aug. 4–17	..	19
Rangoon	Aug. 11–18	.	1

PLAGUE—INSULAR.

Hawaii, Honolulu	Aug. 18–25	1	1

PLAGUE—FOREIGN.

Brazil, Rio de Janeiro	Aug. 12–Sept. 2	8	4
Pernambuco	Aug. 1–15	..	2
Egypt, Alexandria	Aug. 28–29	2	4
Suez	Aug. 24–25	..	2
India, General	July 28–Aug. 11	2,321	167
Bombay	Aug. 14–28	..	61
Calcutta	Aug. 4–11	..	2
Karachi	Aug. 12–26	10	8
Rangoon	Aug. 4–18	..	205
Japan, Formosa	Aug. 10–20	3	3
Peru, Lima	Aug. 18–25	7	4
Mollendo	Aug. 18–25	1	1
Paita	Aug. 18–25	3	2

Medical Record

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Original Articles.

THE BATH TREATMENT OF TYPHOID FEVER OF PRIVATE PRACTICE.*

By SIMON BARUCH, M.D.,

NEW YORK

If the choice of title of this paper devolved upon myself it would read "The Bath in Typhoid Fever." It has long been my contention that the expression "treatment of fever" should be relegated to the past, because the modern physician no longer treats the fever, but the patient.

In the management of a case of typhoid fever the chief aim of the well-informed clinician is the enhancement of the patient's resisting capacity to the toxemia which menaces his life. Abundant observation at the bedside made by many physicians in hospital and private practice in various countries has established the fact that the chief lethal element in this disease arises from toxemia, and that in proportion to the intensity of this toxemia is the prognosis of each case; the extent to which the vital organs are affected by the toxic agents set free in the blood by the pathological factors introduced into the system governs the outcome of the case. The damage sustained by the nerve centers which preside over the life-sustaining functions of the organism is the measure by which we are forced to gauge the mildness or severity of a case of typhoid fever.

In the mild cases the action of the toxic material is as obviously upon the nervous system as it is in the more severe types, as is evident in the apathy which finds expression in headache, dullness of intellect, shallow respiration, diminished pulse tension, and depreciated secretory and excretory action. When the system is overwhelmed by these toxic agents the manifestations pointing to involvement of the central nervous system are more pronounced: delirium, coma vigil, subsultus tendinum, cyanosis, elevated temperatures, stupor, cardiac failure indicated by feeble, dicrotic, and rapid pulse; hypostatic congestions, sleeplessness, renal insufficiency with its resulting diminution in the quantity and toxicity of the urine—these point unerringly to a seriously crippled nervous system. This is the broad gateway leading to the dissolution of the vital machinery. To inhibit the latter, we must sustain, refresh, nourish the former; whenever and wherever the nervous system is threatened the medical attendant must be alert and ready to meet the attack. This is the lesson of the bedside as I have learned it from many a hard-fought battle with this, alas but too prevalent, disease. I have learned it sadly from many a defeat, and I have learned it gladly from many a victory.

How much the bath has contributed to my victories during the past twenty-five years of practice and how much previous unfamiliarity with this remedial agent has led to defeat is so deeply engraved upon my mind that I would be derelict to duty as a physician were I to permit any occasion for expression of the plain and incontrovertible experience it has been my privilege to gather in hospital and private practice to pass. That I was long a sceptic on the value of the bath in typhoid fever may not seem a correct statement of fact to those who have so often heard me in these halls as a persistent and ardent advocate. My conversion was not sudden, but an evolution of bedside observation. Well do I remember a note from the lamented Brand of Stettin in which he twitted me with the statement I had made in the Academy of Medicine that "the Brand method may be adapted to the robust German soldier, but that the American would not be a favorable subject for so heroic a measure."

It is an erroneous habit of the physician to trust entirely to experience in accepting a therapeutic agent. Hippocrates himself has said "Art is long, life is short, judgment difficult, experience fallacious." The dark ages of medicine were the times when experience alone was the guide to practice; the brilliant achievements of modern medicine are coeval with the rise and progress of enlightened pathology, and a therapeusis based upon the latter and upon a correct rationale of the action of the remedies applied.

So long as the principal testimony in favor of the bath was derived from the statements of the empirics who boasted of their experience with water, it failed to appeal to my judgment. When, however, Brand demonstrated that the action of the bath in typhoid fever was based upon a rationale derived from its physiological action as a thermic and mechanical irritant—a rationale first insisted upon by Winternitz and his school—and when this clear rationale was substantiated by large statistical material, the evidence became overwhelming that the bath constituted a most important therapeutic agent in this disease.

Although the cold bath had long been applied in fevers with more or less success (usually the latter), it remained for Ernst Brand to insist that the cold bath was not valuable because of its antithermic effect, but by reason of its action as a sustaining agent of the crippled nervous system, and that when properly executed and *applied early* the bath was a prophylactic against all the lethal conditions which existed in typhoid fever. It was Brand who insisted, despite strongest opposition and scepticism, that treating the lethal complications arising in this disease symptomatically was a fatal error, to which the enormous mortality of the disease may be traced quite often. It was Brand who taught the fatal fallacy of treating temperature elevation by the bath or otherwise: it was he who taught us the inestimable value of friction during the bath. For these and

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other reasons upon which the enormous beneficence of the Brand method and its superiority over all bath methods is based, for the persistence, earnestness, courage, love of his kind, for the polemic ability and logical brilliancy with which he battled for his method for thirty years, Ernst Brand is entitled to be regarded as one of the benefactors of mankind.

While I still regard this well-thought-out and practically-demonstrated method as the ideal treatment of a large proportion of cases of typhoid fever in private practice, and while I still believe that this method is more applicable in private than in hospital practice, by reason of the latter usually being admitted too late to obtain its chief advantage—early application—I am free to confess that there are very many cases in which a strict execution of this systematic bath method is impossible or not indicated. If the principles of the method are understood and followed, any method of cold bathing may be usefully applied. What are these principles?

It is a trite and long-accepted fact in physiology that cold is an irritant to the sensory terminals in the skin, and that, like all irritants, when applied in mild form, it stimulates these sensory terminals, and when applied in more intense form it depresses, and that the stimulation or depression evoked by cold is conveyed to the central nervous system, and thence reflected upon the organs which derive their functionating capacity from the latter. A brief application of cold water to the skin acts as a stimulant; a prolonged application acts as a depressant; both effects being in exact proportion to the degree of cold and to the extent of surface attacked. The truth of this physiological principle, and the correctness of the practice based upon it, is daily exemplified and clearly demonstrated in the familiar management of the still-born infant. In a mild case simple sprinkling with moderately cold water suffices to arouse the flagging vitality; in more pronounced cases a dip into cold water restores the almost inanimate creature; and, if these measures are inadequate, we resort to still colder water, or we render the skin more sensitive to the latter by alternate dipping into water of a high and low temperature. The resultant effect of these applications is one of the first lessons the medical student learns in physiology and therapeutics, and yet *mirabile dictu* their self-evident application in the management of the typhoid fever patient is of comparatively recent date, and still calls for frequent insistence. For twenty years have I emphasized that these trite physiological principles are the basis, and form the rationale of all water treatment in all diseases in which it is indicated. It is not men, nor is it methods, that I advocate, but principles, accepted physiological principles. Applied to the management of the disease under consideration to-night, what effects are evoked by the cold bath? Is so heroic a measure expedient or necessary when milder measures have proved effective? These are important questions, and they are answered by strict application of the principles involved and briefly recited above.

Granted that they are correct, and that the reflex stimulating effects of cold water elicited in the still-born infant and its similar effect in syncope are undeniable as they are in that other and essentially different toxic depression of the nervous system encountered in opium poisoning, it cannot be difficult to appreciate how the stimulating and sustaining effect of properly graded or dosed baths, or other water procedures, arouse the blunted nerve centers in typhoid fever, how the whole machinery of the depreciated organism is thereby revived, how the apathetic countenance brightens, the eye resumes its lost luster, how the breathing is deepened and the blood thus better oxygenated, how the heart, enfeebled by the toxic depression of its nerve supply, responds under the refreshing impulses, and how the secretions and excretions are thus revived.

There are other equally important results arising from the local thermic stimulation of the cutaneous arterioles, enhanced as they are by the mechanical stimulation of friction, which must never be omitted in any cold application.

It has been shown by several laboratory experiments that the Eberth bacillus not only exerts its baneful depressing influence upon the central nervous system, but that it manifests a somewhat specific depreciating and enfeebling influence upon the peripheral arterioles. To the latter may be ascribed that relaxed and sluggish condition of the cutaneous arterioles which is manifested in the deadly pallor of the skin of the trunk, in the feeble and dicrotic and compressible pulse, in the hypostatic congestions, ulcerations of Peyer's glands, etc. These are the result of more or less cardiac inadequacy; the resistance at the periphery being diminished, the vasomotor system is crippled, thus suffering at both ends. The heart is called upon to compensate for this failure at the periphery by increased action; the pulse is accelerated, but the arteries do not fill, as is but too evident in the compressibility of the radial artery.

In mild cases the self-regulating machinery of the organism readjusts itself; in severe cases heart failure, with all its dire effects, ensues; stimulants fail because the nerve centers have lost their responsive capacity, and the physician stands appalled in this trying emergency; too often is he helpless to rescue the patient who, perhaps, in the earlier stages has been promising of better results.

In such emergencies I have long ago asked myself the question, "Cannot these fatal heart failures be prevented?" Brand has answered this question in the affirmative. The ideal cold bath devised by him is a preventive measure, and not a symptomatic one. Cold baths must not be regarded as cooling procedures—a fallacy arising from regarding hyperpyrexia a prominent cause of death in typhoid fever. The latter has been proven to be due to the toxemia. *Cold baths prevent lethal complications by reason of their sustaining effects upon the central nervous and circulatory systems.* Let this truth become the ruling idea in typhoid fever, and let the accepted truth that therapeutic results are in proportion to the dosage of the remedial agent be added, and the aggregate outcome of this much-to-be-desired consummation will be a rational application and consequent cessation of disputes about modes of bathing. Whether the ideal Brand bath is to be adopted in the concrete case, or some milder method, whether so-called sponging, ablution, affusion, compresses, packs, whole baths or half baths, brief or prolonged, higher or lower temperatures are to be applied, must depend upon the individual case.

There must be reaction, that is, refreshment, and not depression, following each application; the sum total of these must inure to the sustenance of the depreciated nerve centers, and they must be adapted to the case with the same intelligence as are diet and medication. By food, nutrition is sustained to prevent starvation; by baths, nerve force must be sus-

tained to prevent exhaustion. Both are prophylactic measures to enhance the patient's resisting capacity. The strict Brand method has proven its efficiency by the largest and most reliable statistics extant in medicine, and it is based upon a correct rationale; for this reason it became the leading treatment in hospitals. It has not remained popular, because its splendid reduction of mortality was obtained first in military hospitals, in which its most important elements—early application and systematic execution—were not difficult. When this method was applied on a large scale in civil hospitals, the same results were not attained, because in the latter typhoid cases are usually admitted after the fifth day, oftener after the first or second week. Nevertheless, the cold bath has proven an efficient aid, changing the mortality statistics and affording such comfort to the physician, who modified it in accordance with the stage of the disease, which, as is well known, changes the responsive capacity of the patient. This is the reason why the Brand bath has fallen into desuetude in Germany. Its strict application is not adapted to the latter stages of the disease, unless it has been used with good results in the early stages. And this is the reason why this bath is better adapted for private than for civil hospital practice.

If the principles here enunciated regarding the physiological action of the cold bath, and its prophylactic nerve-refreshing and heart-sustaining effect are borne in mind by the physician, he will begin with mild measures—ablutions, affusions, baths of 90° F. reduced every four hours one or more degrees, until the temperature of the Brand bath, 70° F., is reached. And if the bath is administered with friction for fifteen minutes, and repeated only during the waking hours every four hours; in fact, if the rules laid down in works on Hydrotherapy were studied and followed as are the rules of other therapeutic agents, there would remain no reason for disputing the practical results of the bath treatment in typhoid fever.

Hotel Majestic

THE PATHOGENESIS AND THERAPEUTICS OF CANCER.

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The study of cancer, as we know, is one of growing importance, and to which it is impossible to devote too much careful attention. In the endeavor to do justice to so momentous a subject, it is incumbent upon us to make ourselves intimately acquainted, not only with its etiology, but with those diagnostic features which differentiate it from affections presenting a somewhat similar appearance to the eye and touch. Now this is not always quite so simple a matter as some may imagine, and more especially in the initial stage of the disease. For example, several instances have come under my observation during the past few months where scirrhus of the mamma has been *stated to exist—diagnosed* would be an improper term—and where immediate operation had been urged by well known surgeons, but, on further examination, the tumor proved to be a simple adenoma, and readily yielded to a much more rational line of treatment. It is not always wise, therefore, to assume that, because a tumor appears in an organ which is known to be susceptible to cancer, it is necessarily of a malignant type. There may be a possibility certainly—though the probability is remote—that, later on, it may develop malignancy. It is, I am sure, because this mistake in diagnosis is so frequently made that we hear occasionally of nonrecurrence after operation. On the other hand, when the diagnosis has proved to have been correct, and the tumor to be cancer, recurrence is inevitable, and, I venture to add, it will be difficult to contest this assertion, for the cogent reason that it is a fact. How can it be otherwise, when we know that in the majority of instances an injury is the *exciting* cause of cancer—the predisposing cause being so far latent in each instance—and when we realize that a much greater injury is inflicted by the mutilation of the parts, which is necessarily the accompaniment of an operation of such magnitude? Is it not very suggestive that the recurrence invariably manifests its presence primarily in the weakest structure, viz., the cicatrix, and thence radiates to the enfeebled tissues in its immediate neighborhood? Having admittedly such ample evidence of the mischief the knife inflicts in malignant disease, and knowing that in no instance can it hold out more than the remotest prospect of conferring any lasting benefit, but on the contrary shortens life and aggravates suffering, how can any right-thinking man deceive both himself and his patients by having recourse to it? No; our line of duty points to our employing unremitting effort to discover a more rational method of dealing with this formidable disease. In our endeavor, then, to attain this desired end, it is essential in the first instance that we devote the most careful study to its natural history.

Doubtless, without fear of contradiction, we may now assume that cancer is not due to a parasite of one kind or another, as so many, only theoretically however, have persistently maintained. This theory, I have no hesitation in averring, has been exploded by authorities whose conclusions are based upon much more substantial foundations than the advocates of the microbic or parasitic theories are entitled to build upon. We, therefore, are left no resource but to search for an explanation of the incidence of cancer in hitherto untrodden fields of investigation. In this we must of necessity be guided to a great extent by noting the pathogenic conditions which, as far as we can judge, lead up to its development. We shall require also carefully to observe those surroundings which we know obtain where the predisposition to cancer is absent. We are aware, for instance, of the very striking circumstance that it is unduly prevalent in civilized nations, and still more so in proportion to the extent that luxury and self-indulgence prevails. Metchnikoff says that "the refinements of civilization have made the demands on man's animal frame too heavy to meet, and to this we may trace at least most of the ills man is heir to." Among savages cancer has been proved to be nonexistent. We cannot, therefore, but admit that our mode of life exercises a considerable influence in its causation. Moreover, in wild animals it is unknown, yet it would appear to assert its presence in animals, and even in fish, whose lives are spent in the neighborhood or under the influence of man. That the tumors in these instances are identical with cancer in the human subject I am inclined to doubt, and for this reason, that in store-fed cattle for example, the disease designated as cancer—whatever be its nature—does not seem to affect the nutrition of the animal, whereas in man it always does so very markedly. I have known cases where attenuation was so rapid that the patients lost flesh at an alarming rate. One case is present to my mind where the loss of weight was three stones (42 pounds) in as many months. Again, we should not lose sight of the fact that the growths which develop in animals occur only when

they are overfed, and upon material which differs substantially from their natural food. This applies equally to fishes in a river or estuary into which all sorts of extraneous matter is emptied, much of which is consumed by the fish. This being foreign to their normal requirements, and therefore unsuitable to them as healthy nutriment, and moreover being superabundant, will eventually act detrimentally upon their organs of digestion and assimilation, thus upsetting their physiological equilibrium, and so give rise to abnormal cell metabolism.

We seem impelled, therefore, to the inference at all events, if not to the conclusion, that the mode of life plays a most important rôle in the production of cancer. That it is a disease quite independent of any specific agent from without is beyond dispute. We have no choice, therefore, but to search for its causation within the body itself, and endeavor to ascertain in what consists the influences which so interfere with normal cell metabolism as to enable certain cells to assume a character altogether at variance with that of the normally conducted cells from which they sprung, and of which they are the direct descendants. With this change they would appear to have disassociated themselves and severed their allegiance to those physiological laws which regulate the metabolic phenomena characteristic of normal cell life. Ultimately they deevlop a morbid influence which is inimical to the integrity of the tissue from which they emanate, and by which they are encompassed.

Having separated themselves from those laws which control and govern healthy metabolism, they eventually become a law unto themselves, and establish a potency quite foreign to that of healthy cells. Their instincts, it would appear, have undergone a complete metamorphosis, for, in place of deriving nourishment from a normal source, they commence to prey upon their neighbors, and, devouring these, replace them by their own voracious progeny, which continue to increase in numbers at an alarming rate, involving successive areas, and, by the lymphatic channels, extend their sphere of influence, establishing new centers of disease in neighboring glands and distant tissues. Meanwhile, the vile juices, which these cannibal cells throw off, contaminate the blood with their poison, when the conquest becomes complete.

Now arises the question: What are the predisposing causes which, if not suppressed or overcome in the initial stage of their activity, will eventually culminate in a calamity? Can they be restrained, and can they be conquered? I have no hesitation in replying in the affirmative to both questions. It is needless for me to enter fully into the pathogenesis and pathology of cancer at this time of day, seeing these subjects have been amply dealt with in my book, published three and a half years ago, but I will just touch upon one or two points of interest, which I am convinced bear to an important extent upon the pathogenesis of the disease.

The organs of the human body are capable of accomplishing only a limited amount of work, and though more elastic than an ordinary machine, yet, when persistently overtaxed, they are liable eventually to succumb; and especially will this prove to be the case if they are handicapped by certain important hygienic laws being continuously ignored; which laws, when in force, act as safety valves. If, for example, an individual—and there are many such—will persist in indulging too freely at the table, thereby habitually burdening the stomach with more work than it can efficiently and advantageously perform, the functional activity of the organ will, as a matter of course, speedily be reduced to a dangerous extent, when a larger proportion of the ingested, but not digested food, will find its way into the colon in a decomposed and highly offensive condition. If the effete matter is discharged without delay, possibly little mischief beyond a slight amount of discomfort may result. On the other hand, however, if the colon and rectum, from lack of expulsive power—and this is, as a rule, due to neglect—should be so tolerant of this fetid material as to permit of its retention for a longer period than is desirable, then absorption of toxic material is certain to take place, resulting in contamination of the blood stream, and deterioration of its essential constituents. The consequence is that every physiological sequence is liable to occur in an erratic manner, and the various organs are rendered incapable of remaining true to their vital relationship with those organs and tissues which are subordinate to them. Especially does this condition of the blood seem to act prejudicially upon the thyroid gland, which, we know, in its active condition exercises a most important influence upon cell metabolism. Now, if this organ for a lengthened period continues to receive its blood supply from a vitiated source, it not only loses its functional activity, but gradually undergoes an atrophic change, and consequently is liable to become permanently disabled; and it has been demonstrated that atrophy, or at least a diminution in size of this gland, is, as a rule, coincident with the advent of cancer.

Now, from my point of view, if a person is a gross feeder, and more so if he indulges to excess in animal food, and if there is superadded a constipated habit, which has such a pernicious effect upon the thyroid gland, we may conclude there are present the three most important factors whose combined influence is sufficient to provoke a tendency to the development of cancer. "Recent research has shown that the bacteria of the human intestine increases at the rate of 128,000,000,000,000 each day, the greater part being found in the large intestine." Can we be surprised, then, that, with such a poison factory within him, one's blood will become sadly vitiated and the normal processes of the economy be injuriously affected if constipation is coexistent? The longer this offensive material is retained the more obnoxious it will become, and its toxic effect increased pro rata.

Now it has been demonstrated that the thyroid gland exerts an inhibitive influence upon this toxic matter when absorbed, so it is not difficult to comprehend how very serious a menace to health constipation will become if the vital force of this gland is reduced. The first principle, then, we must inculcate, when the treatment of cancer is under consideration, is to insist upon a *complete* daily evacuation of the bowels. Second, the diet must be restricted to the actual requirements of the body and the capabilities of the digestive organs; butcher meat must be barred and a vegetarian diet be relied upon to a large extent. Thirdly, the defective action of the thyroid gland must be supplemented by the administration of the gland of healthy animals, or the active principle of the gland, at least three times daily. Fourthly, as saccharomyces are invariably present in the blood in cancer subjects, and as these act injuriously in inducing fermentive changes upon the absorbed enterotoxins, they should be destroyed by giving ten to fifteen grains of salicylate of sodium thrice daily along with a thyroid preparation.

If the uterus is the seat of disease, the parts should be kept scrupulously clean by douching, after which a tampon, saturated in a 10 per cent. solution

of ichthyol in glycerin, should be introduced, and renewed every twenty-four hours for a week or two, and afterwards at longer intervals.

In scirrhus of the mamma, I have seen considerable assistance derived by the inunction of an ointment of cocaine and morphine muriate, each 10 grains in half an ounce each of lanolin and vaselin. A piece about the size of a pea should be rubbed well in over the tumor and surrounding skin night and morning.

[illegible]

THE OPERATIVE TREATMENT OF ACUTE GONORRHEAL EPIDIDYMITIS.

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[illegible]

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When the earlier cases, here reported, were operated upon, I knew that puncture of the epididymis and tunica albuginea had been practised for the relief of pain in these conditions, but was unaware of the performance of any open operation for this complication of gonorrhea. Upon investigating the literature of the subject, however, I found that incision of the tunica albuginea had been practised some fifty years ago for orchitis. Mr. Smith[1] states that Pirogoff, in 1852, punctured the testicle for orchitis. (I may say here that most of the older writers seem to make no distinction between orchitis and epididymitis.) Mons. Vidal de Cassis was the first to make an incision through the tunica albuginea and received the sanction of Mons. Ricord. In 1863 H. Smith reported, in the *Lancet*, that he had performed the operation, resorting to it because of an erroneous diagnosis of abscess of the testicle, the result being a discharge of blood and serum, but no pus, with complete relief of pain, which led him to practise it on the incredible number of 1,000 cases, reserving it only for the severer forms. This statement led to a ludicrous discussion between Mr. Smith and Mr. Holmes, the latter taking the position adverse to operating, all of which appears in the *Lancet* of 1864. Watson and John Hunter seem to have been the first to regard the swelling due to gonorrhea as affecting both the testicle and the epididymis. And the former cited the anatomical analogy between the eye and the testicle as to its firm, fibrous, capsular covering. As iridectomy and puncture of the sclerotic coat was a well-recognized therapeutic measure, they concluded that puncture of the tunica albuginea was indicated. Macnamara[2,3] bears out Watson in this analogy by citing the great relief afforded glaucoma by puncture.

Puncture of the tunica vaginalis was recommended by Mr. Spencer Watson in 1867. In an experience of twenty cases, particularly when effusion was present, it seemed to give as much or more relief than puncture of the tunica albuginea. It is apparent after a careful examination of the literature, that it has been only in comparatively recent years that the involvement of the epididymis was recognized of more moment in gonorrheal infection than the involvement of the testicle.

Dr. W. T. Belfield[4] published a very interesting article, under the title of "Pus Tubes in the Male and Their Treatment." I will quote rather freely from his paper, as his experience and mine coincide very closely in a great many ways. He states that it is the general belief that pus rarely forms in gonorrheal epididymitis, but it is his opinion, and one in which I fully concur, that in a considerable proportion of the cases, where the tunica vaginalis contains fluid, and an edema of the skin appears, pus is present in the epididymis. In fact, in one of my cases, where there was no edema of the skin and only a slight hydrocele, pus, in which were numerous gonococci, was found after puncture of the epididymis. He regards the condition as quite analogous to pyosalpinx and recommends a similar treatment—surgical in character—making a good free incision into the globus minor to permit of free evacuation of pus and to allow drainage.

Baerman,[5] in the pathological study of twenty-eight cases, deduced some valuable conclusions, which are undoubtedly correct and which ought to throw much light on the future care of these cases. They are: (1) In a considerable proportion of cases of epididymis, abscesses are formed in the epididymis. (2) Suppuration is regularly followed by the appearance of hydrocele. (In my experience hydrocele has formed when no pus was demonstrable.) (3) Gonococci are found in foci in the epididymis years after the urethral infection occurred. (4) Early puncture is advised to save the canal from occlusion. (5) The hydrocele should be punctured to improve the circulation. (6) Incision and drainage of the infected epididymis should be more frequently practised.

Since becoming interested in this work I have endeavored to secure a testicle in a state of acute gonorrheal inflammation, but, to my great disappointment, have failed, and therefore I will have to rely on the excellent pathological reports of Monod and Terrillon in their book entitled "Traité des Maladies du Testicule et ses Annexes." These observers have deduced the following facts by their exhaustive experiments and pathological studies: (1) "In gonorrheal diseases of the testicle, the epididymis only is involved." From my limited experience this appears to be true, as there seemed to be no change in the testicle proper in any of my cases, and in one very severe case I punctured the tunica albuginea and observed an apparently healthy condition of the testicle.

(2) "There is a marked dilatation of all the tubes of the epididymis, which they believe to be due to the pressure caused by the infiltration of the inflammatory exudate into the connective tissue surrounding the tubules, resulting in more pressure at one point than another, and hence the obstruction produced causes a backing up of degenerated epithelial cells, pus, refractive granular material and spermatozoids." If Monod and Terrillon be correct in stating that the infiltration in the connective tissue of the epididymis causes the obstruction of the tubules in severe cases of epididymitis, then anything that will prevent or lessen this infiltrate is rational and justifiable. Even in the cases where pus is not found, the infiltration is certainly relieved by the puncture.

(3) "Such obstructions have been known to lead to a most distressing complication, namely, degeneration of the seminiferous tubules with resulting atrophy of the testicle." Therefore any operation that will rapidly relieve the tension in the early stage is a most important step in the right direction.

Experiments made by Monod, Terrillon, and Kocher to produce artificially the macroscopical picture of gonorrheal epididymitis, tend to show that the enlargement of the epididymis is due to the inflammatory exudate into the cellular tissue surrounding the tubules rather than to the changes which occur in the tubules themselves. After having dissected off the connective fibrous tunic from the cord and having made an opening at its upper

and anterior border, they fixed a cannula into the cellular tissue. Through the cannula they injected a weak solution of gentian violet. When the fibrous tunic had been sufficiently filled they saw that the induration characteristic of this special form was reproduced, and resembled an increase in size of the epididymis.

I have recently duplicated this experiment, precisely as described above, and present herewith the results by means of two drawings made from photographs.

Fig. 1.

Fig. 2.

Figure 1 shows the testicle, before injection, with the tunica vaginalis dissected off. The second illustration shows the same testicle after injection with a solution of gentian violet, the needle having been inserted through the fibrous covering of the epididymis in the regions of the globus major and minor. The encroachment of the epididymis upon the testicle is shown, and the picture certainly resembles the condition seen in a mild case of epididymitis. Of course, in a true epididymitis the infiltration is much greater than can be produced artificially.

I realize thoroughly that in epididymitis most cases will recover with only medical treatment, but judging from my own cases, limited in number, I do not believe that the severe cases will recover as rapidly or with as little apparent anatomical disorganization, when medical treatment alone is employed. Feeling this to be true, I have operated on only the severe cases coming under my care. Although my confidence in the operation is great, I do not feel I have as yet had sufficient experience to recommend operation in every case, but I believe there will be an increasing proportion to be treated surgically in the future.

The analogy between the two affections and the good results secured by opening and irrigating gonorrheal joints, suggested to me the open method of treating gonorrheal epididymitis. The operation employed by me is as follows:

The patient is prepared as for a major operation and then anesthetized. Cocaine is not practicable because of the pain occasioned in handling the parts after the initial steps. At the juncture of the swollen epididymis and testicle an incision 6 to 10 cm. in length, depending upon the amount of enlargement, is made through the scrotum down to the tunica vaginalis, which is opened at the juncture of the epididymis and testicle. After the serous membrane is opened all the fluid is evacuated and the enlarged epididymis examined through the wound. The testicle with its adnexa is delivered from the tunica vaginalis and enveloped with warm towels. The epididymis is then examined and multiple punctures made through its fibrous covering with a tenotome, especially over those portions where the enlargement and thickening is greatest. The knife is carried deep enough to penetrate the thickened fibrous capsule and enter the infiltrated connective tissue. When the knife is through the thickened covering of the epididymis a very marked lessening of resistance will be felt. If pus be seen to escape from any of the punctures, the opening is enlarged and a small probe inserted in the direction from which the pus flows. By this method I believe there is less danger of injuring the tubes of the epididymis than by cutting with a knife. After the probe is passed in, pus will be evacuated by light massage in the region of the abscess and a fine-pointed syringe is used to wash out the cavity with 1 to 1,000 bichloride of mercury, followed by physiological salt solution. The testicle is then restored to its normal position, and in every case the tunica vaginalis is thoroughly washed with 1 to 1,000 bichloride, followed by normal salt solution. The incision of the tunica vaginalis is lightly closed with a running catgut suture, a cigarette drain of gauze is then applied over the incision, the skin being brought together with a subcutaneous silver wire suture, the cigarette drain passing out at the lower angle of the wound. Silver foil and a sterile dressing are now applied and the part supported by a wide T bandage.

In every case in which I have operated fluid has been present in the tunica vaginalis, varying in amount from a few drams to two ounces; the larger the swelling the greater the amount of fluid. This fluid resembles that seen in gonorrheal joints, in that it is usually slightly blood stained and contains a varying amount of fibrous material in which are entangled a few leucocytes. The parietal layer of the tunica vaginalis is congested and that portion of the tunic covering the epididymis is intensely congested and seems to be the seat of small punctiform hemorrhages. In one case the whole of the body and globus minor was covered by a false membrane, almost like that of diphtheria, which left a bleeding surface on removal. This membrane is composed of fibrin, a few leucocytes, and cell detritus; no gonococci were demonstrable in the membrane, but were found in the pus collected by puncture of the epididymis. I believe this description is identical with that in gonorrheal inflammation of synovial membranes. Of the six cases operated on, in three no pus could be demonstrated, but in the tunica vaginalis of one of these gonococci were present. In three pus was obtained and in two of the latter cases gonococci were found.

On palpation the epididymis is very much thickened, being more marked in the region of the globus minor. Here it is of stony hardness and, on puncture, blood of almost tarry appearance will exude. The body is infiltrated in the same manner but not to the same degree. The globus major, in the cases operated on, appeared to be the most involved portion, next to the globus minor, and it is in this latter locality that I have found pus containing gonococci in two of my cases. In one case there was so much infiltration of the epididymis that the tunica vaginalis was incised at its juncture with the epididymis. The skin and subcutaneous tissue were dissected off the posterior aspect of the epididymis and punctures were made in this region with the expected exudation of blood and pus.

The relief seems to be just as great whether or not pus be obtained, and these results are, I believe, explained by the relief of tension obtained by the multiple punctures of the epididymis, the evacua-

tion of the fluid from the tunica vaginalis, and the drainage referred to in the operation. As has been heretofore stated, the cases operated upon have been of a severe type, with great pain, tenderness, and swelling; one of them, on admission to the hospital, was taking one-half grain of morphia every three or four hours with very little relief. Following the operation, every case was marked by instantaneous and permanent relief from pain, no anodyne being required. The second day after the operation the cigarette drain is removed and the wound redressed, when there is usually noted a small amount of ooze on the dressings. The drainage continues for from four to six days and in a week the wound is healed. The patients have, in every instance but one, been up and walking around, free from pain, by the seventh day. The remarkable feature is the rapidity with which the induration, not only of the epididymis but of the cord, disappears, it being much more rapid than by any other method known to me. The fall of the leucocyte count is rather interesting, the most marked being from 18,600 to 9,000 in forty-eight hours. Along with the decrease in leucocytosis is a parallel fall in the temperature curve and pulse, the temperature reaching normal within thirty-six hours and remaining there, or with a very slight fluctuation, not over half a degree. There have been no cases of infection following the operation, nor have there been any cases of recurrence, atrophy of the testicle, or other distressing sequelæ. I have operated on six cases by this method, and while realizing perfectly that no very valuable conclusions can be drawn from such a small series, I believe that the results warrant a further trial of operative procedure along this line, and that the facts stated fairly justify the following deductions:

1. According to the known pathology, it is a rational procedure.
2. If care be exercised, the danger to the patient is slight.
3. The infiltration of the epididymis disappears more rapidly under the operative treatment than under any other.
4. The danger of permanent injury to the testicle and epididymis is lessened.
5. The patients are absolutely relieved of pain on recovery from the anesthetic.
6. The systemic symptoms are promptly relieved.
7. Medicinal treatment will usually be followed only by relative relief and perhaps not by a permanent cure, because the infecting agent remains. And therefore the most rational way to do away with this is by incision, irrigation, and drainage.

REPORT OF CASES.

Case I.—F. V. Age 22. Admitted to Garfield Memorial Hospital, March 17, 1905. Patient contracted gonorrhea fifteen days before admission to hospital. Ten days after the onset a left side epididymitis developed. Medical treatment and support were unsatisfactory, the pain demanding large doses of morphia that afforded slight relief. Examination revealed a very acute condition, with great swelling of epididymis and cord, the organ measuring twelve inches in circumference. The scrotal skin was inflamed and edematous. Operation March 19. Temperature 101° to 103°. Leucocyte count 18,600. The tunica vaginalis contained over an ounce of bloody fluid and particles of lymph. The serous membrane appeared identical with that of gonorrheal joints. Minute hemorrhages were noted over the epididymis especially. On puncture of the greatly enlarged epididymis tarry-looking blood and fluid escaped, but no pus. Cultures and cover slips were negative for gonococci. Twenty-four hours after the operation the temperature was normal, not again rising above 99.2°, the leucocyte count 12,000, and twenty-four hours later 9,000. Relief from pain was complete and permanent, no anodyne whatever being used. Forty-eight hours after the operation the drain was removed, followd by a little bloody discharge. Fairly firm palpation of the once-exquisitely tender organ elicited no pain. On the sixth day the patient was up and about, free of pain, the testicle being but slightly larger than its fellow. He was discharged on the tenth day, the wound being healed and testicle practically normal in size. Three months later, in the secretion obtained by careful massage of the left seminal vesicle and the left side of the prostate only, spermatozoa were demonstrated. Only the most careful examination would show which had been the diseased testicle.

Case II.—W. M. Age 28. Admitted to Garfield Hospital June 29, 1905, with a temperature of 103.4° and a leucocyte count of 14,600. He had had chronic gonorrhea for six months, and five days before admission an epididymitis began. Before entering the hospital his physician was giving him one half a grain of morphine hypodermically every three or four hours. Excessive tenderness and excruciating pain rendered examination out of the question. The organ was swollen to a circumference of ten inches. Operation on day of admission. Examination under ether revealed no areas of softening in the epididymis; the skin was red and showed marked inflammatory edema. The tunica vaginalis contained two and a half ounces of bloody fluid mixed with lymph. Practically the same picture was seen here as in Case I., except that there was much more lymph deposited over the epididymis and a more generally inflamed condition of the whole tunica vaginalis. The testicle appeared normal, and puncture of the tunica albuginea showed a normal condition. About forty punctures were made in the greatly inflamed epididymis; in the region of the globus minor a few drops of pus, containing gonococci, escaped. The skin and subcutaneous tissue were then dissected from the posterior aspect of the epididymis, and punctures made in this region evacuated a small amount of serum, blood, and pus. The small pus cavities were irrigated with bichloride, followed by salt solution, the rest of the operation being as heretofore described. In forty-eight hours the temperature was normal and the leucocyte count 11,000. The relief from pain was absolute and permanent. From now on the patient's recovery was uneventful, greater time being required for disappearance of the infiltration. He was up and around in ten days. I have been unable to examine this patient recently, but in a letter he states that there is no atrophy of the testicle and an almost complete absence of a former infiltrated epididymis.

Case III.—J. P. Age 36. Admitted to hospital October 10, 1905. He had suffered with epididymitis for the previous two weeks, and medical treatment had afforded very little relief. Since the onset of the trouble he has complained of sweats, chilly sensations, and continued pain in the testicle and back. Examination reveals a very tender and greatly thickened epididymis; the skin is rather tense, but not reddened or edematous. Operation October 14, 1905. Temperature 100° to 101°. The tunica vaginalis contained one and a half ounces of blood-tinged fluid, in which gonococci were demonstrated, but blood and agar cultures were negative. No pus was obtained from the epididymis on puncture. The relief from pain was instantaneous and complete, and in forty-eight hours the temperature reached normal. He was up and around on the fifth

day. On the eighth day, the wound being healed, he was discharged.

Case IV.—J. R. Age 21. Admitted January 16, 1906. Four weeks previous he contracted gonorrhea and seven days ago there developed an epididymitis. Medical treatment offered but little relief. On examination the testicle was very painful, the lightest palpation causing great agony. The affected organ was not much enlarged, its circumference being nine inches; the skin was not inflamed, but was slightly edematous. The epididymis and cord were enlarged and markedly infiltrated. On incision the skin was seen to be infiltrated, and on opening the tunica vaginalis a dram and a half of clear, straw-colored fluid escaped. That part of the tunica vaginalis covering the epididymis was covered with much lymph, and its parietal and visceral layers here were glued together; after these were separated there were seen to be present punctate hemorrhages and very marked general inflammation of the membrane covering the epididymis. Cultures taken on hydrocele agar and cover slips were negative. The epididymis was punctured over the globus major and its body, the result being an exudation of blood and serum, but no pus; but on puncture of the globus minor pus was found. A probe was inserted, and three or four drops of pus were massaged out, then the cavity was syringed out and the wound closed as previously described. Cultures from the pus were sterile, and no organisms could be found on cover slips. The wound was dressed on the second day, there being a slight ooze on removing the drain. Patient experienced no pain after the operation, and convalescence was uneventful. He was walking around, free of pain, on the sixth day. This case interested me as showing no redness of skin, even when pus was present.

Case V.—W. B. Age 22. Admited to the hospital December 15, 1905. He contracted gonorrhea November 30. A right-sided epididymitis developed in one week, from which he suffered excruciatingly, and on admission his expression was that of one enduring agony. Operation December 16. Temperature 100°. The tunica vaginalis contained one ounce of bloody-colored fluid. The epididymis was greatly congested and swollen; this was punctured about twenty times. Pus containing gonococci was obtained from the globus minor. A membrane of lymph was stripped off from the tunica vaginalis; this had all of the characteristics of a diphtheritic membrane, which upon removal left a granular bleeding surface. He had complete relief from pain after recovering from the anesthetic. Temperature was normal in thirty-six hours. On December 22 he had no pain; the induration of the cord and epididymis was much less. On December 26, when he left the hospital, the induration had disappeared and there was no pain on palpation.

Case VI.—J. T. Age 26. This case closely resembled the fourth case, except that no pus or organisms were found either in the epididymis or tunica vaginalis, but the relief was as marked and uneventful. Since the presentation of this paper three other cases have been operated upon, the results being uniformly good as regards relief of pain, lessening of infiltration, and rapid recovery.

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THE EFFECTS OF ABSINTHE.

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France as a nation has become so roused to the danger of alcohol and the essences, especially absinthe, which are in such common use in that country, that on December 29, 1900, the French government requested the Academy of Medicine to determine the comparative toxicity of the various alcoholic beverages in use with a view to proscribing the ones most dangerous to health. After an investigation it was suggested by one of the committee that absinthe alone be put into the forbidden list.

In France absinthe is known as the "scourge," the "plague," "the enemy," and "the queen of poisons." Absinthe is a liquor of an emerald green color, consisting of from 47 to 80 per cent. of alcohol, highly flavored with the aromatics, wormwood, anise, fennel, coriander, calamus aromaticus, hyssop, and marjoram. The special variety of this drink depends upon the proportions and kinds of these flavors composing it. Its quality will also depend upon the quality of its constituents. Since any unpleasant taste may be easily concealed by the strong aromatic used, the alcohol employed in this liquor is frequently very impure.

Absinthe heads the list of toxic essences. The ordinary absinthe contains a far larger percentage of alcohol than does whiskey. Consequently its toxic effects are far greater than are those of whiskey, for to the increased amount of alcohol there is added the deadly wormwood.

In France, according to the law of March 26, 1872, it was declared that the commerce and sale of the essence of absinthe ought to be carried on by the pharmacists according to the law on the sale of poisons.

Absinthe, *Artemisia absinthium*, is the common wormwood, the bitterness of which has passed into a proverb. Absinthe is quoted to contain only one-third of 1 per cent. of the oil of wormwood, to which are due the characteristic effects of the beverage. The bitter principle of absinthium, *absinthin*, is a narcotic poison. The coloring matters used in absinthe are often very deleterious; in fact not infrequently copper salts have been used in order to produce the green color.

Absinthe is chiefly used in France, and especially in Paris. It was introduced there after the Algerian war of 1844-7 by the soldiers, who, on their campaign, had been advised to mix absinthe with their wine as a febrifuge. The use of absinthe rapidly increased in France with such disastrous results that it has been described by French physicians as constituting a graver danger to the public than alcohol itself.

The habit of absinthe drinking is a most insidious one, and when it is once indulged it seems almost impossible to break. Thirst is more exacting than hunger. It is often a purely imaginary sensation. "Arrived at a morbid degree, the passion for drink is not only a vice which blights equally the reason, morality and justice, but is a veritable mental malady" (Paul Jolly). "The poisonous and inebriating effects produced in those who drink the liqueur of absinthe or cream of absinthe is undoubtedly due more to the wormwood than to the alcohol" (Trousseau and Pideaux).

The effects of the internal use of absinthe naturally fall into two groups, due respectively to the chief ingredients of the liquor—alcohol, and the essential oil of wormwood, which has a special affinity for the brain and nervous system in general. These

groups may be subdivided according to their physiological, pathological, and mental effects.

The effects of alcoholic beverages in general are too well known to be dwelt upon in much detail. Atwater, one of the American Committee of Fifty who have recently investigated the drink problem, declares that alcohol, when taken habitually in excess, is ruinous to both health and character. In large enough quantities it is a poison. According to Abel, alcohol does not produce "any persistent increase of muscular power, but only enables a brief spurt to be made, which is soon followed by a depression of energy to below the normal." This writer also says that the "moderate" quantity of alcohol is "represented by one, or at most two, glasses of wine (10 per cent. alcohol) or one pint of beer, or their equivalents in terms of alcohol, in the twenty-four hours." Lauder Brunton states that two fluid ounces — rather less than the ordinary sherry glassful—is the extreme limit in twenty-four hours. No authority questions the fact that an excess of alcohol impairs certain cerebral functions—attention, memory, self-control—as well as causing insanity in many cases. But what constitutes excess will depend to a certain extent upon the individual, the occupation, and other conditions.

Physiological and pathological changes are caused by the use of both alcohol and absinthe and are the keynote to the mental and physical effects of these two drugs.

One of the first effects of alcohol is dilatation of the blood-vessels and a quickening of the circulation. After the spurt of the stimulation, due to the acceleration of circulation, comes the stage of diminution of mental power. The superficial blood-vessels become dilated after a moderate amount of alcohol, which might account for the effect on the sexual organism sometimes noted.

Alcohol in small quantities causes an increase in the secretions and an increase in peristaltic movement. Large quantities diminish the secretion of gastric juice and cause active congestion of the mucous membrane of the stomach and a great increase of mucus. After the absorption of alcohol there is less tissue change, hence the tendency to the accumulation of fat.

The Pathological Effects.—By repeated indulgence in alcohol the blood vessels which supply the nerve centers with blood become altered, and the nerve centers themselves also are changed. The nerve cells and fibers to which the activity of the nerve centers is due are supported and bound together by connective tissue. In chronic alcoholism this tissue is much increased. The result is pressure on the nerve cells and fibers, which causes them to waste away.

The Mental Effects.—The effect of the narcotic action is to decrease the close relationship that exists between the individual and his environment and the delicacy of his power of adjustment to external circumstances. The ordinary self-restraint which he has previously shown, together with the consideration of his surroundings, disappears by degrees. The alcoholic becomes more egoistic and selfish, and his surroundings seem less important to him. His mental faculties are unrestrained, and they may be compared to a fly wheel without a brake. He becomes vacillating, and his moral sense is diminished. The poison has destroyed his will. Alcoholic liquors pervert the most important and noble faculties of the man who abuses them and make him old before his time. His brain suffers. His speech becomes more free. He loses his discretion. He repeats his own, as well as others' secrets. His imagination becomes more lively. His emotions are more easily excited—his affection, his hate, or his pugnacity. The memory is impaired. "Mental concentration and power are lessened and the subject becomes 'willless (abulic).'" The gradual disappearance of his faculties proceeds in an inverse order to that of their development. "Alcohol makes man first a child, then a beast."

The chief action of alcohol, according to certain recent investigators, is that of a paralyzant. The nervous centers are affected in the following order: First, the judgment and self-restraint, then the power of perceiving the relations of external circumstances to the individual. He becomes ridiculous, foolhardy, stupid, maudlin, or quarrelsome. After the cerebrum is affected the cerebellum follows, and consequently the power of coordination is lost, and the man staggers. The spinal cord and the medulla are next disturbed.

When the circulation is stimulated a pleasurable sensation of well-being is produced and a childish joyousness. When the pleasure is greatest there is greatest danger of the victim being led into excess.

From the habitual use of alcohol a chronic poisoning develops, even when the beverage has not produced drunkenness. The artificial excitement, due to alcohol, soon gives way to nervous depression and feebleness. The continued use of alcohol leads to chronic disease of the different organs.

Absinthe acts, as would be expected from its composition, like an alcoholic liquor, except that certain features are exaggerated and some new features are added, for it has a marked physical action of its own. The effects of absinthe develop far more rapidly than those of alcohol. What has been said of alcoholism can also be said of absinthism: "Alcoholism is primarily a physiological disease comprising: 1. Paralysis of the inhibitory power of the will; 2. A temporary amnesia; 3. A temporary affective and intellective modification of the personality."

The effects of absinthe in a small dose are giddiness, vertigo, muscular disorders, and convulsive movements like those produced by successive electric shocks. In a stronger dose it causes attacks of epilepsy, more or less violent, which are not produced by alcohol. Brunton declares that these convulsions are due to the action of absinthe upon the medulla—not upon the cerebrum. The end is favorable, as a rule, but may be fatal. Corning has investigated the chronic influence of this drug upon the brain, especially its higher centers, and emphasizes this effect. Brunton says that absinthe is a spinal stimulant.

The Physiological Effects.—In small quantities the oil of wormwood quickens the heart's action, and in larger ones it is a narcotic. It slightly increases the secretions. Amory, in his experiments with absinthe, found that after its administration the nervous centers, especially the cord, were congested. Magnan found the cerebrum and spinal cord congested.

The Pathological Effects.—Amory found an infiltration of blood in some places in the nervous centers. The heart was soft and flaccid. Phillips states that the membranes of the brain and cord are always injured. The lungs are congested, and extravasations of blood are found in the membranes of the heart. Absinthe drinking is followed by a softening of the brain and general paralysis, more often than is the drinking of alcohol.

The Mental Effects.—Lanceraux says that the danger incident to the use of the drug is on account of: 1. Its action on the nervous system; 2. The

state of denutrition resulting from its continuous use. Cushny states that the oil of absinthe causes marked excitement and convulsions. In cases of poisoning the symptoms related to the disturbance of the nervous system predominate. The brain stimulation causes different kinds of convulsions. The epileptiform fits observed after its ingestion are due mainly to the action of this drug on the cerebrum, although other parts of the central nervous system are involved. Cadeac and Meunier sum up the mental effects of this drug as follows: Somnolence, torpor, loss of memory, intellectual paralysis, dullness, complete loss of will, and brutishness. These effects are, as a rule, observed in the absinthe drinker.

Absinthe Epilepsy.—Abel says that absinthe gives rise to hallucinations from the very first. States of delirium are often observed between the epileptic attacks, and there may be delirium without epileptic seizures. For some time it has been noticed that results other than those due to alcoholism take place in absintheurs. Marcé and Magnan did some experimental work with animals in 1864. In one case Magnan gave five grams of the oil of wormwood by mouth to a dog. The animal had an "attaque d'epilepsie" in half an hour. A second atack developed ten minutes later, after which hallucinations occurred. The dog savagely attacked the bare, white wall, undoubtedly thinking that it was an enemy. Binz remarks that it is plain to see that a drug which so markedly stimulates the brain, will, by continual use, gradually bring about such changes in the cells, the vessels, and the membranes of the brain, as finally to develop that type of delirium tremens which is complicated by characteristic epileptic seizures.

Danillo relates the following incident: A medical attendant observed a man who had swallowed about four teaspoonfuls of the oil of wormwood. Convulsions of the face and limbs, loss of consciousness, and violent constriction of the throat, took place within a few minutes after the oil had been taken. Recovery was complete, but, as in the case of most epileptic attacks, the man had no recollection of the beginning of the fit. The victim of epileptic mania does deeds of violence with no consciousness of the same; nor has he any memory of them after they are done. This type is often developed by habitual indulgence in absinthe. Victor Horsley and Magnan, in their studies of epilepsy, induced the convulsion by injecting absinthe. Horsley concludes that the principal seat of the disturbance must be the cerebral hemispheres, and especially their cortical mantle.

Epileptic Insanity.—"The sudden and local discharge from the cells of the cerebral cortex may cause mental as well as motor disturbances." The mental disturbances may occur without the motor disturbances. Epileptics are usually gloomy, irritable, and irrascible, and "pass rapidly from anger to suavity." Epilepsy may develop into acute epileptic insanity; it sometimes occurs without any convulsive attacks. The mania may begin suddenly. The return to sanity is usually sudden, and is accompanied by forgetfulness of the acts performed.

Equivalents of the Epileptic Attack. — Instead of ordinary convulsive attacks of epilepsy, a person may have a variety of acute mental disturbances. "Epileptics may unconsciously, automatically, and with apparent purpose, perform a number of coordinate acts. Homicidal, obscene, or pyromaniac acts may thus be done by epileptics, or intricate maneuvers, such as require the use of tools may be accomplished. Subsequently, as a rule, they have no knowledge of such acts. The procursive fit may, in a sort of status, be prolonged, so that the patient may make journeys of several hours' or several days' duration, during which the conduct is so natural as to attract no notice. Self-consciousness usually is rather abruptly restored, and they are astonished to find themselves at a distance from home, with an intervening blank period of time" (Church and Peterson).

It is said that psychic degeneration is manifested in 60 to 80 per cent. of all epileptics. Probably not more than 10 to 15 per cent. of epileptics develop insanity; however, the proportion is so large as to show a close relation between this functional cortical malady and mental disorders. "When progressive epileptic degeneration occurs, it manifests itself by the following symptoms: Slowness of ideation and articulation; abnormal irritability of temper; hypochondriacal depression; paranoid outbreaks of various kinds, and dementia."

The various effects of this deadly drug on the whole man are so closely interwoven, the one with the other, that it would appear impossible to draw a sharp line of demarcation between any two. Again, in considering the effects of the beverage, absinthe, the effects of alcohol must also be considered.

The chronic mental disorders of the chronic alcoholic result in an insane jealousy, which is due to the deteriorating influence of alcohol on the generative organs. It has been noticed that some men, as they grow older, indulge in sexual excess as well as in alcoholic excess. When the tone of the generative organs is lowered, stimulants do not improve their condition, but rather weaken than strengthen them.

There is on record the history of one family, in which the progenitors indulged in alcoholic beverages, and among their thirty-three descendants there were four prostitutes. Crothers states that moral insanity follows all use of alcohol. The sexual conduct of those morally insane from the use of alcoholic stimulants is without restraint. Many who exhibit the symptoms of moral insanity appear little, if any, changed in other respects.

From the point of view of absinthe epilepsy, it is known that in many epileptics the sexual instinct is most intense. It may be that the cerebral changes incident to the epileptic outbreak cause an abnormal stimulation of the sexual instinct. In many cases this excitement is not active during intervals, but is shown only in connection with the epileptic attack or in the post-epileptic period. "Nobody questions the harm wrought by wormwood in its rôle of servant to human debauchery." Through the entire career of chronic alcoholism "runs the thread of mental degradation involving moral obliquity." The poison produces a physical degradation, which is followed by mental and moral palsy. Lying becomes second nature; conscience is deadened. Kerr says that "the sexual function is responsible for much periodical excitation of inebriety."

The temporary effects of absinthe will, of course, depend upon various factors, most important of which are the quantity of the beverage taken, and the condition of the consumer at the time of indulgence. Kurz and Kraepelin show by experiments that the influence of one dose of alcohol of two and four-fifths ounces does not pass away at once. Its after-effects last longer than twenty-four hours. If this dose is repeated the effect is gradually increased. After twelve days' action the effect is very apparent in "a depreciation of faculty to the extent of twenty-five to forty per cent." The effects of larger doses of alcohol, especially when repeated, will not dis-

appear after a night's sleep. It is possible that there may be a dose, the effects of which may not be noticed. This would be a difficult question to decide. This amount would vary. It would be on the average less than seven and a half grams, or less than the alcohol contained in a half glass of port.

The effects of a moderate quantity of alcohol have already been referred to. A feeling of well-being and gayety, and a condition of irresponsibility are most apt to develop at first. Even in small quantities alcohol does cause serious structural changes in various parts of the body. In a short time only, important organic changes are produced in the nerve cells of the brain and in the central nervous system.

It is well known that alcohol affects different individuals in different ways. Biggs refers to a case showing the difference in the temporary toxic effects of excessive indulgence in alcohol on two college chums. In one case it produced great disturbance in the power of locomotion, but the mind remained clear, while in the other case the mental power was much disturbed, but the locomotor apparatus was unaffected. They became companions at such times, and so helped each other out.

The one who indulges in alcoholic beverages or absinthe loses temporarily the power of good judgment and the power of resistance to any influence or persuasion that is brought to bear upon him. Phillips says that large doses of absinthe act first as an excitant, and produce a pleasant warmth which permeates the whole body. The temporary effects of absinthe itself are well shown in a case reported by Dr. Robinovitch. The drinker within the course of a few days and nights of heavy indulgence in absinthe suffered from an active and very painful delirium. The action of absinthe causes almost immediate convulsive manifestations. Magnan states that the essence of absinthe causes delirium in the dog. In one of his experiments, twelve minutes after an epileptic attack, the dog all of a sudden, without any provocation, "straightens itself upon its feet, the hair disheveled, its looks angry, the eyes injected and brilliant; it directs its looks toward any point, although there is nothing to attract its attention; it stiffens, and with neck stretched, the animal is ready to jump; it advances and retreats successively; it barks with rage and struggles furiously, grinding its teeth, jumping abruptly to catch its imaginary enemy; it then shakes its head from side to side, the teeth close together, as if ready to tear its prey. Little by little it becomes calmer, again gazes, growling, in the same direction, then is reassured entirely."

Magnan declares that "this delirious attack, so suddenly developed, explains the precocious delirium of absinthe drunkards. . . . Under the influence of small doses of the essence of absinthe, the dog stops suddenly, stupefied, the head lowered, the tail hanging down, the appearance dejected, a stranger to all that is going on. It is in a condition of *petit mal*."

In the acute form of absinthism, vertigo and nausea are prominent symptoms, besides the effects of the alcohol. According to Amory, the immediate effects of absinthe are epileptic convulsions and nervous debility. One overdose of absinthe will produce epileptic convulsions. When absinthe is given to animals in small doses, it causes giddiness and muscular jerking. In large doses it produces epileptic convulsions, and also delirium and hallucinations. This delirium develops very suddenly, and the hallucinations cause appearances of fright and agitation. In man the giddiness and muscular jerking are not so marked as in animals. They might be even unnoticed if one were not on the lookout for them. The trembling and giddiness which appear might be thought to be due to alcohol alone. But where there is complete intoxication there are epileptic seizures which are not caused by alcohol.

Marcé, Trousseau, Pidoux, and Motet have determined that a small dose of absinthe will cause vertigo, muscular disorders, and convulsive movements. In a stronger dose it causes attacks of epilepsy more or less violent.

The attack of insanity of the absinthe drinker is very similar to that produced by alcohol, but, in addition, according to Magnan, there are often epileptic seizures, and the hallucinations are very sudden in the onset and quickly reach their acme.

In certain experiments, the administration of this drug was followed by diminished reflexes and a condition of depression. In acute, as well as chronic intoxication, after the stage of depression and diminished reflexes, violent epileptiform convulsions occurred, and a distinct increase of reflex irritability.

Amory gives a comparative table of the temporary and permanent effects of absinthe with those of alcoholic beverages generally, founded on the experiments conducted by Magnan and himself:

Absinthe.	Alcohol.
Animal perfectly well for fifteen minutes, at the least, after the ingestion, with the exception of a few muscular twitchings and a slight uneasiness.	In a very few minutes symptoms of inebriation, resulting in torpor.
Muscular agitation, commencing in the *anterior* portion of the body.	Paralysis, commencing in *posterior* extremities, and then extending to the anterior.
No paralysis.	Paralysis of both posterior and anterior extremities in succession.
Epileptiform convulsions and rigidity, resulting in a speedy death.	No convulsions. Stupor, coma, resolution, and a gradual death.
No apparent lesion, except perhaps a slight cerebral congestion, showing the cause of death to be intoxication by the poison.	Lesions of the brain and of the alimentary canal; gastritis and enteritis might have supervened, had the animals lived long enough for their development.

Differential and characteristic signs which govern the positive diagnosis between the effects of alcohol and absinthe are epileptic attacks, vertigo, early hallucinations, delirium, and inconscient delirium which sometimes follow the attack.

Simple alcoholic delirium is far slower of development. The use of absinthe produces convulsive manifestations almost immediately. The epileptiform attacks in most cases of simple alcoholism require a certain time—some years—for preparation of the brain before they manifest themselves. Absinthe "convulsions are an exact reproduction of the epileptic cycle: tonic convulsions, followed by clonic ones, rapid and short at first, then more and more slow and distant, ending in rest."

The delirious attacks of absinthe develop suddenly, just as "after the administration of certain poisons, of hyoscyamus, belladonna, or stramonium, and this rapidity in the development of the intellectual disturbances is one of the distinctive characteristics distinguishing the action of absinthe and that of alcohol."

Robinovitch says that in the case of the absintheur "the whole clinical tableau of alcoholic poisoning seems to be condensed, so to speak, within the short-

est possible space of time. The excitation of the senses, the delirium, the muscular cramps, the dizziness, vertigo, and finally the *true epileptic* convulsions set in, and follow one another in rapid succession. Where years are necessary for alcoholic morbid changes to be expressed clinically by epileptiform attacks, one year or even less, suffices to bring about *true epileptic* attacks by the abuse of absinthe."

Absinthism differs in various ways from alcoholism. In the former are manifested hallucinations and terrible dreams, enfeeblement of the intellect, and stupor, all of which may develop rapidly without any muscular tremor. If this tremor does exist, it is usually confined to the upper extremities. Absintheurs are restless at night. They suffer from nightmare, nausea, lack of appetite, vomiting, mental dullness, and sometimes delirium or mania. Mental deterioration progresses. The power of concentration of memory is impaired, and the patient loses his will power. He becomes indifferent to the welfare of both himself and his family and friends. Instead of the simple muscular tremor of delirium tremens, as is seen in the alcoholic, the epileptic fit is seen in the absinthe drinker. The fit recurs from time to time. If the habit is overcome during the early stages the fits cease. But if the indulgence is continued the intellect is permanently deranged and paralysis and death result. The morbid changes which develop vary according to the individual predisposition. Sometimes the fits are more like an attack of hysteria. Absintheurs have hallucinations of sight and hearing which do not represent a condition like delirium tremens. The victims of this habit become absolute physical and moral wrecks.

Lanceraux says that chronic absinthism has developed at the end of eight, ten, or twelve months in young women, or even girls from eighteen to twenty years of age.

Cirrhotic degeneration of the liver, kidneys, and heart is one of the effects of chronic alcoholism. Muscular tremor and incoordination are marked. The chronic form of alcoholism differs from that of absinthism, as has been said, mainly in respect to the epileptoid attacks and the early development of general paralysis; Gautier says also by the frequency of hyperesthesia in the iliac fossæ especially.

In general the effects of absinthe are like those of alcohol, but in the former they develop much earlier, and are of a severer nature. In absinthism there is also a more striking disturbance of the nervous system.

The writer takes this opportunity to acknowledge her great indebtedness to the many original investigators in the subject treated of in this paper. Their work has been freely consulted and quoted in this brief review.

29 East Twenty-Ninth Street.

Acute Yellow Atrophy of the Liver in Pregnancy.—G. Acconci states that acute yellow atrophy of the liver is rare in pregnancy, and is generally fatal both to mother and fetus. The etiology is obscure, but the author concludes, from the study of two cases observed by him, that there is no specific cause, but that any of the factors that produce it in the male may act in pregnancy as well. It may also be the result of an autointoxication of severe type due to the pregnant condition. It may come on as the aggravation of a slight icterus or may be a morbid entity. Pregnancy generally affects unfavorably any anatomical lesion of the liver. The same toxin that affects the mother may injure or destroy the fetus. The symptoms generally come on insidiously rather early in pregnancy and advance to a condition of stupor in which the fetus is delivered. The patient continues in a deep coma until death releases her.—*Annali di Ostetricia e Ginecologia*, March, 1906.

ROENTGENOGRAPHY OF THE STOMACH.

By Max Einhorn, M.D., and L. G. Cole, M.D.,

New York.

Rieder,[1] Holzknecht,[2] Williams,[3] and Hulst[4] have recently succeeded in taking good roentgenographs of the stomach. The method consists in giving the patient, when the stomach is entirely or partly

Fig. 1.—*X*-ray photograph of stomach (negative) of Dr B., taken in standing position. The greater curvature extends just to the navel

empty, a pint of milk into which one ounce of subnitrate of bismuth has been suspended by thorough mixing. The patient is then immediately skiagraphed in a standing or recumbent posture. By

Fig. 2.—Skiagraph (negative) of stomach of patient H. standing. The stomach is somewhat dilated and prolapsed, extending a hand's width below the navel.

holding a photographic plate directly over the abdomen the Roentgen picture can be obtained. The time of exposure is usually ten or fifteen seconds.

The writers have examined a considerable number

of patients with the *x*-rays and have convinced themselves that this method is an excellent one. It has the great advantage that no instruments whatever are introduced into the stomach, and that it permits

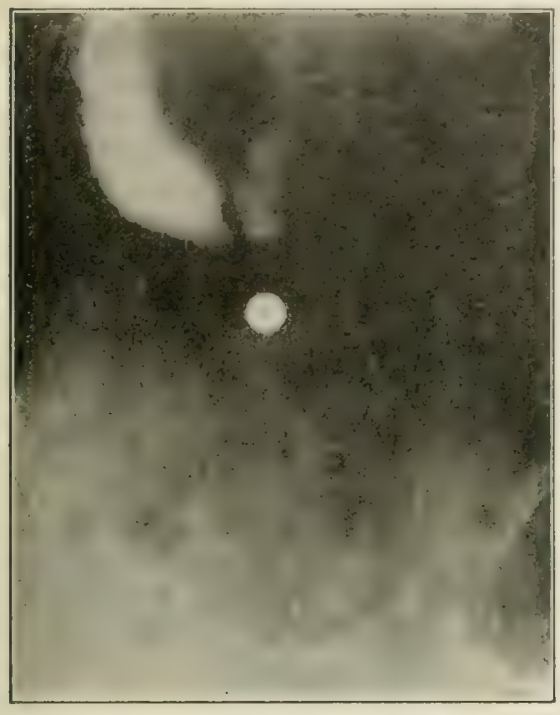

FIG. 3.—Skiagraph of same patient (H.) lying on his abdomen The greater curvature extends to about two fingers above the navel

also an investigation of the colon by exposing the patient to the rays a second time on the day following. The accompanying illustrations are reproduced from roentgenographs obtained by us.

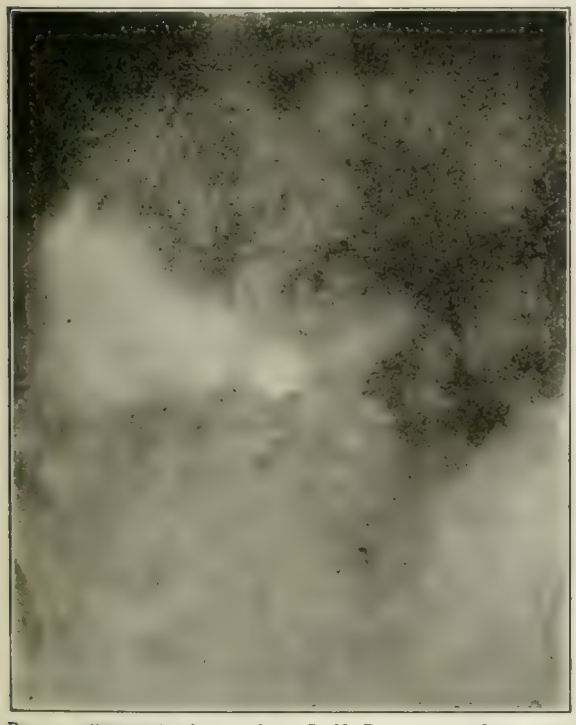

FIG. 4.—Skiagraph of a patient, O. N. P., 3 years after a gastroenterostomy (standing). The stomach extends to the navel, it shape is triangular.

The subnitrate of bismuth should be taken immediately before the skiagraph is made, as part of it passes into the duodenum very soon after it enters the stomach.

A coin is placed over the umbilicus and a wire may be placed around the body at the crest of the ilium and another at the lower edge of the ribs to serve as landmarks in making the skiagraphs.

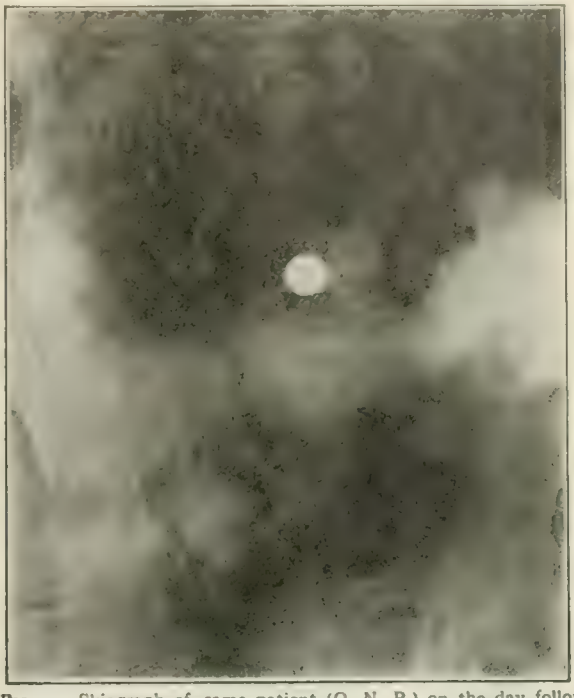

FIG. 5.—Skiagraph of same patient (O. N. P.) on the day following the ingestion of bismuth, stomach being empty. To the right and somewhat above the navel a Murphy button can be distinctly seen. It has remained in the stomach after a gastroenterostomy for the last 3 years.

The plate is placed against a wall and the patient stands with the abdomen pressed against it with sufficient force to hold it in position.

The anode is placed opposite the third lumbar

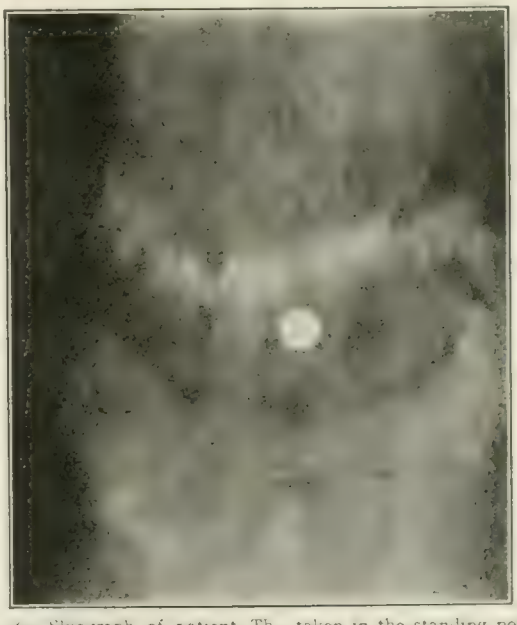

FIG. 6.—Skiagraph of patient Th., taken in the standing position the day following the ingestion of bismuth into the stomach. The outlines of the colon are shown to be normal.

vertebra and the patient is instructed to hold his breath while an exposure of from ten to thirty seconds is made. This shows the position and shape of the stomach in the standing position. Another skiagraph made in the prone position with the abdomen flat on the plate and the anode vertically over the third lumbar vertebra will show the position and shape of the stomach in the recumbent position. In

making the skiagraph care should be exercised not to interpret the shadow of a protruding abdomen as a distended stomach.

In the case of H. a great difference is seen in the position of the stomach according as the subject was

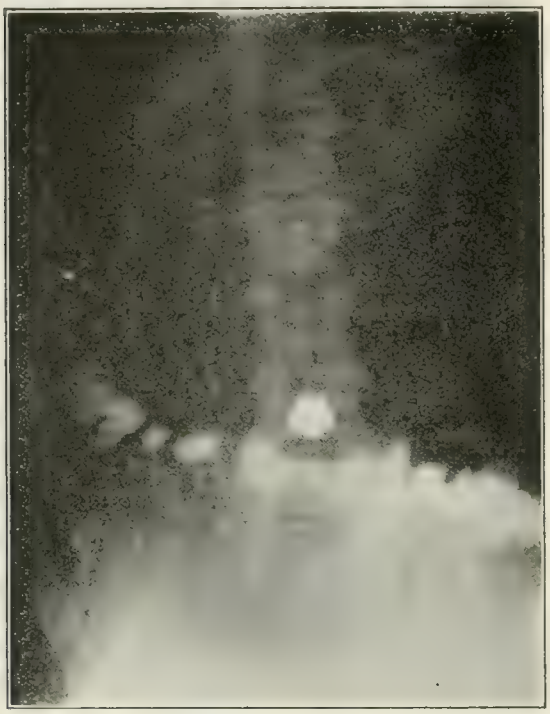

Fig. 7.—Skiagraph of patient H. on the day after ingestion of bismuth. The transverse colon is somewhat prolapsed.

standing and prone. The skiagraph (Fig. 3) showed that the stomach returned to its normal position when the patient lay on his abdomen.

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REPORT OF THREE CASES OF POTT'S DISEASE AND ONE CASE OF COXALGIA OCCURRING IN ADULTS AND PRESENTING UNIQUE FEATURES.*

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The following cases illustrate the very frequent observation that tuberculosis knows no law beyond that common to all diseases. One case may present a typical set of symptoms which persist throughout a typical course, while another shows no regularity either in the onset of the symptoms, their sequence, or the course of the process, yet both will present the same pathological findings and are clinically the same disease.

Case I.—Miss M. W., aged 71 years. The family history was good, there being no tuberculosis or other transmissible disease or condition on either side of the family. She was descended from a sturdy and long-lived race. Her personal history was good, her only complaint being a uterine prolapse of many years' duration which necessitated the constant wearing of a stem pessary. In May, 1903, she began to suffer with pains in the stomach. She had marked indigestion and was treated for the condition in an institution. Improvement followed, and she became able to take much more nourishment with greater comfort to herself, and gained strength, though still remaining quite debilitated. In June, 1903, she began to have weakness in both legs and difficulty in walking and entered a hospital in a Western city for treatment. Here she remained for three months and then became able to walk around. In October she returned to her home in Pennsylvania, but in November was forced to go to bed. Nothing specifically was done for her during this time beyond the attention given to her general health, the condition which was evidently developing in her spine being disregarded. This condition as first noticed by her people about this time was a small knuckle in the dorsal region, involving the eighth and ninth vertebræ. This was considered of no moment, and she remained bedfast. In April, 1904, spastic contractions of the feet and legs began, and, though they were not very severe, they were quite annoying. They increased in severity, and in a month or so it became necessary to attach weights to the feet to prevent the legs from remaining completely flexed upon the abdomen. Shortly after this the bowels and bladder became affected and incontinence in both developed. She continued in this state until the fall, when slight improvement took place. Spasm of the legs became less pronounced; partial control of the bowels and bladder was regained; her appetite improved, and she appeared brighter.

I saw her with her physician in December, 1904, and found her nearly helpless in bed and with a well-pronounced kyphos involving the seventh, eighth, and ninth dorsal vertebræ, and, in view of the improvement which had occurred, advised plaster-of-Paris to be applied in the position of extension. Her knee-jerks were exaggerated and there was still some spasticity of the lower extremities. She also had girdle pains just over the stomach. A jacket was applied by the physician, but had to be removed after a few days on account of the discomfort and irritation. In February, 1905, she began to fail, and in a month or so died. No abscesses had formed, but the paralysis had become complete and the resulting exhaustion in one of her age proved too much for her.

The interesting features of the case are the development of a primary tuberculosis of the spine in a woman seventy years of age, with no apparent causative history and the early and rapid onset of paralytic symptoms even before the appearance of the knuckle in the spine.

Case II.—J. M., aged 50 years. He was born in Ireland and followed the sea as a cook until stricken with disease. His father died at the age of 30 from rheumatism (?). His mother died at the age of 40 from heart disease. One brother and one sister are living and well. No family history of tuberculosis, syphilis, malignant, or other disease. His personal history reveals nothing of the diseases of childhood, but states that he was normally healthy. As a young man, he says, he had inflammatory rheumatism, but also admits having had several attacks of gonorrhea

*Read by title at the nineteenth annual meeting of the American Orthopedic Association, held at Boston, June 6, 7, and 8, 1905.

about the same time. These attacks were followed by a urethral stricture, but it was thoroughly dilated and he has had no trouble from that source. He had pneumonia and pleurisy at 23 years of age, chills and fever at 33 years, and enteric fever at 37 years, but from all these he made a good recovery.

In July, 1903, when he was 47 years of age, both testicles were removed on account of tuberculous degeneration, and a sinus persisted from one of the wounds for over a year. In March, 1904, he entered a hospital for treatment for indigestion and "stomach trouble," but was later discharged for insubordination and refusal to take his medicine. (Note the similarity in the onset of the symptoms in this case and the one just chronicled.) At this time a very small knuckle had formed in the lower dorsal region of the spine, and plaster-of-Paris was applied for a few months and then a brace was made for him. Both of these afforded him much relief, and he disappeared from observation until May, 1905. At this date he came under treatment at the Orthopedic Dispensary of the Jefferson Hospital for pain running down the legs and in the lower part of the abdomen. The brace proved inefficient and he would not go to bed, though there were symptoms of beginning pressure upon the cord. He grew worse, and soon walking became impaired. He complained of cystitis, and a careful examination in the Genitourinary Department of the same hospital developed the fact that he had a tubercular kidney. He was treated for this condition, and, improving somewhat, again disappeared. He went to several different hospitals for treatment and was finally admitted to one where, after observation, laminectomy was advised to relieve the spinal pressure. He was satisfied to have the operation done, but was not favorable to the operator. He then consulted Prof. W. Joseph Hearn, who in turn asked me to see him, inasmuch as I had had previous knowledge of him.

Examination showed marked prominence of the seventh, eighth, and ninth dorsal vertebræ, with paralysis of the lower extremities, though sensation was much less interfered with than motion. The knee-jerks were exaggerated, Babinski's reflex was pronounced, there was loss of control of the bowels and partly so of the bladder, and a marked feeling of constriction at the level of the umbilicus. His general condition was good and he had taken on much weight during the past year. Examination of the urine showed a normal condition in spite of the findings of a year previous.

On May 13, 1906, through the courtesy and with the assistance of Professor Hearn, I operated upon him, removing a portion of the laminæ of the seventh dorsal vertebra and all of that part from the eighth and ninth. The cord bulged out quite markedly after the removal of the bones and was found free from pressure at both the upper and the lower ends of the wound. The membranes were not opened, as it was not thought anything would be gained thereby. The wound was sutured with silkworm gut and a few strands of the same material were used to secure drainage.

On May 21, the stitches were removed. The wound healed by first intention. A plaster-of-Paris splint was applied as a trough to the back and the body firmly bound to it. Cramping of the legs is only intermittent now.

May 25.—Can now void urine voluntarily. There is also considerable return of power to the feet and legs. Condition excellent and at no time has the temperature been above 99.4°.

After this he gradually improved in strength until on June 20 he was able to sit up in bed with his brace on. He left the hospital on 6/30 and gives every indication of regaining his normal strength as he has his weight.

Especially interesting in this case is the primary focus of disease in the testicles with secondary infection of the spine and kidney and the subsidence of the activity of the disease in each focus for the present at least. As he is a rugged looking man, there would seem no reason to anticipate aught but recovery in his case. (As first reported, this record was not nearly so complete, but the delay in publishing this paper has enabled the author to give a much more interesting and satisfactory history of this unusual case.)

Case III.—M. T., born August 31, 1869. Family history is very good, there being no tuberculosis, cancer, or other disease present. Personal history is good. Had mumps, measles, and whooping-cough during childhood. At fourteen years of age he developed malaria, but was cured in a short while. In 1887 (eighteen years of age) he first experienced difficulty in straightening himself after being bent forward. He had no injury and was working on his father's farm at the time of the onset of the trouble. This symptom persisted for two years and grew gradually worse. In 1889 (twenty years of age) sharp pains developed in the lower abdomen and extended down the legs. At this time he was unable to bend in any direction, but he continued his work as a farmer as best he could. There was no trouble with the bladder or bowels. Two years later (1891) he first noticed a very small lump in the middle of the lumbar region. It grew gradually larger, but no treatment was used for the back. In 1894, he was compelled to go to bed for seven months, beginning in September, and could do no work of any character. No mechanical treatment was employed at any time, but the supine position in bed allowed the process to subside somewhat, and he recovered sufficiently to get about. He suffered for the next ten years with girdle pains and sharp pains in the pelvis and legs and was not able to work as he had done before. He was treated in the spring of 1904 for myelitis and was much benefited, but in September, 1904, he noticed a small lump in the right thigh, just below Poupart's ligament. It grew gradually larger, but caused him no pain. When he first came to the Jefferson Hospital for relief from this tumor (in April, 1905) it was about the size of a child's head. There was also a large tumor to be felt in the right iliac fossa and fluctuation between these two was easily demonstrated. The tumor on the thigh had been variously diagnosed, but on April 24, 1905, it was incised at the lower angle (about eight inches above the knee-joint), and again close to the anterior superior iliac spine and just above Poupart's ligament. About two quarts of tubercular pus were removed, and after thoroughly cleansing the cavity and washing out first with peroxide of hydrogen and then with 1-4000 solution of bichloride, the upper incision was closed while slight drainage was maintained through the lower wound. Both wounds healed and a steel brace was applied in August, 1905, and is still being worn. The present condition indicates that the disease is being eradicated and will ultimately be cured, as he has been working ever since the brace was applied, and he feels fairly comfortable. As his work is that of a driver

of a milk wagon on a route in a small city, his condition is certainly a hopeful one.

The interesting features of this case are the extremely slow onset of the disease, in spite of the heavy work constantly performed and in the absence of all mechanical treatment, seven years having elapsed before he was forced to give up the first time, the slight degree of deformity which is now present (1906), and the very favorable outlook for the case since the beginning of proper treatment.

The following case of coxalgia is of unusual interest as illustrating the impossibility of pronouncing a case of tuberculosis cured. Almost everyone has seen cases in which the diseased process has remained latent for ten or even twenty years, but seldom does one see a case that has broken out after a quiescent period of sixty years.

Case IV.—J. J. M., aged seventy-two years; a saddler by trade. His appearance was that of a small, spare man, who, though looking as old as he confessed, was yet very well preserved. He applied for treatment at the Orthopedic Dispensary of the Jefferson Hospital in the summer of 1901 and gave the following history: When eight years of age (in 1837) he contracted hip-joint disease and was brought by his parents for treatment at the small hospital attached to the Jefferson College. He was seen by Dr. George McClellan, one of the founders of the college, and at that time the Professor of Surgery, who advised the application of a box frame to the leg to act as a splint and to "draw the leg down." Abscesses developed later and were opened by Dr. McClellan and drained. When he was twelve years of age (1841) the abscesses had healed and the hip was ankylosed. He grew to manhood, followed his trade, married, and reared a family of four or five children. He had always enjoyed good health and led a peaceful and useful life. In 1901, when he was seventy-two years of age, without any known injury or cause, pain began in the hip and thigh, and a few days before coming to the Jefferson Hospital three of the old sinuses reopened and were, when I saw him, discharging purulent matter in every way similar to tuberculous pus. The character of the sinuses and pus and the manner of onset left no doubt but that it was a relighting of the old process from which he had apparently recovered sixty years previously. He attended the dispensary for a month or six weeks, but, experiencing no improvement from the treatment, ceased his visits, and I have not been able to locate him to ascertain the outcome of the disease.

A Contribution to the Etiology of Lateral Curvature of the Spine.—M. Böhm gives *x*-ray pictures of three cases which present certain peculiarities in the lowest lumbar vertebra. The general conditions may be stated by saying that they consist of an anatomical and apparently congenital malformation in the sense of an incomplete development of a sixth lumbar vertebra, with more or less fusion to the fifth lumbar vertebra and to the sacrum. The question arises; Do these peculiarities represent the cause of the curvatures in the cases reported, or are they only incidental thereto? The author replies to this query as follows: The top of the sacrum and the fifth lumbar vertebra are the foundation of the human spine, and only as long as this base is normal, that is, symmetrical, the symmetrical development of our spine is possible. Consequently, if, for instance, a supernumerary lumbar vertebra between the fifth and the sacrum should occur, the symmetrical development of the spine would not be disturbed, as long as this intercalated vertebra is in itself symmetrical. On the other hand, the theoretical supposition is justifiable, that many of these abnormalities will take place in an asymmetrical way, and will disturb the symmetry of the foundation of the spine and, therefore, produce spinal curvatures, partly directly, in a mechanical way, partly indirectly, by compelling the body to compensation. There are already anatomical proofs that spinal deformities with the typical lateral and rotatory components can result from the above-mentioned conditions. Böhm does not claim that these congenital abnormalities represent any exclusive cause of curvature, but believes that they constitute a not uncommon cause.—*Boston Medical and Surgical Journal.*

Gastrotomy.—Riccardo Petrucci gives us the following conclusions as to the usefulness of gastrotomy in cases of stricture and tumors of the esophagus. Gastrotomy is easy of execution, is not a severe operation, and produces a permanent alimentary fistula, which gives no visible external deformity, and should not be abandoned. Whenever there exists an obstacle to the passage of food through the esophagus, whether from stricture or tumor, the operation is indicated. It not only keeps the patient from starving, but lessens his local pain from contact of the food with a neoplasm. It prolongs life and stops hunger and vomiting. The results are best when the operation is done as soon as the diagnosis is made. The fistula must be permanent, as small as possible and as high up as convenient, with folds of mucous membrane that close the orifice. The operation should be completed at a single sitting. The post-operative care is important. The daily diet must be supervised and the fistula kept open with sounds of suitable size, not becoming contracted at the point of entrance.—*Il Policlinico.*

Septic Awakening by Chloroform General Anesthesia.—J. B. Bloom describes several cases of this nature. One patient was a woman on whom a uterine curettage was performed for a condition that was not septic. The urine was normal. After the operative interference, which was not followed by any rise in temperature, a marked condition of genitourinary sepsis was awakened. This continued for quite a time, long after apparent convalesence had been established. The patient was advised to drink plentifully of water for the purpose of diluting the infection. No evidence of this former infection exists at the present writing, a period of very nearly two years having passed. The writer next describes two cases of appendiceal infection, both of virulent type. The first patient was a boy sixteen years old, in whom no septic condition could be found before operation. Afterwards, however, genitourinary sepsis was awakened and continued long after every evidence in the local wound, which was treated by the open method, was healthy. Recovery took place. In the second case of appendical infection, although the urine on admission showed nothing alarming, the patient died at the end of the third day after operation of convulsive seizures and urinary suppression, the abdominal symptoms being without pathological evidence. Pus and albumin were found in the greatest abundance in the urine. The last patient was a woman twenty-five years old, with fracture of both patellas. Both bones were operated upon at one sitting. Later the urine became purulent although before operation it was perfect in a general way. Pyelitis was followed by uremia, which ended in death after a confinement of four months. Within this time there was a period when her perfect recovery was anticipated. The writer thinks that cases of this kind are worthy of attention.—*New Orleans Medical and Surgical Journal.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, October 13, 1906.

THE CLINICAL VALUE OF CRYOSCOPIC EXAMINATIONS.

IT is nearly ten years now that Koranyi of Budapest applied the determination of the freezing point (cryoscopy) to the study of pathological urine. Since then work has been constantly going on in various parts of the world with this method, and the results obtained seemed to vary so much that a great deal of skepticism has been expressed, both here and abroad, as to the actual clinical value of cryoscopy. We have had occasion more than once within these years to comment on the situation editorially. As has been and is the case with most of the newer laboratory methods, experience, tempered by judgment, and sustained by an increasing accumulation of statistics, has gradually crystallized opinion as to the value of cryoscopy, until to-day its limitations are quite well understood, while its advantages are fully appreciated.

After Koranyi's historic work came that of Claude and Balthazard; of Achard and Castaigne, of Bernard, of Casper and Richter, of Rovsing and of Kümmel—to mention only some of the more important investigators in this interesting field. But little of importance has been published in this country on cryoscopy during the past few years, if we except the practical and thorough paper of Dr. A. A. Berg of this city.

As the subject developed under the influence of these researches, the students of cryoscopy and its clinical applications came to be divided into two camps. On the one hand there were men who, like Claude and Balthazard, believed that cryoscopy was by far the most important method of determining the renal function, and that by simple calculations it was possible to determine even the relative amounts of certain constituents from the freezing point of the urine. On the other hand, there were the skeptics, led by Rovsing, who accumulated a mass of material to prove the fallacies of the method and its utter worthlessness, save in certain limited circumstances.

The last word on the subject has, of course, not yet been spoken, nor will it be for some years to come; and yet, in the recent study of functional diagnostic methods by Kümmel (*Berliner klinische Wochenschrift*, July 2 and 16, 1906), we find such an impressive array of facts and figures collected by that well-known surgeon in the course of six years, and based upon 404 operative cases of kidney lesions, with 1,000 or more cryoscopic examinations, that we think it worth while to present them here as probably the best solution of this important problem which has yet been offered.

Kümmel concludes from his experience that cryoscopic determinations made by beginners are worthless. It takes a great deal of experience to eliminate the sources of technical error. Cryoscopy of the combined urines of both kidneys is of no practical value, as the freezing point varies so widely under normal conditions. Cryoscopy of each separate kidney is valuable, as the freezing point of the diseased kidney is constantly higher than that of the healthy one. The freezing point of the blood is constant, and therefore a much more trustworthy criterion. Normally the blood freezes at 0.56°C., with normal variations up to 0.57°. If the freezing point is lower than that, the kidneys are not eliminating the metabolic products fast enough, and are probably diseased. If the freezing point of blood reaches — 0.60°C. nephrectomy is a risky operation, as the two kidneys combined do not excrete sufficiently well. If the freezing point is still lower, the operation is absolutely contraindicated.

Of the 404 operations by Kümmel, 189 were nephrectomies, 133 nephrotomies, 6 resections (partial) of renal tissue, 45 nephropexies, 11 decapsulations, 12 incisions of paranephritic abscesses, and 8 plastic operations on the ureter. The total mortality was 12.6 per cent. There was, however, a marked reduction in the mortality in the cases of operation after the introduction of cryoscopic examinations, as compared with the mortality of the preceding years. Thus, in 140 nephrectomies performed after cryoscopy there was not a single death; on the other hand, 6 deaths due to insufficiency of renal function, or to the absence of a second kidney, were recorded among the 41 nephrectomies which were done before the introduction of cryoscopy and ureteral catheterization.

There can hardly be any question, after such convincing proofs have been submitted, that cryoscopy, especially cryoscopy of the blood and of the urine of each kidney separately obtained, is of the utmost value as a diagnostic and prognostic aid in renal surgery. By this method, combined with other modern modes of examining the condition of the kidneys, the surgeon can be very reasonably sure that the second kidney is present and that it secretes enough urine to allow the patient to survive the operation. The limitations of the method are now well defined, and if the surgeon bears them in mind, and does not rely on cryoscopy to the exclusion of other diagnostic methods, he will not be disappointed in the results of the freezing-point determinations.

MATERNAL TRANSMISSION OF IMMUNITY TO DIPHTHERIA-TOXIN.

ALTHOUGH an admirable and promising beginning has been made in the study of the important question of immunity, from both the scientific and the practical standpoints, there are many phases of this most intricate and involved subject, some even of an elementary character, that yet require to be cleared. Exactly as susceptibility to infection, and even to intoxication, varies greatly in different individuals—and perhaps in the same individual at dif-

ferent times—and with respect to different infectious and toxic agents, so also are there wide variations in the matter of immunity, whether natural or artificial, inherent or acquired. The subject is of especial significance in connection with the standardization of serums for prophylactic and therapeutic purposes. Some valuable observations on this point are recorded in a recent bulletin issued by the United States Public Health and Marine-Hospital Service.*

For economic reasons it was thought that guinea-pigs that had been used for testing diphtheria-antitoxin, or for determining the strength of diphtheria-toxin, and had fully recovered, might be used also for breeding purposes; but, as a precautionary measure, it was decided to test the young of a number of such used and recovered animals, in order to see if they exhibited resistance to the action of diphtheria-toxin. If these animals proved resistant, tests of serum made on them must yield misleading results; while, if the animals exhibited merely average susceptibility, a great saving would be made in the purchase of animals for testing purposes. It had already been shown that guinea-pigs treated with a toxin-antitoxin mixture, or with horse-serum alone, transmit to their offspring a hypersusceptibility to injections of horse-serum, normal or antitoxic. Such young animals should, therefore, not be injected with serum for the purpose of determining the absence of bacterial and toxic contamination. As a result of the experiments undertaken, it was found that 7 of 14 female guinea-pigs, treated with a single injection of toxin or toxin-antitoxin mixture, transmitted to their offspring immunity sufficient to protect them from the effects of full lethal doses; and of 24 young animals 13 were resistant to full lethal doses. Of 10 mothers treated with toxin-antitoxin mixture, 7 transmitted immunity to their offspring, while no mother that received injections of toxin alone transmitted such immunity. Of 12 mothers treated with a single injection of toxin or toxin-antitoxin mixture, 6 transmitted to their offspring resistance to minimum lethal doses. Of 8 mothers that received toxin-antitoxin mixture, 6 transmitted to their young immunity to minimum lethal doses. Of 21 young animals 11 were resistant to doses of toxin fatal for control animals. No mother that received injections of toxin alone transmitted such immunity. In cases in which immunity was transmitted to the offspring all of the litter were immune to about the same degree. The fact that immunity was not transmitted by all of the mothers treated with toxin-antitoxin mixture may be due to the fact that some of the animals produce more antitoxin than others.

It was found, further, that the offspring of mothers treated by repeated injections of toxin-antitoxin mixture exhibited a marked resistance to full lethal doses of toxin. The evidence indicates that immunity produced by the injection of large amounts of antitoxin alone is not as lasting as that produced by small amounts in conjunction with small amounts of toxin. It was demonstrated that the resistance to diphtheria-toxin is not transmitted to the second generation.

An attempt to immunize female guinea-pigs by repeated small injections of diphtheria-toxin was unsuccessful, hypersusceptibility rather than resistance being thus established. A final series of experiments showed that a mother can transmit to the same offspring both immunity to diphtheria-toxin and hypersusceptibility to horse-serum. For this reason no female guinea-pig that has previously received injections of toxin-antitoxin mixture should be employed for breeding animals to be used in testing diphtheria-antitoxin. The transmitted immunity would yield misleading results, while the hypersusceptibility to the action of horse-serum would falsely indicate the presence of bacterial or toxic impurities in the tested antitoxin.

*Hygienic Laboratory, Bulletin No. 30, August, 1906. I Maternal Transmission of Immunity to Diphtheria-toxin. II. Maternal Transmission of Immunity to Diphtheria-toxin and Hypersusceptibility to Horse-serum in the Same Animal; by John F. Anderson.

THE RELATION OF FERTILITY TO SOCIAL STATUS.

It has been remarked, oftentimes with much alarm, that the birth rate is on the decline, particularly among those classes of the population in which an increase is most desirable. In France this fact has been accepted as a national calamity in the handling of which the government has taken a part. Other countries have also taken up this question, and one in which considerable attention has been devoted to the subject is England. In order to determine to what extent the decrease in the number of children in English families is differential, Heron, in a pamphlet issued by the Draper's Company of London (Dulau & Co., London, 1906), has made a careful study of the census and birth statistics for the past fifty years. His particular aim was to find out whether this reduced fertility of English wives was associated with conditions of poverty, disease, and generally unhealthy and improvident surroundings.

It is quite generally acknowledged that the working classes contribute the largest relative number to the population, notwithstanding the high infant mortality among them, and the present investigation again demonstrates that there is a close relationship between social status and the birth rate. "In districts where there is overcrowding, where there is a superabundance of the lowest types of labor, where it is needful to employ many young children in order to earn daily bread for the family, where infantile mortality is greatest, there the wives of productive age have the most children. Where there is more culture and education, as shown by a higher proportion of professional men, where there is more leisure and comfort, as shown by a higher percentage of domestic servants, there the birth rate is least." In such words the writer describes conditions which are duplicated here as well as in all other large cities, and as the ratio between inferior social status and high birth rate has practically doubled during the last fifty years in London, it is quite clear that the reduction in the size of the families has begun at the wrong end of the social scale and is increasing the wrong way.

Among the reasons adduced for this state of affairs, the postponement of marriage among the higher classes has often been referred to as an important factor, but according to Heron's figures

this does not hold at the present day, and the marked increase in the correlations between low social status and high birth rate must be due to other causes. The writer presents merely a statistical report, and ventures to present neither causes nor remedies. His report, however, points out certain distinct sources of national deterioration which are active in other countries as well as in England, and which before long must be considered by the statesman as well as the social reformer, and not, as hitherto, by the physician alone.

Consistency.

A short time ago, after the sudden conversion of the editor of the *Journal of the American Medical Association,* this gentleman, in his endeavor to kill off the independent medical journals, established the rule that none should be regarded as "ethical" which admitted to its advertising pages any proprietary remedy of which he disapproved. A full list of these tabooed preparations has never, to our knowledge, been published, but several have been mentioned from time to time as especially worthy of condemnation; the Medical Record has been held up to public scorn because it has admitted some of them to its advertising pages, and the physicians of the country have been urged to have nothing to do, either as contributors or subscribers, with any journals in which these preparations are advertised. There is a most readable monthly journal published in Chicago, *The Clinical Review,* which, like all the independent medical journals of the country, as well as many of the official organs of the State societies, accepts the advertisements of a number of proprietary remedies anathematized by the journal of the Association; in the current issue of the *Review* we have counted eleven of these preparations, among them the very particular *bête noir* of the editor of the Association *Journal.* There is nothing especially worthy of remark in this fact, but what is perhaps peculiar is that the list of collaborators of this "unethical" journal contains the names of several officers of the Association. Among them, to mention only three, we find M. L. Harris, Secretary of the Board of Trustees under whose direction the *Journal of the American Medical Association* is edited; Frank Billings, Treasurer of the Association and the vociferous foe of all nonpharmacopeial remedies; and William J. Mayo, President of the Association. We have no fault to find with this; the names of these gentlemen and of many others prominent in the Association are printed conspicuously on the front cover of *The Clinical Review,* and the journal is worthy of their support and approval. But some who do not know the true inwardness of this so-called reform may wonder at the inconsistency of those high in authority and may not be able to understand why one particular journal should be selected for reprobation for doing something which these officials of the Association, with what appears to be cynical indifference, publicly approve and sanction in the case of other journals. We say "other journals" advisedly, for *The Clinical Review* is not the only periodical, carrying "unethical" advertisements, which is edited and supported by officers of the Association.

The Effect of the Roentgen Rays on Growth.

It does not seem strange that an agent which has come into such universal use as a diagnostic and curative measure should be subjected to inquisitorial processes, for that is apparently the fate of popularity. Of the ability of these rays to cause burns there is little doubt, although with improvements in the tubes the frequency of *x*-ray burns is declining. Atrophy of the essential reproductive organs has also been ascribed to their employment, and it is moreover claimed that growth may be stunted. Försterling (ref. in the *Centralblatt für Kinderheilkunde,* September, 1906) has made some experiments with reference to the latter phenomenon and found a distinct inhibition of growth in various young animals when these were subjected to *x*-ray exposures of even ten minutes' duration, and the same effect was noted on the buds of different trees. These exposures were less than those ordinarily used for therapeutic purposes, but seemed to be accompanied in every instance by a well-marked effect. The latter was less, however, in older animals. The writer thinks we should, therefore, endeavor to restrict the use of this therapeutic measure in small children to cases of malignant neoplasms and lymphatic leukemia. When it is found necessary to apply the rays, all other portions of the body should be amply protected and the exposures should be limited in time and not repeated at too frequent intervals, in order to avoid a cumulative effect. Unfortunately we are not acquainted with the minimum dose of this agent by which a deleterious effect may be produced, and not until a device for measuring the rays is discovered can a solution of this difficulty be hoped for.

"Hyperovarie."

We often meet with a type of women in whom the sexual development, both mental and physical, becomes well marked at a comparatively early age. Menstruation is abundant and metrorrhagia is a frequent complication, but when there is any disturbance of the genital organs of a local character, amenorrhea appears. These girls are apparently well nourished, they are well developed in body, but in the course of time they become markedly anemic. Neuroses of various kinds are apt to be present, and the urine contains phosphates and nitrogenous elements. Women of this type may be very prolific, and the condition described is denominated by Dalche "hyperovarie." It forms a striking contrast to the state characterized by ovarian insufficiency in which development is backward, puberty appears late, and menstruation is scanty, unless there is, in addition, some disease of the internal genital apparatus. The skin is pale and clammy, and the appearance of the patient reminds one of myxedema; the urine contains a diminished amount of nitrogen and phosphates. Such women are usually sterile. Of the two contrasting types, the latter is the more frequent, but the former is now very apt to be found among women of the large cities. One of the important facts noted by Dalche is that many cases of virginal metrorrhagia of unknown origin are probably dependent upon this overdevelopment of the ovarian tissues, with its accompanying excess of ovarian secretion. The treatment should be symptomatic, and during the intervals between the periods vasoconstrictors and sedatives are indicated.

The Medical Host.—A French paper says that there are 228,234 medical men in the world. Of these there are in Europe 162,333, distributed as follows: In England, 34,967; in Germany, 22,518; in Russia, 21,489; in France, 20,348, and in Italy, 18,245. In England the proportion of doctors is 78 to 100,000 of the population. In France it is 51, and in Turkey, 18. In Brussels it is 241, in Madrid, 209, in Budapest, 198, in Christiania, 181, in Vienna, 140, in Berlin, 132, in London, 128, in Athens, 123, and in Paris, 111.

News of the Week.

Yellow Fever in Cuba.—Since September 1 six cases of yellow fever with two deaths have been reported in Havana, all occurring in the poorer parts of the city. The total number of cases in Havana thus far this year has been something over twenty. The deaths have numbered five. Outside of Havana there have been only eight cases since December. The infection is attributed to Spanish immigrants from South American ports. The facilities of the American Army are being utilized in the work of sanitation and the city of Havana is to be given a thorough inspection and cleaning.

More Meat Inspectors Needed.—The Bureau of Animal Industry has called on the Civil Service Commission for more eligibles for appointment as meat inspectors and veterinary surgeons, of which about 300 additional are needed to carry out the provisions of the meat inspection law. Examinations for these positions will be held in various cities throughout the country on October 17.

Value of Tent Colonies.—The Illinois State Board of Charities in its quarterly bulletin speaks of the beneficial results of the tent colonies at the various State insane hospitals for consumptive patients. The tent colony, for instance, at the Illinois Hospital for the Insane at Bartonville shows a per capita cost of only $50 per year.

Addition to Washington Park Hospital, Chicago.—Plans have been prepared for a three-story addition to the institution, to be built on a lot 50 feet by 150 feet, adjoining the hospital.

Opening of the New Pavilion at St. Luke's Hospital.—The Margaret J. Plant pavilion for private patients, connected with St. Luke's Hospital, New York City, will be opened at 3 o'clock P.M. on St. Luke's Day, October 18. The building, which is the gift of Mrs. Plant, has just been completed at a cost of $500,000.

Reception to Columbia Professors.—The faculty of Columbia University last Saturday held a reception for the fourteen new professors who took up their work with the beginning of the present academic year. The new members of the medical faculty are Dr. Frank W. Jackson, professor of clinical medicine, and Dr. John Henry Larkin, adjunct professor of pathological anatomy.

Dinner to Sir William Perkin.—Sir William Henry Perkin, the pioneer in the field of coaltar chemistry, was the guest of honor at a banquet at Delmonico's, given last week by four hundred chemists and manufacturers of chemical products. Sir William was presented with the first cast of a gold medal to be known as the Perkin medal and to be awarded each year to some American chemist distinguishing himself in the field of research. A silver tea service was also presented to Sir William.

Visit of Viennese Surgeons.—Dr. Ernst Wertheim, Professor of Gynecology in the University of Vienna, and Dr. Robert Mann, a prominent obstetrician of the same city, who arrived in this country on October 3, are visiting various Eastern and Southern cities for the purpose of inspecting the surgical clinics and of demonstrating European methods. They will return to New York later in the month as the guests of Dr. Sidney D. Jacobson and will operate in several of the hospitals in this city.

Dr. Horatio C. Wood has resigned the chair of materia medica, pharmacy, and general therapeutics in the University of Pennsylvania on account of ill health, and has been elected emeritus professor.

Dr. J. L. Amster of this city was thrown from his carriage last Sunday by a collision with a trolley car, and received serious injuries, including a fracture of the humerus at the shoulder and fracture of several ribs.

Dr. Neisser of Breslau has secured from the German Government a grant of 100,000 marks for the purpose of continuing his researches on the etiology of syphilis in Batavia. Neisser's previous investigations, carried on in 1903 and 1904 in Breslau and in 1905 in Batavia, were conducted entirely at his own expense.

Honors for Major Paul F. Straub.—President Roosevelt on October 6 conferred upon Major Paul F. Straub of the United States Army Medical Corps a medal of honor for gallant bravery in face of the enemy. On December 21, 1899, Major Straub, whose home is at Mount Pleasant, Ia., but who was surgeon of the 36th Volunteer Infantry, commanded by Brig.-Gen. J. Franklin Bell, rode in the face of the enemy's fire at Alos Zambales, Island of Luzon, and carried a wounded United States soldier to a place of safety. For this act of bravery he was commended at the time by Gen. Bell.

In Honor of Schaudinn.—In commemoration of the services to humanity of the late Fritz Schaudinn, a fund has been collected for the purpose of awarding biennially on the day of his death a medal, to be given for discoveries in the domain of microbiology. The award will be made under the auspices of the Institut für Schiffs und Tropenkrankheiten in Hamburg, with which Schaudinn was connected.

The Harvey Society of New York announces its second course of lectures, which will be given at the Academy of Medicine on Saturday evenings at 8:30 P.M. during the coming winter. The lectures are open to the public, and all interested are cordially invited to attend. The program for the year is as follows: October 20, A. E. Wright, London, "Therapeutic Inoculation with Bacterial Vaccines"; November 3, C. A. Herter, New York, "The Common Bacterial Infections of the Digestive Tract and the Intoxications Arising from Them"; November 17, W. T. Porter, Boston, "Vasomotor Reflexes"; December 1, J. G. Adami, Montreal, "The Myelins and Potential Fluid Crystals of the Body"; December 15, S. J. Meltzer, New York, "The Factors of Safety in Animal Structure and Animal Economy"; January 12, F. G. Benedict, Middletown, Conn., "Metabolism During Fasting"; January 26, E. B. Wilson, New York, "Recent Studies of Heredity"; February 9, G. S. Huntington, New York, "The Genetic Interpretation of Variations in the Genitourinary Tract"; February 23, W. T. Councilman, Boston, "The Relation of Certain Leucocytes to Infectious Diseases"; March 9, Friedrich Müller, Munich, "Neuroses of the Heart."

Wesley M. Carpenter Lecture. — This annual lecture will be delivered at the Academy of Medicine on October 18 by Dr. Harvey Cushing of Baltimore. The subject will be "A Discussion of Some Early and Some Late Complications of Cranial Injuries, Based Upon the Histories of Three Illustrative Cases." The lecture will be illustrated by photographs and diagrams.

Ontario (Can.) Provincial Board of Health.—The Ontario Cabinet has appointed the following as members of the Provincial Board of Health, to succeed those whose term of office expired last month: Dr. Charles Sheard of Toronto, Dr. Milton Ira Beeman of Newburgh, Dr. John William Scott McCullough of Alliston, Dr. Charles B. Coughlin of Peterborough, Dr. William J. Robinson of Guelph, and Dr. William R. Hall of Chatham. The term of office is three years.

Conference of New Jersey Boards of Health.—The first annual conference of the New Jersey State and local boards of health, as authorized by the act of April 19, 1906, will be held in the State House, Trenton, on October 19 and 20, 1906. Each local board of health is authorized to appoint one of its members or officers as a delegate to attend the conference. The conference will be opened by Dr. C. F. Brackett, President of the State Board of Health.

"Gaillard's Southern Medicine."—Dr. W. E. Fitch, owner and editor of *Gaillard's Southern Medicine,* has removed to New York City and in future the journal will be published simultaneously in this city and in Savannah, Ga.

Cost of Medical Study in England.—According to a recently published estimate, the expenses of the medical student in London may be figured about as follows: On entering one of the large London medical schools the bare fees will amount to £30 per annum, with an addition for the first years of £20 as entrance fee—that is to say, £170 to cover the five years. To this must be added the fees for certain additional and necessary practical classes and material, entailing an extra cost of perhaps 12 or 15 guineas. Subscription to the students' club will absorb another 15 guineas, and books, instruments, etc., say, £30 more. When examination fees, say 40 guineas, are added, and the official register fee, £5, we get roughly £280; pocket money and lunch in town mean quite another £25 or £30 annually, while putting clothes, board, lodging, etc., at £85 to £100 a year, we reach a total of £850 to £900, if the student gets through in the five years.

Overlying of Infants.—At a recent inquest held in London in the case of an infant suffocated while in bed with its parents, the coroner stated that about 2,000 infants annually lost their lives in this way in England, there being in the neighborhood of 600 deaths from this cause in London alone.

Prize for Trachoma Investigation.—The Hungarian Minister of the Interior has announced a royal international prize of 1,000 crowns for the best work on the etiology of trachoma. It is required that competitors present an original contribution which represents progress of value. Papers may be written in Hungarian, German, French, or English, and must be in the hands of the jury before December 31, 1908. Communications should be addressed to Ofen Pest, I., Var, Belügyministerium. Papers that have been published will be eligible, providing that they have not appeared before January 1, 1907. The prize will be awarded at the XVI International Medical Congress in September, 1909.

Iowa State Association of Railway Surgeons.—At the recent meeting of this Association officers were elected as follows: *President,* Dr. S. A. Spillman of Ottumwa; *Vice-President,* Dr. E. N. King of Muscatine; *Secretary,* Dr. A. B. Deering of Boone; *Treasurer,* Dr. E. C. McMell of Delmar.

Santa Fe Railway Medical and Surgical Society.—The election of officers for this society, held at the third annual convention on September 29, resulted as follows: *President,* Dr. George W. Miel of Denver; *First Vice-President,* Dr. Charles Dunning of Arkansas City, Kan.; *Second Vice-President,* Dr. George C. Highsmith of Carrrolton, Mo.; *Third Vice-President,* Dr. J. E. Lively of Blackwell, Okla.; *Fourth Vice-President,* Dr. J. J. Shuler of Raton, N. M.; *Secretary,* Dr. W. A. Uehren of Topeka, Kan.; *Treasurer,* Dr. J. D. Freeman of Topeka, Kan.

The Late Dr. Otis.—At a meeting of the Medical Board of St. Mark's Hospital, held October 2, 1906, the following resolutions were adopted:

Whereas, Death has removed from among us the beloved Vice-President of our Board, Dr. William K. Otis, long and favorably known and respected among us, therefore be it

Resolved, That we deeply regret the loss we have sustained in the demise of one of the pioneers in the genitourinary surgery in this country, and who was loved by everyone with whom he came in contact;

Resolved, That we extend our deepest sympathy to the bereaved family of the deceased, and that a copy of these resolutions be spread in full upon the Minutes of the Medical Board and be published in the medical papers.

Signed: Carl Beck, President of St. Mark's Hospital; Reynold Webb Wilcox, President of the Medical Board; Ignatz Morvay Kottenberg, Secretary of the Medical Board.

Obituary Notes.—Dr. Silas B. Dickerman of Abington, Mass., died on October 1, at the age of fifty-seven years. He was born in London, N. H., was graduated from the Hahnemann Medical College of Philadelphia in 1872, and had practised in Abington ever since.

Dr. Francis J. McQueeny of Boston, Mass., died suddenly on October 2, at the age of forty-seven years. He received his medical degree from the Harvard Medical School in 1890, and two years later began to practise in Boston.

Dr. Frederick Crang of Forest Grove, Ore., died on September 25. He was born in England in 1822, and practised in London until 1856, when he came to America. After practising in the East, he went to Oregon in 1875, and had since resided at Astoria and Forest Grove.

Dr. Walter W. Routh, former health commissioner of Duluth, Minn., died on September 28, at Pasadena, Cal. Dr. Routh was fifty years of age and had practised in Duluth since 1891.

Dr. Walter Clark Jackson of Montgomery, Ala., died on September 27 at the age of eighty years. He was well known throughout the South as an expert in yellow fever, and had been treasurer of the Alabama State Medical Association continuously for a period of twenty years.

Dr. C. E. Barnes of Burlington, Ia., died on September 30, after a long illness. He was born in Ohio in 1861 and received his medical education at Rush Medical College in Chicago. He began practice in Burlington in 1883, and was city physician from 1887 to 1892. Ill health compelled him to give up active work five years ago.

Dr. Edward Bliss Foote, formerly of this city, died on October 5 at his country home at Larchmont, at the age of eighty-seven years. He was the author of numerous books on medicine and on popular medical subjects, and for many years was the editor of the *Health Monthly.* Several years ago he gave up active work and retired to his country home in Larchmont. He is survived by two sons, Dr. Ed-

ward B. Foote and Dr. Hubert P. Foote of this city.

Dr. Emil Wilhelm Hoeber of this city died on October 5, after a short illness. He was born in Carlsruhe, Germany, in 1833, but came to this country in 1858 and was graduated in medicine from the New York University Medical School. He served as coroner of this county during Mayor Strong's administration.

Dr. Minerva M. Greenaway of Toronto, Can., died of typhoid fever on September 28. She was graduated from the Ontario Medical College for Women in 1899, and was for a time connected with the Western Hospital of Philadelphia. She began to practise in Toronto two years ago.

Correspondence.

THE FIRST PHYSICIAN TO TREAD AMERICAN SOIL.

To the Editor of the Medical Record:

Sir:—Permit me to correct a slight mistake in your notice of the sketch on Dr. Diego Alvarez Chanca, published by me in *Janus,* in which you say that he was the first member of the medical profession to land on the shores of America. With Christopher Columbus, on his first voyage of discovery to America, there were two members of our profession, two ship surgeons or *fisicos,* as they were then called in Spain, one named Maese Alonso and the other Maese Juan. The first came over with Columbus on board the caravel *Santa Maria* and returned with him to Spain, while the second, having been put in charge of caring for the health of the thirty-eight men left by Columbus in the little fortress of La Navidad, in the Island of Hispaniola or Santo Domingo, was there massacred, together with all the rest of his companions, by the aborigines of that island commanded by the cacique Caonabo. All this is contained in my monograph on "The Medical History of Christopher Columbus," which is the first and only one existing on that subject, read by me before the First Pan-American Medical Congress, held at Washington, D. C., in 1893.

A. M. Fernandez de Ibarra, M.D.

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OUR LONDON LETTER.

(From Our Special Correspondent.)

"RETURN CASES" AT ISOLATION HOSPITALS—GOVERNMENT AND ANTIVIVISECTION; ROYAL COMMISSION—CONFERENCE ON PHTHISIS—DR. SAVAS IN LIVERPOOL—SUCCESS IN PRACTICE—DAMAGES FOR TYPHOID—OBITUARY.

London, September 21, 1906.

Another report has been made to the Asylums Board on cases of scarlet fever and diphtheria contracted from patients discharged from the Board's hospitals —"return cases," as they are called. Dr. F. M. Turner is the reporter, and his statistics extend over three years, embracing 1,000 consecutive cases at the Eastern Hospital. The conclusions are not just what the prevailing opinions would indicate. The contagiousness of the peeling stage of scarlet fever is described by the figures, and in this respect they support those adduced by Dr. Cameron in a previous report. On the other hand, they do not support Dr. Cameron's view that a great number of return cases are to be accounted for by coincidence. The report agrees with the previous one as to the influence of the time spent in hospital on infectivity. A stay of less than eight weeks or more than ten give a less proportion than that of the totals of eight to twelve weeks. The influence of nasal complication is reported on. Dr. Turner found 3.27 per cent. of uncomplicated cases caused infection on returning home; of nasal cases, 2.62 per cent.; of other complications, 1.54 per cent. But a different conclusion may be drawn from another table, which shows among cases discharged under eight weeks the returns rose to over 6.5 per cent.

"Return cases" sometimes give rise to complaints against the isolation hospitals. It is not unnatural that parents, having been compelled to send their children to these institutions, should be bitterly disappointed when they are brought back as cured and disinfected, if they should infect others. If the ubiquitous reporter scents such a case he at once proclaims the grievance, and the newspapers echo the "hospital scandal." Such an instance has just occurred at the Brentford Hospital and the papers have been repeating the usual cry. The management, they assert, must be to blame, and the difficulties of administering these institutions are quite ignored. The reporters' notion of "return cases" seems to be that the doctors, nurses, and managers must be to blame. In the case of Brentford, the Council met on Tuesday to consider the matter, and discharged two nurses and appointed a new superintendent, pending the election of a new matron. Thus a scapegoat has been found, but how far justice has been done does not appear, the proceedings of the committee to inquire and the Council not having been made public.

The Government has again bowed the knee before the threats of a band of noisy fanatics among its own supporters. This time it is the antivivisectionists whose screed has terrified the "big majority." Tuesday's *Gazette* announced a Royal Commission "to inquire into and report upon the practice of subjecting live animals to experiments, whether by vivisection or otherwise; and also to inquire into the law relating to that practice and its administration; and to report whether any, and if so, what, changes are desirable." So we must look forward to further agitation and the republication of charges by the antis under the name of "evidence," which, however often refuted, are positively repeated by interested agitators and believed by those weakminded people who accept as facts whatever the propagators of sensational stories may assert. Seats on the commission are assigned to Sir Wm. Church, Sir John McFadgean, Dr. W. H. Gaskell, Dr. Geo. Wilson, and Sir Job Collins. These gentlemen, assisted by a lieutenant-colonel, a permanent under-secretary of the Home Department, a couple of barristers, and a captain (as secretary), and presided over by Viscount Selby, speaker of the House of Commons from 1895 to 1905, may be expected to sift the statements submitted to them. The newspapers regard the medical members as advocates of experiment, and the others as condemning it in every case. The latter may well be led by the gentleman who has so often troubled the House and the public on the cruelty of muzzling dogs—canine comfort being with some of greater importance than the suppression of rabies.

Among the many ways in which the antis keep up their agitation, you may be amused to learn that on Saturday a memorial fountain was unveiled in the Battersea new recreation ground, declared open on that day by the Mayor, although not yet completed. The fountain, of red granite, is surmounted by a bronze model of a dog and an inscription in relief sets forth that the animal was a victim of vivisection, and calls on the men and women of England to demand that the practice of it shall cease. The cost is said to have been about £130, contributed by an International Anti Council. In a discussion on this subject a correspondent remarks that it is sad "to reflect on the many poor children who might have been made happy for a fortnight in the country with the money spent on this ridiculous memorial. But I forget; the health and happiness of several children is nothing when a dog's memory has to be considered."

The discussion in question has been going on for a couple of months in the Hertforshire *Mercury,* and has only been closed by the editor this week. It is a very superior example of the debates so largely got up by the fanatics, as two or three medical men have taken the trouble to refute some of the wilder statements reiteratd by the antis. Of course the two or three inevitable heterodox doctors also put in an appearance—Edward Berdoe, editor of the *Zoopsbritist,* and W. Hardwen of Gloucester. The clergy are also represented, and the angry and hysterical women. It is curious that so many antis fail to keep their temper in discussion. It is curious, too, how constantly they go off into side issues and irrelevant statements. Dr. Hardwen declared that Erasistratus disproved Galen's discovery about the arteries when another correspondent asked him to explain how Erasistratus managed to do this 400 years before Galen's discovery. A cleric who intervened with criticism of the Bible of the so-called higher sort is told by a lay disputant that he does not find the spectacle of a minister trying to explain away the inspiration of the Bible very edifying. Another quotes the saying as to not a sparrow falling, and is rebuked by a later letter with the remainder of the quotation, "ye are of more value than many sparrows." These specimens suffice to show the sort of discussion which has filled many columns in other papers as well as the one noticed. This one has, however, brought out a disclaimer from Sir F. Treves, who is being continually instanced by the antis as in favor of their contention. It appears that he has been driven to reprint as a leaflet a letter to the *Times* of April 9, and send it as a reply when his attention is called to these misrepresentations. In it he says his solitary utterance on the subject is in an address reported in the *Lancet,* November 5, 1898, in which he said he had found that operations upon the intestines of dogs were useless as a means of fitting the surgeon for operations on

the human bowel. He goes on to say: "Those who are familiar with the controversial methods of the antivivisection party will not be surprised that certain of my remarks have been cunningly isolated from the context and have been used (in advertisements, pamphlets, and speeches) to condemn all vivisection experiments as useless. . . . . No one is more keenly aware than I am of the great benefits conferred upon suffering humanity by certain researches carried out by means of vivisection."

One of the worst features of these newspaper polemics is the way in which the antis declare thousands of untold cruelties are continually going on, and quote figures including mere subcutaneous injections, describing them as torture. Then, too, some of them assert boldly that a vivisector must of necessity be callous to all suffering. Others simply repeat tales that have been refuted over and over again. Others indulge in simple vituperation and hysterical passion; others are contented to contradict their opponents, and, funnier still, not a few seize the occasion to recommend quack medicines as sufficient to eradicate disease. Now and then, as in this latest case, someone protests against the antis' "unfortunate habit of losing their tempers," or begs them not to "let their angry passion rise," but to "cool down with the weather."

The Lewisham Board of Guardians, finding their Union Infirmary overrun by cases of phthisis, have decided to convene a conference of the Metropolitan Boards to consider the advisability of applying for special legislative powers, with a view of placing consumptive cases in separate hospitals or institutions, to be provided by the Asylums Board or some other central authority. At present there are fifty cases in the Lewisham Infirmary in two wards, or on balconies or in tents in the open air. It is said a single union can scarcely deal effectively with the matter, as extra provision would only induce an invasion of outside cases.

On Monday Professor Dr. Savas of Athens, vice-president of the Greece Antimalarial League, was entertained at the Liverpool Hospital School. Dr. Ronald Ross detailed his investigations in Greece four months ago, and described the ravages wrought there by malaria. With a population of only two and a half millions, 250,000 cases, with 1,760 deaths a year, were sapping the vitality of the country. The successes achieved in Ismailia, Havana, and the Campagna proved the possibility of abolishing the disease by clearing the swamps, which were the breeding-places of the malaria gnats. This was the task before Greece.

The *Grand Magazine* is a monthly which I seldom see and which from a recent contribution medical practitioners will perhaps think beneath their notice. In it Dr. Snow ranges the causes of success in the profession in the following order of importance: Unscrupulousness, selfishness, hypocrisy, industry, and ability. He says no one with the merest vestige of a conscience should become a medical man, that benevolent instincts and sympathy should be sternly suppressed, that in country districts it is advisable to varnish your real sentiments with a cloak of religious hypocrisy. If Dr. Snow only wanted to be talked about, he has succeeded in a few quarters, where his article is denounced as a malicious libel. In other quarters he is simply regarded as beneath contempt. A few ask in mild surprise whether he is himself successful, and whether such success as he has achieved is due to the possession of the attractive qualities he attributes to the successful members of the profession. All seem to agree that whether he has been practising self-portraiture or not, he should not have contributed his picture to a popular magazine. But in this obtrusion of himself on the public he is not alone.

The late outbreak of typhoid fever at Basingstoke resulted in fifty actions for damages against the Borough Council, as the epidemic was traced to the water supply. The actions have now been settled by a payment of £1,650/15 without prejudice and with a denial of liability. A fresh source of water supply has been obtained.

On Saturday a printer was sentenced to three months' imprisonment for libel on a doctor. The judge characterized the libels as serious and thoroughly unjustifiable.

Mr. W. Spencer Watson, R.B. 1860, F.R.C.S. 1862, died on the 17th inst., aged seventy. He was for many years surgeon to the Central Ophthalmic Hospital and to the Throat Department of the Great North Central Hospital. He wrote a good deal on both specialties. His "Abscess and Tumors of the Orbit," 1870, was followed by a volume on "Diseases of the Nose and Accessory Cavities" which maintained a high place and in 1890 reached a second edition. "Anatomy and Diseases of the Lacrymal Passages" followed in 1892.

Mr. D. H. Goodsall, F.R.C.S., senior surgeon to the Metropolitan Hospital and to St. Mark's Hospital, died on the 14th inst. He was an alumnus of Bart's and qualified at the two colleges in 1870 and took the higher surgical diploma two years later. He contributed to *St. Bartholomew's Hospital Reports*, the *Transactions of the Medical Society*, and the *Lancet* various articles on rectal diseases and their surgical treatment. To the first-named he contributed "Twenty Cases of Foreign Bodies in the Rectum," in 1887, and he had an excellent practice in this branch of surgery. In 1892 he reported to the Medical Society two cases in which he opened the cecum for obstruction

Progress of Medical Science.

Boston Medical and Surgical Journal, September 27, 1906.

Diseases of the Bile Passages, Including the Liver, Gall-Bladder and Pancreas.—Papers on this topic are contributed by M. R. Richardson and E. G. Cutler. The former comments on the surprising number of unsuspected lesions found in the right upper quadrant of the abdomen. He reviews the present status of the gallstone question, and utters a caution against hasty and ill-considered operations in this region. Even when the diagnosis is plain, no surgeon has a right, he claims, to operate on the biliary tract unless he has had a large experience in general operating. He then passes to a discussion of the symptoms referable to gallstone at the usual sites of impaction, pointing out the great advantages of operating before the lining of the gall-bladder has become diseased. The great mortality of gall-bladder surgery occurs in cases of impaction in the hepatic or common duct, owing to the far-reaching changes of obstructive jaundice and the increased difficulties of dissection. The rule by which he has been guided and which he has rarely, if ever, had occasion to regret, is that when symptoms exist in the right upper quadrant which are of a chronic character, when the attacks of pain or distress continue, especially at irregular intervals, and when the attacks of pain in any form suggest the presence of gallstones, exploration is indicated, particularly when palliative measures have been employed in vain for a reasonable length of time. When later signs confirm the existence of gallstones, any measures other than surgical are unreasonable and ineffectual.

Dr. Cutler summarizes the symptoms of all these conditions: Pain, tenderness, fever and chills, vomiting, sweating, rapid pulse with increased tension during an acute attack, and perhaps diminished tension with mere inflammation of the ducts, jaundice (a very inconsistent symptom), tumor of the gall-bladder, bile in the urine (variable, with or without albuminuria) in the stools, (variable), and leucocytosis in suppurative complications. Differential diagnosis is called for from gastric ulcer, appendicitis, renal colic, pancreatitis, angina pectoris (in irregular cases), portal pylephlebitis, subdiaphragmatic abscess, and gastric crises of tabes. He says that the promotion of the free passage of bile to the intestine and the prevention of concentration and stagnation in the gall-bladder is thought to be favored by the giving of some of the soda salts, as the sulphate or phosphate, in doses of from 1 to 2 dr. daily. Oleate of soda in pill form has received the indorsement of Robson in cases that declined or were unfit for operation. The attempts to dissolve the gallstones *in situ* have not thus far been successful. Something may be accomplished in the way of prophylaxis by regulation of diet, prescribing regular exercise, the use of saline purgatives, and care of the general health; but after all the case is almost always sooner or later sure to come into the hands of the surgeon, and it is far wiser to call him in early as soon as the diagnosis is established and together to determine on the future course rather than to wait till some serious complication has arisen and the surgeon must work at a disadvantage.

New York Medical Journal, September 29, 1906.

Etiology of Uterine Fibroids.—D. H. Griffiths enumerates the clinical conditions under which fibroids of the uterus occur, suggesting that during the monthly congestion of the organ, one or more blood-vessels may have burst, owing to the inability of their delicate walls to sustain the increased pressure thus thrust upon them. The usual reparative processes following hemorrhages into tissue lead to the formation of a small bit of fibrous tissue. This acts as a foreign body, and more fibrous tissue forms around it and finally we have a fully-developed fibroid, large enough to be diagnosticated. It is possible that a subsequent decrease in size is due not to resorption of the mass but to a contraction of the fibrous tissue to the

smallest amount of space possible, just as any other piece of inflammatory fibrous tissue will contract. The contraction may also produce changes which usually follow when a part is not supplied with the necessary amount of blood.

Drugs in Diabetic Glycosuria.—A. C. Croftan enumerates the various drugs which at different times have been suggested for this malady. Concerning organotherapy he says that on theoretical grounds it should be efficacious in this disease, but however seductive the use of pancreas preparations or of combinations of pancreas with muscle or with liver or with salivary gland extract may appear, practically nothing of definite value has so far been observed from their administration. Pancreas is occasionally useful in the treatment of the steatorrhœa of diabetes, but it has no effect upon the glycosuria. The author has reported cases in which the boundary of tolerance seemed to be raised by the use of pancreas muscle extracts, but observations made subsequently in a larger number of cases have failed to support the first results. Liver extracts and brewer's yeast have all been used, but the optimistic claims advanced in the beginning have never been vindicated, although yeast often favorably influences the furunculosis of diabetes. Nevertheless, organotherapy appears to be a very hopeful field, and while nothing tangible has so far been accomplished, we may hope some day to discover an efficient organotherapeutic method of combating the disease. In regard to general tonics such as arsenic, quinine, etc., the author says he has never been able to observe from their use any effect on the general course of the disease or on the amount of sugar excreted though they may improve the anemic condition and possibly stimulate the nervous system to increased activity.

Pathological Physiology.—This branch of medical science includes, according to Byron Robinson, the field lying between normal physiology and pathological anatomy. It is the study of abnormal function. Its foundation stone is the diagnosis of functional deviation of abnormal visceral action. It presupposes a knowledge of normal physiology. It depends on laboratory methods for rational knowledge and practical application. On this basis the treatment of diseases consists in (1) the detection and removal of causes, (2) the regulation of visceral function by (a) fluids and (b) food, (3) habitat, (4) aeration, and (5) prophylaxis. The remainder of the paper is devoted to a detail of treatment under these respective headings. For visceral drainage by fluids, the author gives eight ounces of from one-fourth to one-half normal saline solution six times daily at two-hour intervals. Drainage by food is effected by cereals, vegetables, albuminoids (milk, eggs, buttermilk), and meats, the latter being limited, as they produce excessive uric acid formations. For a laxative, the author recommends the following tablet: Cascara, gr. 1-40; sodium bicarbonate, gr. 1; potassium bicarbonate, gr. 1-3; aloes, gr. 1-3, and magnesium sulphate, gr. 2. This combination is used as follows: One sixth to one tablet (or more as required to move the bowels freely once daily) is placed on the tongue and followed by eight ounces of water (better hot). Also at 10 A.M., 3 P.M., and at bedtime one-sixth to one tablet is placed on the tongue and followed by a glassful of any fluid. In the combined treatment one-third of the sodium chloride tablet (containing eleven grains) and one-sixth to three alkaline tablets are placed on the tongue together before each meal and at 10 A.M. 3 P.M., and bedtime, followed by a glass of fluid. The six glasses of fluid may be water, coffee, tea, milk, buttermilk, cream, eggnogg, in short any nourishment. This method of treatment furnishes alkaline bases (sodium, potassium, and ammonium) to combine with the free uric acid in the urine, producing perfectly soluble alkaline urates, and materially diminishing the insoluble free uric acid in the urine. Also the alkaline laxative and sodium chloride tablets increase the peristalsis, absorption, secretion, sensation of the tractus intestinalis, urinarius, vascularis, lymphaticus, genitalis, which aids secretions and evacuation.

Journal of the American Medical Association, October 6, 1906.

Rocky Mountain Spotted Fever.—H. T. Ricketts reports that he has succeeded by alternating inoculations of monkeys and guinea-pigs in perpetuating Rocky mountain fever, and in preserving the virus. He describes the symptoms in the animals experimented on, showing their identity as well as that of the pathological conditions with those observed in the human species. He has also tested the infectiousness of the various organs of the bodies of the animals. The animal was bled from the carotid to deprive it of all the blood possible, and then each organ was ground with sterile sand and suspended in a physiological salt solution. The emulsions of each were brought as nearly as possible to the same density, and 5 cubic centimeters of each were injected intraperitoneally into guinea-pigs, weighing from 350 to 550 grams. The greatest virulence seemed to be in the organs that naturally contained the most blood, such as the spleen, liver, and bone marrow. In the case of the bone marrow, however, he remarks that the difficulty of its preparation increased the chances of infection, which must be considered. The kidney, however, was quite as infectious as other organs, much richer in blood, which he suggests may be accounted for by an accumulation of microorganisms in it by reason of its excretory function. Ricketts has not heard of any authentic example of a second attack of spotted fever in man, hence, it seems probable that one attack renders the body immune. This was found by experiment to be the case in the monkey, and by reasonable analogy we may assume it to be so in man. He concludes his paper with an account of his observations of the life history of the *Dermacentor occidentalis*, which, in view of the suspicion attaching to the species as the carrier of the infection, is a matter of some importance. The observations were made under laboratory conditions, and he suggests that the various stages may not quite correspond in point of time, therefore, with those in the natural state. More complete observations will be published later.

Osteoplastic Resection of the Costal Arch to Reach the Vault of the Diaphragm.—Willy Meyer gives the history of two cases in which he employed resection of the costal arch, one of impermeable stricture of the esophagus, the other a case of sarcoma of the spleen in which it was impossible to reach the upper pole of the organ, tightly fastened in the vault of the diaphragm. In the second operation the seventh costal cartilage, representing the union of three, was divided close to its sternal attachment and the seventh, eighth, ninth, and tenth cartilages likewise, just in front of their union with the ribs. In cases of need, the ribs may be divided, further outward, including the fifth and sixth, and such modifications as are required can be made in the shape of the flap.

Tuberculosis of the Kidney.—A. D. Bevan calls attention to the frequency of the condition, to its diagnosis, especially by the *x*-rays, and examinations for the bacilli which he thinks pretty generally obviate the necessity of exploratory operations. He then points out that since in 90 per cent. of the cases the infection is through the circulation and is limited to one kidney, there is but one operation to consider and that is the removal of the diseased organ. He does not consider it necessary to remove with this the entire ureter, as its mucosa, though involved, usually recovers after the kidney is removed. Bevan states that he knows no more satisfactory results in the whole field of surgery than those obtained by early nephrectomy in the unilateral kidney tuberculosis.

Whole Milk versus Laboratory Milk.—A. McAllister points out that laboratory milk, understanding by the term every form of milk other than raw cow's silk or fresh cow's milk diluted and warmed to about 100° F., is in everything but its chemical composition, very far from being a duplicate of mother's milk. It lacks the living principle. The natural ideal substitute is fresh cow's milk, and drawn and handled with the care demanded by laboratory standards; cooled at once and kept cool, it possesses all the important vital constituents. Such certified milk can be supplied, he declares, if the public demands it.

The Lancet, September 22, 1906.

Successful Treatment of Thoracic Aneurysm Threatening to Rupture Externally.—The patient of E. E. Young was a man of 43 years. A large pulsating swelling existed in the neck and upper thorax from the lower border of the thyroid cartilage to the third rib. On its upper and anterior aspect was a smaller swelling about the size of a hen's egg. The patient was put to bed, kept absolutely quiet, and the head fixed by means of sand bags, no pillow being allowed. Diet was restricted for a few days. The iodide was begun in ten-grain doses and rapidly increased, so that by the end of three weeks the patient was taking

a dram three times daily with no ill effects. Collodion was painted over the swelling night and morning. In the course of ten days symptoms had considerably abated. At the end of six weeks he was allowed to sit up in bed, and in another month he left the hospital to resume work. There was no history of syphilis in the case.

Concussion of the Spine, with Some Remarks on Concussion in General.—The histories of six cases are given by E. M. Corner, who says that a distinction exists between concussion in general and that of the spine in particular. By the former he refers to cases in which shaking results from violence applied relatively at a distance from the part affected. In local concussion, as of the spine, the violence is applied close to the organ, the resulting shaking being not uniform or equable, but greatest near the site of the injury. With reference to theories of pathology the author prefers that of molecular disturbance and displacement. In slight shakings there is no gross anatomical lesion, but if there is greater violence exerted, there may be minute anatomical lacerations produced by the molecules, one upon another, and so, multiple hemorrhages. True concussion of the spine is a very rare injury, for the cord is tethered on both sides by the nerves and ligamentum denticulatum so that it cannot come into contact with the walls of the cavity in which it lies. In the case of the brain, it is anchored at its base, but its upper part can make considerable excursions. The *contrecoup* lesion of the brain does not have any parallel in the case of the cord. The author refers to one case in which fracture of the axis as determined by the *x*-ray produced a local spinal concussion. The same result followed a fracture of the fifth cervical vertebra. He also refers to three cases of what he calls marginal concussion. Whenever there has been a serious lesion of the cord, the segments immediately above and below the seat of the injury will be concussed. This concussion is frequently masked by the presence of a hemorrhage. He considers it quite possible to recognize the concussion which accompanies and is above a gross spinal injury, always provided it is not obscured by a hemorrhage.

Boric Acid and Appendicitis.—R. Harrison refers to the statement made with some authority that the frequency of appendicitis in recent years has been augmented by the large use of boric acid and other chemicals used as food preservatives. The usual symptoms referable to this cause are severe dyspepsia and flatulency. He has always thought, he says, that some mechanical disturbance connected with digestion would be eventually determined as playing an important part in the causation of appendical inflammations. He says it may be assumed that the appendix takes no part in the digestive or intestinal function and is not structurally or physiologically fitted for it; in fact, it would appear that any attempt to use it as a receptacle for either the natural or accidental contents of the canal may be the first step in the process which eventually ends in inflammation of this blind and rudimentary sac. Anything entering it, gaseous or otherwise, must be incapable of "moving on," and unless regurgitation haply and fortunately takes place the imprisoned contents are liable to undergo active bacterial decomposition with the evolution of foul and irritating gas. The initial lesion which probably renders appendicitis possible is the opening or blowing out of the appendical canal to such a degree as to render it accessible to the contents of the intestines as carried along by the ordinary and extraordinary means of propulsion technically known as peristaltic action. When this condition has thus been fairly well established the ease and even life of the appendix, not to say anything of the individual, are liable to become precarious. In this sense flatulent dyspepsia, however produced, may lead up to an appendicitis.

Stammering and Its Treatment.—R. A. Worthington divides the common forms of stammering into two main varieties. (1) A complete arrest before some initial letter. This form occurs in nearly ever case and is most common on the explosives. According to the hypothesis we have adopted the check is due to a delay in throwing in the vocal element on or just after the explosion. (2) An indefinite prolongation of an initial consonant. This occurs at friccatives (*f, l, s, etc.*) and nasal resonants, and is not so constant a feature as the first. A stammerer cured is not the same as a man who has never stammered. Without incessant watchfulness on his part he is certain to relapse. General principles of treatment may be summarized as follows: (1) Any local physical defect in any of the organs of speech should be remedied. (2) We should determine in what part of the mechanism the disturbance primarily arises and which of the phenomena are secondary. (3) The latter may be disregarded but the former call for exercises in the proper mode of breathing, and management of air supply. (4) We should endeavor to induce in the patient a constant habit of speech in which rhythmical pronunciation plays a prominent part.

British Medical Journal, September 22, 1906.

Treatment of Chronic X-Ray Dermatitis—I. H. Harris has been a sufferer from this lesion, his fingers being chiefly affected. He tried all sorts of remedies without any benefit. Eventually he dispensed with salves and resorted to very fine sandpaper, which he used at first daily and subsequently less often, with marked benefit. He had a couple of painful warts and small ulcers which would not heal and which caused excruciating pain. These were excised, and although the healing occupied three times the normal period, the eventual results were most gratifying.

Pulmonary Abscess Caused by a Tooth.—The patient of J. D. Davies was a young woman, complaining for seven months of pain in the right side of the chest, cough, and expectoration. All the symptoms pointed to tuberculosis. In a violent fit of coughing she raised, in a large discharge of pus, a second bicuspid tooth which had been extracted about the time her symptoms began and which must have been drawn into the glottis while she was under gas, lodging in one of the divisions of the right bronchus and causing abscess formation. Its expulsion relieved all symptoms.

Simulation of Mastoid Disease.—S. Paget reports two cases. One was that of a young woman, a hospital nurse, with a slight discharge from the left ear, with alleged severe pain over the mastoid. Her temperature began to rise every evening and operation was thought of, but it was found that while the temperature was 104° in the axilla, it was normal in the mouth. In ten days the temperature became steady, the patient ceased to complain of pain, and appeared in perfect health. The other case was also that of a nurse with symptoms similar to the above. She was known to be hysterical and a chloral habitué. On her admission to the hospital she had the appearance of a case of meningitis or cerebral abscess. It was not deemed prudent to leave her without operation, so the mastoid antrum was opened but no pus found. In the course of the next few weeks her condition became normal, but it was learned that a year later she was admitted with the same symptoms to another hospital, unable to walk or stand, hardly able to speak, and wearing spectacles not made of lenses but of plain glass.

The Significance of Some Enlargements of the Thyroid Gland.—A. F. Martin presents the following conclusions: (1) A call for increased functional activity is sufficient cause for simple enlargement of the thyroid gland. (2) Such a call is frequently given by the metabolism of the organism in connection with growth and development, with the performance of the uterine functions in the female, and with the chlorotic conditions of young girls. (3) The phases of enlargement of the thyroid included under the term "thyreocele" are a response to such an appeal from one or more of the above causes in an individual whose thyroid function is feebly performed. (4) As undue physiological activity is a potent cause for pathological change, so this simple hypertrophy, when necessitated for prolonged periods, lays the foundation of the pathogenesis of the degenerate cystic and adenomatous bronchocele. (5) There is often some influence exerted by heredity upon the thyroid function.

Berliner klinische Wochenschrift, September 17, 1906.

Toxic Nystagmus.—Weyl says that nystagmus has been observed in certain cerebral conditions such as meningitis, multiple sclerosis, Friedreich's disease, brain tumors, and cerebral injuries. It also occurs in about 5 per cent. of coal miners, and compositors, sometimes, though rarely, exhibit it. The author describes a form which he says has not yet been mentioned in the literature and which he terms toxic nystagmus. He was able to observe this condition in about 8 per cent. of a very large number of rabbits subjected to experiments in which poisoning was induced with phenol, cresol, and allied substances. The symptom was evoked on the administration on the average of one gram or less of the poison per kilogram of body weight, and usually appeared within forty minutes of the injection of the poison toxic agent. It lasted from a few minutes to over an hour. It is suggested that the constituents of coal tar may have something to do with the occurrence of nystagmus among miners.

Münchener medizinische Wochenschrift, September 18, 1906.

The Precipitate Reaction.—Fornet presents a preliminary communication on what he terms the precipitate reaction to distinguish it from the precipitin reaction. It

is a reaction depending on the presence of precipitinogens in the blood of typhoid patients and is intended to enable the diagnosis to be made at a time preceding the appearance of the Widal reaction. It is carried out by mixing the serum of the patient with the serum of a rabbit that has been immunized by repeated injections of typhoid bacilli. The precipitate obtained is slight and requires careful control tests, but is said to be sufficiently distinctive for practical use. The author has applied the test in six cases of typhoid fever and in each instance obtained a positive result before the Widal reaction appeared, while observations on other febrile disorders were negative. In one case the author has been able to obtain the reaction in the urine, and he expresses the hope that it will be found possible to use this as the routine material in diagnostic work. A further description of the technique is promised for a later paper.

An Instance of the Transmission of Measles to a Distance by a Third Person.—Siegert says that it is generally accepted that measles is transmitted only very rarely through third persons and then only through very short distances. He has been able to find one instance, however, in which the contagium was transported by a third person who visited a patient while in a hospital for another condition, and he describes a somewhat similar case occurring in his own practice. The patient was a child under hospital treatment for marasmus and it was infected with measles by its mother, who had a fifteen minutes' walk from her home to the hospital. Several other children were sick with measles in the patient's home. The attack was a perfectly typical one, the prodromes appearing on the eleventh day and the exanthem on the thirteenth day after the exposure.

Vaginal Celiotomy.—Dührssen rehearses the advantages of anterior colpoceliotomy, as he terms it, and inveighs against those who are slow to take up his plan of procedure. He lays particular stress on the value of his retroversion operation, which consists in a modified vesicofixation, a silkworm gut suture being passed through the vagina, vesical peritoneum, and uterus. This suture is removed at the end of six weeks. The author states that he has records of over one hundred normal labors that have taken place after this operation. Dührssen considers that no practitioner should allow one of his patients with retroflexion to be subjected to either the Alexander operation or a laparotomy, the objection to the first being its ineffectiveness, and to the second the unnecessary gravity of the operation. He then reviews the possibilities of the anterior vaginal incision in the treatment of other uterine and pelvic conditions, and asserts that the pelvic organs can be rendered just as accessible to sight and touch if his technique is followed as through a laparotomy incision. He has now carried out his operation in 1600 cases with a total mortality of 2 per cent., and he uses it in 80 per cent. of his gynecological cases in which the abdominal cavity must be opened.

Deutsche medizinische Wochenschrift, September 20, 1906.

The Occurrence of Metallic Mercury in the Human Body.—Schmidt describes the case of a young man of twenty-six years, who four years previously had had his right leg amputated, owing to injuries received in a railway accident. When seen by the author he presented on the anterior surface of the right thigh an infiltrated area about two by three inches in size. Several fistulous openings had perforated the skin over this area and were discharging a small amount of seropurulent secretion. The supposition was that a hypodermic needle might possibly have broken off at the time when the amputation was done and been retained in the tissues, but on making a radiograph the infiltrated area was seen to contain a very large number of minute spherical foreign bodies. The skin and underlying tissues in the region in question were excised, and on cutting into the mass the foreign bodies were found to be globules of metallic mercury varying in size from 1-3 mm. in diameter and aggregating about 0.5 gr. in weight. It was impossible to discover in what manner the mercury had entered the patient's body, for apparently he had never received mercurial medication either subcutaneously or in any other form. The author reaches the conclusion that although the patient denied syphilis he must have at some time been treated for this disease by means of hypodermic injections of some mercurial preparation.

The Radical Operation for Carcinoma of the Larynx.—Bruns reviews the history of this operation which has shown its greatest progress only within comparatively recent years. A series of 188 total extirpations of the larynx performed during the years from 1873 to 1894 were attended by a mortality of 44 per cent., 32 per cent. of recurrences, and only 12 per cent. of the patients remained cured for a year or more. Bruns found that 114 cases of thyrotomy performed since 1890 were attended by a mortality of only 9 per cent., 22 per cent. of recurrences, and a cure lasting a year or more in 48 per cent. This improvement he considers is due largely to the fact that the diagnosis is made earlier and that the laryngectomy is only partial instead of total. Bruns performs his own operations under scopolamine-morphine anesthesia supplemented by local anesthesia, and does not leave any tube in the trachea. He considers that the endolaryngeal operation advocated by some laryngologists is ill advised, and is of the opinion that the external operation is to be preferred in all cases.

Spinal Anesthesia in Gynecology and Obstetrics.—Baisch, who has employed this method in 150 cases, including forty laparotomies, says that the chief objections to it as ordinarily performed are the following: If the dosage selected is within the limits of absolute safety anesthesia is not always secured to the requisite degree. The after-effects in the form of headache and vomiting are sometimes so severe as to be a serious matter for the patient. The retention of consciousness is a distinct disadvantage, especially in laparotomies requiring the elevated pelvic position. By the technique employed in the author's clinic these objections are met satisfactorily, and he considers that the method deserves a permanent place as a routine procedure. In order to avoid the after-effects it is necessary to exercise a certain amount of discrimination in the selection of patients. Individuals having a tendency to headache or to gastric disturbances are not suitable subjects for lumbar anesthesia. It is to be hoped that the chemists will succeed in producing anesthetics for use in this way which shall be free from all undesirable effects. The combination of scopolmaine-morphine narcosis with spinal anesthesia obviates the other difficulties, for when given in combination in this way, none of the drugs require such heavy dosage as is necessary when they are used alone, while at the same time the patient is in a somnolent condition throughout the entire course of the operation. The technique is described in detail. The method is not suitable for obstetric practice, however, owing to the weakening of the abdominal musculature which it entails and the comparatively short duration of the anesthesia.

French and Italian Journals.

Infantile Nocturnal Incontinence Due to Urinary Hyperacidity.—G. Carrière and L. Caudron declare that the pathogenesis of essential infantile incontinence of urine is very complex. The causes of this condition which have been recognized are legion and one of the least known of them is urinary hyperacidity. The writers after extensive observation of cases of this nature emphasize as the cause of the condition an abnormal increase of urinary acidity. In order to combat this condition, they prescribe the internal administration of alkalines in the form of bicarbonate or phosphate of soda. It should be remembered that when liquids are cut off from the evening meal the urine, which is less abundant, will be richer in urinary acid. The function of elimination of the skin should be encouraged by means of dry friction or by alcoholic rubs, by massage, or by the various methods of hydrotherapy. The treatment should be sufficiently prolonged to prevent a recurrence. It seems to be difficult to give exact limits to the duration of the treatment by the alkalines, but it should continue in rather large doses for at least two months. Not until the amount of urinary acidity falls to less than two grams during the twenty-four hours that the doses should be diminished gradually. Speaking in general, the treatment should extend over an approximate period of from five to six months.—*Le Nord Médical,* July 15, 1906.

A Study of Macrosomia in Infants at Birth.—Achille Guglielimi has made a study of macrosomia from the records of the obstetric hospital of Milan, in which he found histories of some 250 cases. His conclusions are given us. Children that weigh more than 4,000 grams are not rare. The study of these children includes the periods of pregnancy, labor, and early life. The causes of overgrowth of the fetus are various: heredity, number of pregnancies of the mother, duration of pregnancy, life conditions of the mother during that time, health and occupation of the mother, length of the interval since last pregnancy, and sex of the fetus. Diagnosis of excessive size may be made during pregnancy from the history and examination of the patient. Usually the pelvis is roomy enough to permit of delivery, but a considerable number of instrumental deliveries are necessary, while the labor is apt to be tedious and inertia is frequent. The placenta as well as the child is larger than normal in these cases. There are more males than females among these children. During the first few days of life there is a marked decrease in weight of these children, and growth begins slowly and after a longer interval than in other cases. The prognosis for the mother is better than for the child.—*Annali di Ostetricia e Ginecologia,* May, 1906.

Book Reviews.

A Compend of Pharmacy. By F. E. Stewart, M.D., Ph.G., Charter Member of the American Therapeutic Society; Formerly Lecturer and Demonstrator of Materia Medica and Pharmacy, Jefferson Medical College, Medico-Chirurgical College, and Woman's Medical College of Pennsylvania, Philadelphia, etc. Based upon Prof. Joseph P. Remington's "Text-Book of Pharmacy" and the United States Pharmacopœia, Eighth Revision (1905). Sixth Edition, Revised and Enlarged. With a Very Complete Index and Table for Converting English Measures into Metric and the Reverse. Philadelphia: P. Blakiston's Son and Company, 1906.

This compend is intended for the student of pharmacy, but medical students will find in it much useful information presented in clear and concise form. It will make a capital adjunct to any text-book on Materia Medica, and is well calculated to help the student in preparing for an examination.

Grundriss der Orthopædischen Chirurgie, für Praktische Aerzte und Studierende. Von Max David, Berlin. Second Edition. Berlin: S. Karger, 1906.

This work was written to meet the necessity for a book containing the elements of orthopedics, which shall be practical and meet the requirements of the practitioner and medical student in this field of medicine. Only those methods have therefore been described which can be readily carried out by the practitioner, and theoretical descriptions have only been introduced in so far as they were deemed necessary to explain the manner of treatment. All the expensive apparatus which is to be found in the special hospital has been excluded, and the practicability of the simpler varieties and their successful use is urged upon the general practitioner. In the second edition certain changes have been made in accord with the progress of this branch, and some new material has been introduced. The illustrations are numerous, but many of them are poorly executed. There is one of a "Yury cast" which is particularly poor. The text of the work is clear and concise, and a great deal of information is crowded into the pages of the book.

Gastric Surgery. Being the Hunterian Lectures Delivered Before the Royal College of Physicians and Surgeons in 1906. By Herbert J. Paterson, M.A., M.B., B.C., F.R.C.S., etc. New York: William Wood and Company, 1906.

Although stated to be lectures, the subject matter of this little book is presented in such a form that it constitutes an excellent text-book on the subject indicated. One of the most important points made by the author is to be found in the preface, where he states that the results obtainable in gastric surgery are far better than one would be led to expect from the text-books. This is undoubtedly true, and the pessimism which exists particularly with reference to cancer of the stomach should be dispelled. Although the stomach is more frequently affected by this disease than any other organ of the body, gastrectomy is truly stated to be one of the most infrequent surgical operations. In its early stage this is a strictly localized disease, and as we are now possessed of fairly accurate methods of diagnosis, early operative removal should be more frequently instituted than has hitherto been the case. An appendix contains a complete description of gastrojejunostomy, which is very useful, and there are tables from which the author has drawn his conclusions as to the value of various gastric operations. The book can be recommended to the general practitioner as a useful review of the subject indicated on the title page, and since, unlike many others, it is international in the sense that it recognizes the work of others besides those of the writer's nationality, it will undoubtedly meet with a favorable reception.

An Essay on the General Treatment of Spinal Curvatures. By Heather Bigg, F.R.C.S. London: J. and A. Churchill, 1905.

This book is issued as an installment of a more comprehensive work by the same author, entitled "Deformities, Debilities and Deficiencies of the Spine," and consists of a statement or general review of the principles which underlie the successful treatment of these afflictions. From a perusal of the book it becomes evident that the treatment can be successful only if the author's methods are used, as he takes occasion to impress on the reader at various opportunities, and the book furnishes an example of the personal effort in medical literature which we do not remember to have seen equaled except perhaps by some of the German writers. The essential point in Bigg's treatment seems to consist of the wearing of a brace of his own devising during the day and a plaster corset or similar contrivance at night. A considerable portion of the book is taken up with a review of other methods of treatment, but none of these seems to compare in efficiency with the writer's, and the contentions of Sayre especially are very severely criticised. Bigg's book is strongly opinionated, which necessarily would point to a large personal experience in the specialty referred to, and a more concrete account of the many successes which he claims have resulted from his treatment would be expected. But after all the "scolding" only a solitary case is cited as an illustration of his many claims to distinction.

The Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P., Fellow of University College; Emeritus Professor of Medicine and Clinical Medicine at University College; Consulting Physician to University College Hospital and to Brompton Hospital for Consumption and Diseases of the Chest; Ex-President of the Medical Society of London; Ex-Censor, Lumlerian Lecturer, and Harverian Orator at the Royal College of Physicians of London; Formerly Examiner in Medicine for the Conjoint Board, University of London, Victoria University, and Oxford University. In Two Volumes. Tenth Edition. London: H. K. Lewis, 1905.

The appearance of a new edition of this standard treatise will be welcomed by many practitioners who remember with pleasure and gratitude the help derived from the study of it in their early professional life. The editions formerly succeeded one another with the usual rapidity of a popular work, but the interval since the publication of the ninth edition has been so long that the present revision comes almost as a new book. Those familiar with the work from the beginning, however, will recognize in this modernized edition an old friend rejuvenated; all the charm of the old-time treatise, in which the author's personality was impressed on every page, is present in this new version, which is at the same time in its essential features thoroughly modern and up to date. It is a little weak, perhaps, in the sections on etiology and bacteriology. The remark in the chapter on Scarlet Fever, for example, that "possibly contagion may gain an entrance by defective drainage" is rather suggestive of the past; in treating of Smallpox more or less is said of the different bacterial forms that have been found, but the barest mention is made of the possibility of a protozoan parasite, and nothing whatever is said of the work of Councilman and others in this country along that line; and under Syphilis a couple of bacillary finds are noted, but no mention is made of the spirochete. The statement that among the personal factors promoting the occurrence of yellow fever is "exposure to night air and dews" has also a rather antiquated flavor, although the author cautiously admits that "the mosquito theory is said to fit in with well-recognized facts in connection with epidemics." These defects in an otherwise superb work render it unsuitable as a text-book for students, but detract little from its utility as a guide for the practitioner who values a work on medicine chiefly for its sections on diagnosis and treatment. In this respect it maintains all its former superiority. Here the writer's individuality is conspicuous and the reader has the benefit of the life-long experience of an acute and able practitioner. As the author says, the work embodies his personal experience and opinions in relation to a large number of subjects which he has had special opportunities of studying, and it is this which render the book so valuable to the practitioner, as distinguished from the undergraduate; it is essentially a treatise for post-graduate study, and as such it cannot be too warmly commended.

Ellis's Demonstrations of Anatomy. Being a Guide to the Knowledge of the Human Body by Dissection. Twelfth Edition, Revised and Edited by Christopher Addison, M.D., B.S., F.R.C.S. New York: William Wood and Company, 1906.

But little can be said in added commendation of this book, which has constituted a popular guide for dissecting among medical students both here and in England for many years. In the present edition all the well-known features have been retained, but the advances made by the science of anatomy have necessarily produced appropriate changes. The subject matter has also been rearranged so that it follows the course of dissection now ordinarily practised by students, beginning with the simpler anatomy of the upper and lower limbs and ending with the more complex parts of the head and the body cavities. There are numerous illustrations, many of them in color, and the book is well made. It will no doubt continue to be for many years an efficient aid for the medical student in the dissecting room.

Society Reports.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, Held at Cincinnati, September 20, 21, and 22, 1906.

Dr. John Young Brown of St. Louis, President.

Kidney and Colon Suspension by the Use of the Nephrocolic Ligament and Gerota's Capsule.—Dr. Howard W. Longyear of Detroit described this ligament as formed by an aggregation of fine fasciculi originating in and identical with the fibrous tissue forming the framework of the fatty capsule of the kidney, which, after enveloping the kidney in a fine network, passed downward and were inserted into the posterior wall of the ascending colon on the right side, and the descending colon on the left side. Its structure, as well as its action, might be compared to that of the network covering a balloon, the cords of which descended downward and supported the car. The kidney was the balloon and the cecum the car; the kidney descended or not, according to the laxity of its supports and the degree of traction exerted on it by the cecum. The writer claimed that the traction thus exerted on the kidney by the bowel was the prime factor in the causation of nephroptosis, and as the duodenum was also displaced by reason of its adherence to the fatty capsule, the first object of attainment in any operative procedure should be the suspension of the bowel. To do this he isolated the nephrocolic ligament through the usual incision (though shorter) in the loin and slung up the bowel by overlapping and sewing flaps made from Gerota's capsule through the loop of the ligament. This also held the kidney in suspension, but this object he considered second in importance to the suspension of the bowel.

Fixation of the Kidney by Shortening of the Nephrocolic Ligament.—Dr. Charles A. L. Reed of Cincinnati presented a brief clinical report of cases operated upon by the application of the principle, but a modification of the technique, presented by Dr. Longyear at the meeting last year. The essential modification of the technique consisted of the control of the nephrocolic ligament through an oblique incision in the intercostal interval.

The Technique of Kidney Fixation.—Dr. J. Henry Carstens of Detroit pointed out that to fix a kidney permanently it was necessary to resect the fibrous capsule and fix this firmly to the muscle as near to the normal position as possible. Only in this way could a kidney be firmly and permanently fixed. He described a simple operation which he said could be done in ten minutes through a very small opening, and which would give permanent results, and it seemed to him an ideal method of permanently fixing a kidney.

Dr. Herman E. Hayd of Buffalo said it was not possible to fix a kidney unless one delivered it so as to produce a certain amount of adhesive union between the kidney and the loose structures which it had occupied so long.

Dr. Earl Harlan of Cincinnati called attention to the very wide range of pathological anatomy attendant upon kidney dislocations, and showed that operative procedures must be based upon a correct rearrangement of the normal anatomy of the parts in the right upper quadrant.

Porro Cesarean Section for Pregnancy with Complicating Fibroids.—Dr. James F. Baldwin of Columbus, O., said that, in cases of pregnancy complicated with fibroids, unless the latter were so small as to be negligible, a maternal mortality of over 30 per cent. and a fetal mortality of probably 50 per cent. obtained. Porro cesarean section, with proper surroundings and competent operator, should give a maternal mortality of only about 5 per cent., and practically no fetal mortality whatever. Hence this operation should be uniformly advised in this class of cases.

Uterine Fibroids Complicating Pregnancy.—Dr. Marcus Rosenwasser of Cleveland, O., offered a report of a Porro cesarean section successfully terminated as an additional contribution to papers peviously read before the Association and published in its Transactions of 1896 and 1899. In this case the pelvis was obstructed by an immovable subperitoneal fibroid located in the posterior wall of the lower uterine segment. The operation had been planned for the onset of labor at term, but owing to rupture of membranes and prolapse of cord became an emergency operation at the beginning of the ninth month. Mother and child were saved.

Dr. E. Gustav Zinke of Cincinnati said he had delivered two women in whom tumors were discovered after delivery, not before. The tumors were intramural, very small, one the size of a walnut, the other the size of a hen's egg. In the first case of interstitial fibroids he had seen the woman had been in the hands of a midwife, and when it was found impossible to effect delivery in the usual manner the speaker was called in and did a cesarean section. The fetus had been dead for some time, and the woman died within forty-eight hours of sepsis. When pregnancy was far advanced a fibroid tumor was an extreme source of danger to the woman, especially if it was subperitoneal.

Dr. Oscar H. Elbrecht of St. Louis mentioned a case of fibroid tumor complicating pregnancy at the fourth month. It was subperitoneal and situated in the anterior uterine wall. He removed the tumor and the woman went on to full term.

Dr. Robert T. Morris of New York operated for the removal of a subperitoneal fibroid at the fifth month of pregnancy in a patient who was having a miscarriage. He operated with a desperate chance of trying to save the child. The patient was nearly fifty years of age, this was her only pregnancy, and a great deal depended on the birth of a child in the family. The labor pains ceased after he had removed a fibroid about as large as his fist; she went on to full term and was delivered of a living child.

Dr. Edward J. Ill of Newark, N. J., did not think the impression should go out from the Association that every woman who had fibroids ought to have the uterus removed or a cesarean section done. The indication should be drawn closely. If there was obstruction in labor, then operation was indicated. With all the cases he had seen—he did not recall how many—he had only once done a cesarean section for fibroids.

Dr. Joseph Price of Philadelphia said that these cases, when recognized early, particularly those with pedunculated fibroids, if they fell into the hands of skillful operators, could be operated and the fibroids removed, the patient going on to term and without premature deliveries or abortions. He cited several cases in point.

Dr. Frederick Blume of Pittsburg cited a case in which he did a supravaginal hysterectomy for a fibroid tumor complicating pregnancy.

Dr. Hugo O. Pantzer of Indianapolis cited a number of cases of fibroid tumors complicating pregnancy. He was called to see the first after the expiration of ten days. The woman had given birth to a little child; had developed fever, and at this time was passing a fibroid which had become gangrenous. In the second case he had been called to deliver a woman who had been in labor forty-eight hours. A large tumor was found located at the fundus, and within four days this tumor sloughed away. In the first case the sloughing fibroid was removed with forceps; the patient made a good recovery and has since again become pregnant. In the second case the tumor gave evidence of sloughing on the third day after delivery, and within twenty-four hours he operated per vaginam, removed the fibroid, and the woman made a beautiful recovery.

Dr. J. Henry Carstens of Detroit said that fibroid tumors were quite frequently detected during pregnancy. If one found a small fibroid in the cervix which caused symptoms, it could be removed per vaginam; this would

save the woman a severe labor. If the fibroid was a large one and situated higher up, and there was likelihood of its interference with labor, one could operate and remove the tumor whether the woman was three or six months advanced in pregnancy, and save her future trouble. If the uterus contained multiple fibroids and there was good reason to suspect considerable trouble on account of their interference with pregnancy, he thought it would be well to do either an abdominal or a supravaginal hysterectomy, according to the particular case. If one was required to do a cesarean section, and there was a very large fibroid to deal with, the fibroid should be removed and the uterus saved.

Abdominal Section for Trauma of the Uterus.—Dr. Charles E. Congdon of Buffalo, N. Y., related a case in which there was puncture of the nongravid uterus, with prolapse of the bowel; as a result of violent traction sixteen inches of gut was torn away. Abdominal section, with intestinal anastomosis, was resorted to promptly, and the uterine laceration repaired; this was followed by recovery of the patient.

Dr. Edwin Walker of Evansville, Ind., reported a case of rupture of the uterus with prolapse of the intestine. When called, he found a handful of intestine presenting at the vulva. This he replaced in the vagina, applied a tight binder, removed the woman to a hospital, opened the abdomen, and found that a length of thirty-one inches by actual measurement with mesentery was torn away. He resected the intestine, used a Murphy button, did not employ any sutures in the uterus, as the parts fell together so well, then closed the abdomen, and the patient made a good recovery.

Dr. Rufus B. Hall of Cincinnati believed perforation of the uterus was not infrequent, especially in cases of abortion. He had a curious experience in his service at the Presbyterian Hospital a few years ago. Within eight days he had five patients in the charity ward with perforated uteri who had produced abortions on themselves. These patients were suffering from various stages of infection. All of them were treated, when there was pus present, by vaginal section; three recovered and two died.

Dr. James F. Baldwin of Columbus, Ohio, related a case which he saw in consultation with Dr. Hall many years ago, the patient having punctured the uterus in trying to bring on abortion. There was an enormous amount of pus discharged through the vagina, and the woman promptly recovered. He related other instances of perforation of the uterus.

Dr. Walter B. Dorsett of St. Louis said that if asked to attend a case in which there was perforation of the uterus, produced by an abortionist, he would not hesitate to operate. He recalled one case of rupture of the uterus in labor in which nothing was done. The intestine was pushed back and the woman made a very good recovery.

Dr. John Young Brown of St. Louis said that in spite of the teachings of military surgeons, civil surgeons were beginning to realize the importance of penetrating wounds of the abdomen. It did not matter whether the penetration was caused by the curette or a bullet, or was the result of a stab wound, the consensus of opinion among civil surgeons was that all such wounds should be explored.

The Rectum In Its Relation to Diseases of Women.—Dr. H. O. Pantzer of Indianapolis said that the experienced gynecologist was conscious of an important interrelation existing between the rectum and the female genitalia, both in health and disease. A faulty function of either of the relevant organs might arrest or modify the function of its neighbor. Chronic constipation, at times, affected the quantity, frequency, or course of the menstrual flow. The rectal temperature in pelvic diseases had special significance, but the oral temperature was often misleading. The rectal temperature might be anywhere from one-half to three degrees more than the oral temperature. Textbooks were singularly silent on this differential reading.

The Trend of the Times in Appendicectomy.—Dr. N. Stone Scott of Cleveland, Ohio, dealt with the early history of this operation, after which he expressed himself as being fully convinced that the next step in progressive surgery was the perfecting of the technique, with an eye single to the best interests of the patient, even to the smallest detail. Mere recovery was no longer all-sufficient. The ideal condition was health. Operation approached the ideal in proportion to its elimination of time, pain, and danger in illness. These undesirable elements might be more surely and fully eliminated than we had been accustomed to think possible, if in addition to the essentials heretofore considered necessary due attention was given to certain points which had been too long neglected. The first of these was the choice of anesthetics, but the ideal anesthetic had yet to be discovered. The incision should be large enough to give access to the field of operation. The extent of the skin incision was of no importance, except for cosmetic effect. In aseptic cases the fascial separation should be only sufficient to admit the tip of the index finger. This was crowded through the soft parts, which were easily dilated to admit the entire length of the finger. Given an anesthetic with little, if any, attendant nausea, an incision so short as to close of itself, there was no physiological reason for the recumbent posture. But the ideal operation could be performed only upon an ideal patient; one who was intelligent, obedient, hopeful, and of good recuperative ability, both mental and physical, having well-developed muscle and fascia, without excess of fat, and a movable appendix with a good mesentery; one whose condition was uncomplicated by intercurrent disease or by severe sequalæ, the result of previous attacks.

Points Commonly Contested in the Diagnosis and Treatment of Appendicitis.—Dr. Joseph Price of Philadelphia had found in the reports of some good hospitals that patients suffering from this disease remained in the medical wards until dead, no surgical efforts being made to save them. This simply meant that the pure clinician did not yield the point that it was a surgical affection. It also meant that a clinician had not a precise knowledge of pathology; that he had not served his apprenticeship as a resident or an aid to a surgeon. When the operations for appendicitis were complete, reopenings or secondary operations for a variety of complications were not necessary. One prominent operator reported twenty-four cases of ileus in his work. This simply meant that his work was defective. Waiting and watching should not be taught or practised either in private or public under skilled or unskilled observation. Most good surgeons admitted that they were distressed and unhappy while watching and waiting in an appendicitis that had not been operated upon. A perforation, a spreading infection did thrice more harm, and killed thrice as many patients as an inexperienced operator in an early operation; the patient's chances were lessened by holding off until a well- or illy-defined multiple abscess or abscesses had formed.

The Diagnosis and Surgical Treatment of Injuries to the Diaphragm.—Dr. John Young Brown of St. Louis selected this subject for his presidential address. From a careful analysis of the cases coming under his observation he was convinced that there were present in but few of them symptoms on which a positive diagnosis of injury to the diaphragm could be made, and that in many cases when extensive injuries to the abdominal viscera were present the patients were apparently in excellent condition, and presented practically no symptoms. He believed, therefore, that in all penetrating gunshot or stab wounds of the chest, where from the location of the wound it was reasonable to conclude that injury to the diaphragm was possible, the existence or nonexistence of such injury should be determined by proper exploration. Positive symptoms in these cases were generally the signals of peritonitis, and peritonitis of this character was usually fatal. If this view was correct, how should we explore through the chest or

through the abdomen? A penetrating wound of the diaphragm was a penetrating wound of the abdomen, and an exploration to determine the presence of such an injury which did not enable the operator to repair, if present, the associate injuries to the abdominal viscera should not be undertaken. To sew up an injured diaphragm and leave a perforated bowel or stomach would certainly prove disastrous. Through an abdominal incision the extent of injury to both diaphragm and abdominal viscera could be absolutely determined. If it was found that the wound in the diaphragm was so situated that it could not be repaired through an abdominal incision, thoracotomy could be done at the site of the chest wound, resecting an inch or two inches of rib. With the hand in the abdomen, the diaphragm could be pushed into the thoracotomy wound, making the work of repair quite easy. A method which he had found very useful in dealing with injuries of this character consisted of leaving both ends of the first suture long, using one as a tractor. This method enabled the operator to work through a very small incision, and would frequently do away with the necessity of resecting more than a portion of one rib. The mortality of this work would always be high. Many of these cases were mortally wounded when seen by the surgeon. There were, however, quite a few whose injuries could be repaired with satisfactory results if operation was undertaken early. He urged that more attention be paid to penetrating wounds of the lower chest, and that early exploration be undertaken as a routine procedure in all cases where injury to the diaphragm was suspected.

Reflex Dyspepsias in Abdominal and Pelvic Disease, and Their Surgical Treatment.—Dr. Herman E. Hayd of Buffalo, N. Y., said (1) the intimate nervous supply of the abdominal and pelvic organs often made one organ reflect and simulate symptoms which represented the disease of the other. Chronic appendicitis, retroversions, and floating kidney very frequently produced very marked dyspeptic symptoms. Gall-bladder disease and often stones without jaundice were treated for simple dyspepsia. (2) He made a plea for the more careful examination of operative cases. Frequently many organs were involved in the symptomatology, and the patient remained uncured because of incomplete surgery. (3) Serious stomach diseases producing various dyspeptic symptoms, such as ulcer, hourglass contraction, pyloric obstruction, chronic gastritis with dilatation and early cancer, should be placed among the curable surgical diseases and should receive the unquestioned benefits of early surgical interference.

Intestinal Obstruction Due to Gallstones.—Dr. Miles F. Porter of Fort Wayne, Ind., said that gallstones might obstruct the bowel in five different ways, obturation being the most usual form. The stone might get into the bowel through the common duct, but usually entered from the gall-bladder by obturation, via the duodenum, and might lodge anywhere from the pylorus to the anus, but in the majority of cases was found in the ileum. As a rule the gut was not damaged, but gangrene and perforation occurred if the obstruction was not promptly relieved. The symptoms were those of acute, but often not complete, obstruction of the bowel. A previous history of gallstone disease was found in most cases. The presence of a migrating tumor originating in the gall-bladder, or a stationary tumor of egg size and shape, and hard, was of great diagnostic value, but it was absent in most cases. Tenderness and rigidity were not present until late. Shock was not marked. Multiple attacks of bowel obstruction were significant of gallstone ileus. Exploratory incision was the best means of making the diagnosis in the majority of cases. The mortality was 50 per cent. This large mortality was due in no small measure to the advice given by many authors to delay operation until a fair trial of medical treatment, massage, etc., had failed.

Some Points in the Diagnosis and Treatment of Accidental Hemorrhage.—Dr. Adam H. Wright of Toronto said that several differences of opinion were prevalent as to both the diagnosis and treatment. The following procedures were conspicuous in this regard: Rupture of the membranes, plugging the vagina, accouchement forcé, and cesarean section. The mortality rate of accouchement forcé, when the patient was suffering from shock, and the uterus was tetanically contracted, was, in his opinion, 100 per cent. He knew of no operation in obstetrics or surgery respecting which one could speak more definitely. He had had no experience with vaginal or abdominal cesarean section for accidental hemorrhage. In the case of either concealed or combined internal and external accidental hemorrhage, with the patient suffering from shock and a cervix as hard as iron, any operation would probably be unjustifiable. It might happen, however, that internal hemorrhage was taking place into a uterus whose walls were stretching rapidly, and the loss of blood was the chief factor. If, in such an emergency, it was not possible to dilate the os and deliver soon enough to save life, some form of cesarean section might be advisable.

Diffuse Peritonitis.—Dr. John B. Murphy of Chicago reported thirty-six consecutive cases of general suppurative peritonitis from perforation, with one death. In treating this condition he emphasized the importance of relieving pressure and of instituting drainage, doing as little surgery as possible. The patient should be put in a sitting position both before and after operation, so as to keep the infective material out of the diaphragmatic zone. At the time of operation usually the patient had all the infection he could possibly carry; he or she, as the case might be, was handicapped, and it was the duty of the surgeon to eliminate that infection or intoxication as much as possible, and in doing so care should be taken not to abrade another square inch or half of a square inch of surface so as to admit more infective material. The patient should be tided over for a few hours and his local resistance built up by washing out the blood with normal salt solution. Antistreptococcic serum should be employed. Little or no food should be given, as what hastened absorption of infective material in the diaphragmatic zone was peristaltic action.

Abuse of Purgatives.—Dr. Edwin Walker of Evansville, Ind., said that purgatives were probably the most widely used remedial agents. They were used by the public and profession under widely adverse conditions. This promiscuous use was productive of much harm. Our knowledge of the physiology of the intestinal canal was painfully deficient and its pathology was not well understood. The best authors differed as to the physiological action of purgatives. There was certainly a close resemblance between infections of the intestinal canal and the action of purgatives. All of these considerations suggested care in the use of cathartics. In constipation purgatives were contraindicated; in diarrhea they were limited in value. Biliousness was too vague a term to be considered as an indication for their use. They should rarely be used in the preparation for surgcial operation, or the complications following. Increased knowledge would no doubt materially curtail their use.

A Consideration of the Factors Which Have Lowered the Operative Mortality and Have Improved the Postoperative Results.—Dr. X. O. Werder of Pittsburg, Pa., said, in summing up, the causes to which he attributed his better results, both in regard to operative mortality as well as postoperative morbidity, were: (1) A more simple and better aseptic technique, including the wearing of rubber gloves for all hands concerned in the operation. (2) Better diagnosis and more careful preparation of the patient, especially the acute inflammatory cases, whose abdominal section is delayed at least three weeks after the subsidence of all acute symptoms. (3) The employment of a trained, absolutely reliable first assistant. (4) Centralization of all operative work, enabling the operator to give the greatest

amount of personal attention to his patients. (5) The careful closure and covering of all raw surfaces in the peritoneal cavity. (6) The exclusive use of catgut prepared under personal supervision. (7) A trained anesthetist who administers a minimum amount of anesthetic consistent with good work.

The Management of Bowel of Doubtful Vitality in Operations for the Relief of Strangulated Hernia and Intestinal Obstruction.—Dr. Rufus B. Hall of Cincinnati said that the injured bowel in all these cases could be divided into three groups as soon as the operation had progressed to the stage where it could be inspected. (1) Those cases in which it was clearly evident that we did not have to make a resection; (2) those in which it was positively certain that a resection must be made; (3) those in which the surgeon was always in doubt as to the vitality of the injured portion of bowel. Whether it occurred in internal obstruction or in incarcerated bowel in a strangulated hernia, it was to the treatment of this uncertain condition that he desired to call attention. He had devised a means which had proved eminently satisfactory to him in a number of cases. The method consisted in employing a single layer of iodoform gauze about three inches broad, placing it against one side of the mesentery and carrying it over the diseased bowel until it rested upon the mesentery upon the opposite side, extending a couple of inches beyond the bowel of doubtful vitality upon each side; this loop of bowel surrounded by the gauze was placed just inside the abdomen. The wound was dressed by leaving one or two stitches untied; or if the operation had been for hernia, as an open wound, leaving the end of the gauze surrounding the bowel projecting out of the wound a foot or more, so there was no danger of losing it inside. The method was not applicable in all kinds of bowel injury, and was not advised except in certain definite conditions and surroundings. Cases were reported illustrative of the method.

The Utilization of the Broad and Round Uterine Ligaments in Supravaginal Hysterectomy.—Dr. Walter B. Dorsett of St. Louis pointed out that in impacted cases of myomatous uteri, as well as in large abdominal tumors of the uterus, a tendency to a shortening of the vagina followed the operation, and a sacculation of the bladder also was apt to ensue. This was obviated by folding the remaining portions of the broad and round ligament on themselves and attaching them to the stump of the uterus.

Some Observations and Experiences Respecting the Symptoms and Treatment of Atresia Vaginæ.—Dr. Augustus P. Clarke of Cambridge, Mass., said that inflammation occurring in the vaginal tract might become the exciting cause of atresia vaginæ. Adhesions of the labia or other parts in the vicinity might interfere with the normal parturition, if not prevent the menstrual flow. In atresia hymenalis the obstruction would usually be complete, and this gave rise to collections of blood or mucus high up in the vaginal introitus. Such a condition could be relieved only by surgical measures. The author had met with cases of atresia in which firm bands of cicatricial tissue had formed laterally between the middle and upper segments of the vaginal walls. Traumatic cases could often be cured by resort to operative measures. Congenital cases could not always be satisfactorily relieved. In those cases in which the uterus and Fallopian tubes were in a mere rudimentary condition, surgical attempts for relief would for the most part prove useless. In two cases in which the cause was due to extensive laceration and sloughing of the parts, on account of traumatic lesions during parturition, subsequent pregnancy failed to take place. In the treatment of cases in which surgical measures had been resorted to the employment of hard vaginal dilators and iodoform gauze was found to be of much benefit. In nearly all cases of the accidental or acquired atresia relief might be secured by operative treatment. In congenital cases radical means for relief would prove useless.

Preservation of the Vault of the Vagina in Pelvic Operations.—Dr. A. Vander Veer of Albany, N. Y., said that one could divide the life of a female into three periods —puberty, marriage and the birth of the first child, and the menopause. At the period of puberty we had to consider carefully the functions of the ovaries and malpositions of the uterus more particularly. At the time of her first confinement we had to consider the possible lesions that might present, notwithstanding the most earnest care on the part of the obstetrician. We should consider carefully the possible morbific changes that came at the time of the menopause. The paper dealt more especially with lesions produced when, in an operation, the vault of the vagina was encroached upon. In malignant growths the surgeon was in doubt in this region of the body as to how much normal tissue should be preserved. He was led to emphasize the axiom of practice to preserve normal tissues as much as possible, and under no circumstances to remove healthy organs. Vaginal hysterectomy for varied lesions of the uterus required separate consideration in each individual case, with due regard to postoperative contractures and disturbance of function of other nearby organs. This was seen at times in a constant dragging pain, due to disturbance of the sigmoid flexure and interference with the rich blood and nerve supply of the pelvic organs. Most commonly it was expressed in bladder or rectal conditions. In abdominal operations there was a difference in the nature of the procedure as between a malignant or non-malignant condition. Whatever method was adopted, he believed the one important object in view should be to bring the stump well up in position that it might hold the vault and fornix of the vagina, prevent sagging, and especially the dragging upon any of the nerve trunks or large vessels. The old extraperitoneal method of hysterectomy preserved the vault of the vagina very acceptably.

Peritoneal Adhesions.—Dr. Robert T. Morris of New York said that favorite fields for chronic peritoneal adhesions were the region of the cecum and appendix, the gall-bladder, the sigmoid region, and the pelvis. He thought the greatest amount of disturbance calling for attention on the part of the surgeon was caused by adhesions in the region of the gall-bladder, for in this region we were near the great semilunar ganglion, and the organs in the vicinity of these adhesions were more movable than those in the vicinity of the other common groups of lesions. Next in the order of importance he believed to be the group of adhesions in the region of the cecum and appendix. Adhesions in the pelvic region, although extremely common, did not call for so much interference on the part of the surgeon as the other groups of adhesions, for the reason that the viscera involved rested upon the pelvic floor and were not subject to such constant and varying degrees of friction. Adhesions about the sigmoid gave rise to comparatively little disturbance. As to the method of caring for adhesions, he first began by simply separating them. While in Berlin he saw Martin rubbing adhesions with oil. He tried that for a while, without getting marked results; then he followed the plan of filling the peritoneal cavity with saline solution after operation. But this was not wholly satisfactory, because the salt solution was absorbed too rapidly. He then adopted the method of using the aristol film, because he noticed when raw peritoneal surfaces were exposed to the air there was a tendency for a lymph coagulum to form. If one included in the lymph coagulum an insoluble material like aristol, he included something which offered a mechanical obstacle to readhesion at that point. He had found practically that the Cargile membrane would prevent the recurrence of adhesions very regularly, although not always completely. Sometimes the surgeon might have to repeat the operation. He was unwilling to state which was the better of the two, the Cargile membrane or the aristol film. In their proper places both were distinctly valuable.

Officers.—The following officers were elected for the

ensuing year: *President*, Dr. Robert T. Morris of New York; *First Vice-President*, Dr. George W. Crile of Cleveland, Ohio; *Second Vice-President*, Dr. Charles L. Bonifield of Cincinnati; *Secretary*, Dr. Wm. Warren Potter of Buffalo, N. Y., reelected; *Treasurer*, Dr. X. O. Werder of Pittsburg, Pa.; reelected. The determination of the time and place of the next meeting was left to the Executive Council.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirtieth Annual Meeting, Held in Cleveland, O., May 31, June 1 and 2, 1906.

THE PRESIDENT, DR. MILTON B. HARTZELL OF PHILADELPHIA, PA., IN THE CHAIR.

Address by the President.—Dr. HARTZELL, in his opening address, said the profession at large was rather inclined to regard dermatology as a specialty which dealt, for the most part, with trivial affections, and the dermatologist himself was, in some degree at least, responsible for this view, for certain fields of research had been almost, if not entirely, neglected by him. No other tissue of the body offered such extraordinary opportunities for the study of morbid processes in general as the skin. It was always possible to obtain what was practically living material for microscopic study, and to observe the progress of disease from day to day; yet the general pathologist, if we might judge from the text-books on pathology, had given almost no attention to the skin, while the dermatologist, until a recent period, had made but little more use of his opportunities. Among the fields of research in which Dr. Hartzell urged the dermatologist to become more active were the causation of cancer; the effects of traumatism; the changes that occurred in epithelium; the problems connected with the subject of immunity; the antagonism occasionally observed between general diseases and diseases of the skin; the physiological action of drugs on the skin; the pathology and histopathology of drug eruptions; experimental therapeutics, especially in connection with the various infections; the rôle played by toxins, and lastly, the eruptive fevers, which he believed properly belonged to this specialty more than to any other department of medicine.

Dermatitis Exfoliativa.—Dr. BURNSIDE FOSTER of St. Paul, Minn., who read this paper, stated that during the past fifteen years there had fallen under his observation quite a number of cases which he had grouped together under the general class of exfoliative dermatitis, because that name was descriptive of all of them, and because the dermatologists were by no means agreed as to the exact nature of the different types of cases which in a general way were to be described by the above name. Among the cases of this general type that he had seen, and which he reported in detail, were four cases of dermatitis exfoliativa neonatorum; also two or three cases which he believed were instances of the condition first described by Hebra as pityriasis rubra, and five cases of acute, idiopathic exfoliative dermatitis. The most interesting problem connected with this group of cases, Dr. Foster said, was whether we had to do with one disease, varying in severity and extent in different cases, or whether we had several distinct diseases to deal with. Until more was known regarding them, he was in favor of retaining only the term dermatitis exfoliativa, adding the word epidemica or contagiosa for those cases where the infectious nature of the disease was apparent.

Dr. WILLIAM A. PUSEY of Chicago thought we could not hope to arrive at any definite grouping of these multiform dermatoses, which presented only one feature in common, namely, dermatitis.

Dr. A. RAVOGLI of Cincinnati said the character of the exfoliation or desquamation was an important factor in distinguishing between the various types of exfoliative dermatitis. He agreed that pityriasis rubra pilaris was a definite type, and identical with the lichen ruber acuminatus of Hebra.

Dr. JAY F. SCHAMBERG of Philadelphia said that in the exfoliative types of dermatitis we were dealing with certain objective clinical phenomena which might be produced by a multitude of causes, both external and internal. We designated the condition dermatitis exfoliativa if a generalized redness of the body, followed by exfoliation of the epithelium, existed. There were various types of this disease, including the acute type, which ran its course in from four to six weeks.

Dr. JOSEPH GRINDON of St. Louis said it seemed to him that to call all forms of exfoliative dermatitis by one name would not be a step in the direction of simplicity, but, on the contrary, would merely complicate the subject. It was just as necessary to take the course of the disease into consideration as the subjective symptoms.

Remarks on Syphilitic Alopecia.—Dr. HERMANN G. KLOTZ of New York read a paper on this subject, in which he offered the following conclusions: (1) Alopecia, or loss of hair, was *not* a common or regular symptom of the early stages of syphilis. (2) The slight loss of hair which was commonly taking place in healthy individuals as the result of the physiological change of the hair continued its existence through and beyond the course of syphilis, and must be taken into consideration before attributing to syphilis a loss of hair so slight as to pass unnoticed, or scarcely attract the patient's attention. (3) The same rule applied to numerous cases of slight seborrhea of the scalp, which under ordinary conditions would not be considered worthy of notice or treatment. (4) In a certain number of cases, syphilis might be accompanied by a diffuse loss of hair which might extend more or less over the entire scalp, varying in degree, similar to that observed after other infectious diseases, such a typhoid fever, erysipelas, etc. (5) In the absence of any discoverable local changes in the skin, this alopecia was apparently the result of malnutrition of the hair, its appendages, and the entire skin, as part of a general modification of the entire organism by the infection with the virus. (6) Such an alopecia was therefore not strictly a symptom of syphilis, directly due to the virus, but rather a complication. (7) Such an alopecia was directly dependent upon and in most instances proportionate to the general symptoms which might accompany the second period of incubation, and usually made its appearance several weeks after the onset of these prodromal symptoms, similarly to other infectious diseases, like typhoid fever. (8) Although such an alopecia might be very extensive, and affect other portions of the body, it showed a tendency to more or less complete restitution of the hair, unless the patient was too advanced in years, or was a subject of hereditary tendency to baldness. (9) An alopecia occasionally occurred in the form of ill-defined, irregular, small, sometimes coalescent patches of baldness, distributed principally over the back and upper portions of the scalp, and giving it a mangy or moth-eaten appearance. (10) Such an alopecia was observed almost exclusively in syphilitics, and was so characteristic that with extremely rare exceptions it was diagnostic of syphilis of the affected individual, either acquired or hereditary. (11) Such an alopecia was a characteristic symptom of syphilis, and almost always occurred at a period more or less remote from the time of infection, usually not before the end of the first year. It generally followed a very tedious course, although terminating in restoration of the hair. (12) In the absence of any discoverable anatomical changes of the skin, due to a local specific process, it was very difficult to explain the origin of this alopecia in patches.

Dr. GEORGE T. JACKSON of New York agreed with Dr. Klotz that alopecia was not as common a feature of syphilis as was ascribed to it by the text-books. The only type of

syphilitic alopecia that he regarded as absolutely pathognomonic was that in which the hair had a ragged, mangy appearance, as though it had been hacked off, or clipped with a pair of dull scissors. In this type, the patches were very irregular. It was observed, in his experience, more frequently before the end of the first year than afterward.

Dr. Robert W. Taylor of New York classified the various types of syphilitic alopecia as follows: (1) Alopeciaphobia, by which he meant an ordinary defluvium capillorum, the danger of which was much magnified in the mind of the patient, who was afraid of losing his entire hair. (2) A shedding of the hair, such as occurred in many adynamic diseases. (3) The moth-eaten, characteristic form of syphilitic alopecia, occurring in spots. (4) An alopecia due to syphilitic lesions.

Dr. James Nevins Hyde of Chicago said that while the moth-eaten appearance of the hair to which Dr. Klotz had referred was very characteristic of syphilis, and was usually accompanied by other well-marked manifestations of that disease, he had seen distinct exceptions to the rule. He reported a case in which this typical form of syphilitic alopecia was observed in a patient who at the time had few if any other symptoms of a generalized syphilis.

Dr. Charles J. White of Boston said he had seen two cases of this moth-eaten type of syphilitic alopecia, which went on to total and permanent baldness.

Dr. Joseph Grindon of St. Louis had seen marked alopecia of this type occurring in individuals who gave a very uncertain syphilitic history. Personally, he regarded the condition as absolutely pathognomonic of syphilis, but he did not believe it occurred in hereditary syphilis.

Dr. Stelwagon said he could hardly agree that there was any type of alopecia that was invariably syphilitic.

Dr. Robert W. Taylor of New York thought the moth-eaten patches of alopecia on the back of the head were as pathognomonic of syphilitic infection as was the serpiginous syphilide, which Ricord used to refer to as the *signature de la syphilis.*

Syringocystoma.—Dr. Charles J. White of Boston, Mass., reported this case, and discussed the nature of the lesions. The patient was a young girl with numerous small *café au lait* tumors on the neck. Pathologically, these flat nodules were epithelial branches and dilated cysts lying in the middle strata of the corium, and most probably represented new growths and cystic dilatations of the sweat ducts.

Dr. Hartzell showed some photomicrographs of his own case, which he reported about two years ago, in which it was quite easy to demonstrate that the newly-formed epithelium took its origin from the hair follicles. Furthermore, it was also quite apparent that the cysts had their origin in the hair follicles.

The Report of a Case of Parakeratosis Variagata.—Dr. Henry G. Anthony of Chicago reported this case in detail, and said it was not established that dermatitis psoriasiformis nodularis, parakeratosis variagata and *erythrodermie pityriasique en plaques disseminées* were different manifestations of one and the same disease, as some writers believed, and until their identity was definitely determined he considered it advisable to regard these eruptions as separate and distinct disorders. The points which they presented in common were their superficial character; the fact that they appeared rather suddenly in young, healthy individuals; that there were no succeeding groups of the eruption, but a steady imperceptible increase of lesions; that there was no itching, and that the disease was unaffected by treatment. The case presented by Dr. Anthony was that of a man, 23 years old, a laborer by occupation. The essential feature of the eruption was a combination of very slight, superficial erythema with a varying degree of pigmentation, presenting the appearance of disappearing plaques of lichen planus, and forming three kinds of lesions. 1. Light brown colored plaques in which there was erythema, but with little pigmentation. 2. Chestnut brown colored plaques in which there was erythema with a good deal of pigmentation. 3. Bluish colored placques which were exclusively caused by pigmentation.

Dr. S. Pollitzer of New York said the original description of parakeratosis variagata was as different from the case shown by Dr. Anthony as it was possible for two skin diseases to be. In the original case there was apparently a reticulation of almost the entire cutaneous surface, showing normal skin between slightly raised, glistening linear areas, strongly suggesting an extensive reticulated lichen planus annularis. In fact, Besnier, who saw the case before Unna, looked upon it as probably some form of lichen planus.

Dr. James C. White of Boston said that in his case, even in the most advanced lesions, the pigmentation or coloration did not advance beyond a very slight degree, and was what might be called rust red.

Dr. Anthony, in closing, said that since the original description of parakeratosis variagata, to which Dr. Pollitzer had referred, was published in 1890, a number of cases had been reported in which the reticular arrangement of the lesions was entirely absent. He was inclined to believe that Dr. Pollitzer laid too much stress upon that single feature of the eruption, which personally he regarded as of very little importance.

Elephantiasis of the Penis and Scrotum as a Result of Syphilis.—Dr. A. Ravogli of Cincinnati, O., reported this case, which confirmed the views of Hill that elephantiasis in this country was not of very rare occurrence, and was more frequently found among the colored race. It was only sporadic, with no relation to filariasis, and in the few cases which had been under his observation, syphilis was at the bottom of the affection. He called attention to the fact that even in countries where elephantiasis was endemic, other etiological factors than filariasis, such as trauma, and above all, syphilis, were important causative elements.

Dr. Robert W. Taylor said that cases like those described by Dr. Ravogli were usually met with in old syphilitics in whom the condition was complicated by trauma, or by a gonorrheal or staphylococcic infection.

Dr. Martin F. Engman of St. Louis said the specific cell of syphilis was certainly a plasma cell. That fact had been demonstrated by Unna and others in their investigations of tuberculosis and syphilis. The speaker said that in his experience it was unique to see a leucocytosis in syphilis, and when it did occur he regarded it as secondary and of staphylococcic or other origin.

The Development of Successive Initial Syphilitic Lesions, and the Pathology of Syphilitic Infection.—Dr. Robert W. Taylor of New York read this paper and reported a number of cases coming under his observation in which there were a number of successive initial syphilitic lesions. For many years, he said, the solitary character of the syphilitic lesion was claimed, and was generally accepted. In the course of time, however, this dictum was disputed, and it was conceded that the evolution of syphilis in some cases began by the appearance of several lesions, but even then the number was restricted to two or three. With advancing study and observation our ideas of the multiplicity of the syphilitic chancre had greatly expanded, so that we now recognized the fact that it was not uncommon to see from three or four to thirteen or fifteen lesions. It had further been shown by reliable statistical reports that in about 25 per cent. of all cases of syphilitic infection the initial lesion was multiple. Some authors admitted that successive chancres might occur as late as the twentieth day after infection, while a minority claimed that such reinfection was impossible, since at that time the entire organism had been infected, and thus been rendered immune. In clinical practice the occurrence of successive chancres might be due to simultaneous or later infections from a single source, and these might be called

cases of autoinfection. In some cases there was a strong probability that the successive chancres were due to identical secretions derived from another syphilitic individual, so that the victim was poisoned from two sources. These cases, therefore, might be termed instances of heteroinfection.

Dr. William T. Corlett of Cleveland said it was not unusual in his experience to see two, sometimes three, typical indurated lesions in a case of syphilis. In reference to the other type of cases to which Dr. Taylor had referred, where successive lesions developed in the course of syphilis, Dr. Corlett said he had never regarded them in the light of multiple chancres, but rather as lesions resulting from pus infection.

Dr. William F. Breakey of Ann Arbor said that his more recent studies in regard to the development of syphilis had only confirmed his earlier observations, made many years ago, that the excision or cauterization of the initial lesion tended to obscure the diagnosis and had only an unfavorable influence upon the later manifestations of the disease. Of the cases of tertiary syphilis that came under his observation, he could safely say that in nine out of ten the initial lesion had been cauterized, and a false sense of security had thereby been imparted to the patient.

"White Spot Disease" (Morphœa Guttata) and Lichen Planus et Atrophicus.—Drs. Frank Hugh Montgomery and Oliver S. Ormsby of Chicago, Ill., read this paper, which contained the further report of a case which was shown before this Association in Chicago in 1901 and in whom some of the white spots eventually became typical morphea lesions. A similar case was also reported in which the white spots on the upper part of the body were accompanied by areas of scleroderma on the leg. Also a case of lichen planus sclerosus et atrophicus, which was included because of its striking resemblance to the white spot disorder, and also to morphea, and because by many this form of lichen planus was not yet recognized as a distinct clinical type. The object of the paper was to present a clinical and histological study of these cases, together with data from the literature, in the hope of contributing to the solution of the question whether the above named conditions should be recognized as clinical entities or should be considered unusual types of morphea or local scleroderma.

Lymphangioma Circumscriptum.—Dr. S. Pollitzer, in this paper, reported in detail two such cases that came under his observation, and gave a histological and clinical description of the appearance of the growths. He stated that tumors of the lymphatics belonged to the rare pathological manifestations, those appertaining to the superficial layers of the skin constituting clinically one of the rarest of all skin diseases.

Dr. James C. White of Boston said we could scarcely accept the statement of the French writers as to the infrequent occurrence of this disease, as they were too prone to limit their references to their own literature. The speaker said he had reported two cases of lymphangioma circumscriptum, with accompanying dermatitis. In a case of this affection recently seen in Boston, the lesion was situated on the toe, surrounding the margin of the nail. He had never before seen that location involved.

Dr. Thomas C. Gilcrist of Baltimore said that about nine or ten years ago he reported a case of lymphangioma circumscriptum occurring in a girl of twelve. The lesion was about four and a half by eight inches in diameter and occupied the outer surface of the thigh. The history of that case was published in the Johns Hopkins Bulletin.

An Analysis of Sixty-seven Cases of Bullous Diseases of the Skin.—Dr. William T. Corlett of Cleveland, O., after referring to the difficulty of classifying bullous dermatoses, briefly analyzed 65 cases that had come under his observation. These included twenty cases of pemphigus, seven cases of pemphigus foliaceus, two cases of so-called pemphigus of the new-born, fifteen cases of impetigo bullosa, two cases of dermatitis bullosa, twelve cases of dermatitis herpetiformis, three cases of epidermolysis bullosa hereditaria, one case of urticaria bullosa, and five cases of pompholyx. Dr. Corlett said that while he believed that clinical groups of this class of affections were sufficiently distinctive for ordinary diagnostic purposes, yet hard and fast lines could not at this time be drawn between them. There were in each group many cases which conformed to the type, but at the same time a larger number presented departures from the standard which rendered it in many instances a matter of personal opinion as to what group they belonged.

Dr. Burnside Foster of St. Paul said he had seen an epidemic of pemphigus neonatorum of a mild type. All the cases recovered and he had then put them down as case of impetigo contagiosa of the bullous form. Four of these cases occurred in the practice of one midwife and one in the family of a neighbor who had assisted the midwife.

Diet as an Etiological Factor in Diseases of the Skin.—Dr. Henry W. Stelwagon of Philadelphia, Pa., in discussing this phase of the subject, said we knew that certain foods were toxic in some individuals, these constituting the so-called idiosyncrasies. In others, the eruptive phenomena, while not to be attributed directly to the food itself, resulted from overeating, thus giving rise to indigestion, crowding the eliminative organs, and resulting in faulty metabolism. In others, but more especially in those having a cutaneous disease tendency, underfeeding, as well as improper feeding, and overfeeding, might be the deciding factor that called forth the eruption. Further, in many cases, the evil effects were not due to the foods themselves (if in good and fresh condition), but to the toxic and putrefactive changes which they had undergone before or immediately after their consumption. Finally, the possibility of chemical preservatives and not the food itself being the etiological element in some of these cases should not be wholly disregarded.

Diet as a Therapeutic Measure.—Dr. George H. Fox of New York discussed the subject from this standpoint. In the first place, he laid great stress upon the importance of careful regulation of the diet in the treatment of all inflammatory affections of the skin, which included all those skin diseases in which the congestive element was present to a greater or less degree. While diet could not be expected to cure lupus, syphilis, or malignant disease, it certainly improved the condition of the patient and modified the local conditions to a slight extent, and hence might prove of service in nearly all classes of skin diseases. While every physician professed to believe in the efficacy of diet in the treatment of disease, very few were inclined to practice what they preached. The speaker also emphasized the fact that the majority of our patients, and those who were likely to become our patients, were in the habit of eating too much. While it was true that some suffered from malnutrition and needed to be better nourished before their skin disease could be radically cured, it was also true that even these patients could be benefited by a temporary restriction of diet. For every patient suffering from an inflammatory skin disease who was eating too little and suffering from lack of nourishment, there were a score or more who were eating far more than they actually needed and thus feeding the eruption. Dr. Fox expressed his firm belief that an excess of nitrogenous food was prejudicial to the health of both mind and body. It was without doubt the cause of many of the ills which were formerly ascribed to malaria and now commonly attributed to uric acid excess. He always claimed that a change of diet was of great advantage, even if it was from a theoretically good diet to a commonly considered bad diet. A change must be made in the patient's manner of living in many cases of skin disease; otherwise, the wisdom of the physician, with the assistance of the apothecary, would prove of

little avail. The character of the food in the treatment of cutaneous and other diseases was of less importance, perhaps, than the manner in which the food was taken. It was not what the patient ate so much as it was how and when and under what circumstances he ate that tended to the production of an inflammatory condition of the skin. Hasty eating, irregular eating, and meals taken under the stress of excitement and worry were the daily experiences of many of our patients, both rich and poor. In connection with this subject of diet, Dr. Fox said he could not refrain from referring to those two therapeutic handmaidens, exercise and cold baths. Diet, exercise, and bathing constituted the tripod of every trainer, restoring health, imparting strength, and inspiring energy.

Dr. Wm. A. Pusey of Chicago referred to the tendency to cut down the diet of growing girls with the idea that they were eating too much, while as a matter of fact, they were underfed.

Dr. Corlett said that the directions usually given in regard to diet were too general and failed to apply to the individual case. In order to ascertain the dietetic errors or deficiencies one must be specially equipped for making as analysis of the stomach contents. What was one man's meat was another man's poison, and no rule could be laid down to apply to all cases.

Dr. Burnside Foster said he had always thought that the arrangement of the diet of his patients was a most important part of the treatment, particularly in the inflammatory type of skin diseases, and in that connection the personal equation should never be lost sight of. The speaker said he was inclined to agree with Dr. Fox that it was a good idea to learn what your patient was in the habit of eating, and then make just as radical a change as possible. Diet was a good deal like climate: people wanted something different from what they had been accustomed to.

Dr. James M. Winfield of Brooklyn said that fish out of season was probably one of the most injurious articles of diet. Of course, this did not apply to perfectly fresh fish, or to fish in season, but to stored fish, which was very apt to produce urticaria, especially in susceptible patients.

Dr. Frank H. Montgomery of Chicago said there was a certain type of nervous women and girls, and also some men, who were in the habit of eating when they were tired out, or hurried or worried, and he could recall cases where he had been able to control mild attacks of rosacea in this class of patients by instructing them to take a short rest before meals and then eat quietly and masticate their food thoroughly.

Dr. Hermann G. Klotz of New York said that, so far as he knew, psoriasis was common in all countries, civilized and uncivilized; the same was true of eczema, in spite of the various forms of dietary indulged in. Both diseases apparently affected people who lived in entirely different ways and under different conditions.

Dr. Fox, in closing, said he had always maintained that water was the best and cheapest remedy in the pharmacopœia, and when taken freely between meals and in moderation with meals, it would take the place of laxatives and increase the elimination of toxic substances.

Multiple Cancer of the Skin and Keratosis Following the Long-Continued Use of Arsenic: Multiple Ulcerations of the Skin After the Protracted Use of the Same Drug.—Dr. Jay F. Schamberg of Philadelphia, Pa., read this paper, in which he reported in detail the history of a case of multiple epitheliomata in a man who had taken Fowler's solution at intervals during a period of twenty-five years. Among other lesions, he presented a large nodular cancer on the leg, which was not hyperkeratotic. Dr. Schamberg also reported a case of multiple persistent ulcerations of the leg in a woman who had taken arsenic continuously for four and a half years.

Dr. Henry W. Stelwagon of Philadelphia said there had always been a question in his mind as to how far arsenic was directly responsible for these cancerous conditions of the skin. A great many of the skin cancers began as a hyperkeratosis, and the arsenic sometimes produced this. Similarly, in cancers which followed the use of the *x*-ray, the first condition noticed was a hyperkeratosis; the speaker said he had always doubted whether the *x*-ray itself produced the cancer, or simply the hyperkeratosis which eventuated in cancer. The same was not improbable as to arsenic.

Dr. Thomas C. Gilcrist of Baltimore said he agreed with Dr. Stelwagon that the arsenic produced a hyperkeratosis and that the cancer was a subsequent development.

A Contribution to the Histopathology of Some Drug Eruptions.—By Drs. M. F. Engman and W. H. Mook of St. Louis, Mo. The observations contained in this paper were based upon a study of the iodine and bromine eruptions, and the following conclusions were offered: 1. The local eruptive phenomena were prone to occur at points of previous inflammation; about comedoes, acne lesions, seborrhoic lesions, scars, traumata, scratches, etc. 2. Traumata, pressure, or rapid temperature changes might precipitate an eruption in tissues charged with the drug. 3. Idiosyncrasy or susceptibility were factors here, as in other toxic conditions. 4. The glands or follicles of the skin took no active part in the production of the lesions, and when they were involved it was secondary and passive to inflammatory changes about the vessels and in the connective tissue. 5. The gross histological changes in the skin consisted in different degrees of inflammation, from slight changes about the vessels to destructive abscess formation and progressive death of tissue. In their further conclusions, Drs. Engman and Mook described the minute histological changes that led to the formation of these lesions, and stated that this theory might be termed the "rational theory," as it explained all the symptoms of ioderma and bromoderma in a purely rational, chemical, and mechanical manner, and did not depend in its elucidation upon the mysterious and purely theoretical action of the vasomotor system.

Dr. Jay F. Shamberg of Philadelphia said the theory advanced by Dr. Engman was not only plausible but was confirmed by clinical facts in connection with certain diseases. For example, in smallpox an increase in the vascularity of any area of the skin would almost invariably determine the presence of an increased number of lesions in that area. A mustard-plaster applied to relieve the backache of smallpox would usually mark the site of a subsequent confluent eruption. In scarlet fever, the speaker said, the converse of this rule was true, as the areas where continuous pressure had been exerted, such as the garter regions, were usually free of the eruption.

Vegetating Dermatitis, with a Report of Two Cases.—Dr. William Allen Pusey of Chicago, reported these two cases in detail, with histological findings, and compared them with similar cases reported under various names by Hartzell, Hallopeau, Wickham, Wende and Degroat, and Perrin. He expressed the view that we had in these various cases of dermatitis, with vegetations, essentially one process, and that a secondary one. The vegetations were not primary lesions, but were the result of secondary infection, with the consequent production of exuberant growth of both the connective tissue and the overlying epithelium.

Report of a Case of Pemphigus Vegetans (Neumann).—By Dr. J. M. Winfield of Brooklyn, N. Y. The patient was a Polish girl who was kept under observation at the Kings County Hospital from October 30, 1905, to May 5, 1906, when she died. From a study of the literature of the disease, together with the above case, Dr. Winfield deduced the following conclusions: 1. That some of the reported cases were not true examples of pemphigus vegetans. 2. That pemphigus vegetans was a distinct disease, and not related etiologically to the disease commonly

known as pemphigus. 3. That pemphigus vegetans was an infectious disease, running a definite course. 4. That the producing organism was not yet determined. 5. That this organism gained entrance into the body through the mucous orifices and abrasions of the skin. 6. That pathological changes in the kidneys, as evidenced by uranalysis and pathological findings, were not etiologically significant but secondary.

Dr. M. B. Hartzell of Philadelphia referred to the marked disproportion between the amount of the eruption and the constitutional symptoms in some of these cases. He had in mind the case of a Polish woman who was suffering from typical pemphigus vegetans, the eruption being comparatively mild, and all the symptoms had almost disappeared when the patient grew worse and died. No special reason for her death was apparent.

Phagedenic and Serpiginous Ulcers, and Infective Granulomata.—Dr. William F. Breakey of Ann Arbor, Mich., reported a case of this kind occurring in a man of 26, who presented himself with a large, superficial serpiginous ulcer on the posterior surface of the right thigh. Beginning in an inguinal bubo, the phagedenic process had been going on in one direction, while repairing in others, for over six years, burrowing under the skin as it extended, and leaving patches of scar tissue blending with normal integument over a large part of the hip and thigh. The condition had been treated for syphilis, lupus, and tuberculosis.

Dr. Hermann G. Klotz said that in former years he had had occasion to treat a number of these indolent buboes. The majority of them appeared in men with chronic gonorrhea, and the possibility of the presence of the gonococci in the tissues in these cases should always be borne in mind.

Report of Three Cases of Tuberculosis of the Skin.—Dr. T. C. Gilcrist of Baltimore, Md., reported a case of (1) primary tuberculosis cutis of the sole of the foot; (2) *Erythéme induré des scrofuleux* (Bazin), accompanied by subepidermal tuberculous abscesses on the body; (3) a case of the folliclis type.

Dr. Schamberg thought that the vast majority of localized tubercular skin lesions were due to direct external inoculation and did not give rise to any systemic infection. Occasionally, however, systemic infection did occur. Cases of localized tuberculous infection upon the hands and elsewhere were numerous, and such lesions might remain innocuous for many years.

Infectious Dermatitis Gangrenosa.—Drs. Grover W. Wende and Charles A. Bentz of Buffalo, N. Y., reported such a case occurring in a man seventy years old. The condition was an infectious gangrene, first shown by a bullous eruption, changing to necrosis, variable in distribution and extent, and apparently originating through autoinoculation from a chronic leg ulcer. There was an absence of constitutional symptoms during the development of the skin lesions, but there was a secondary general infection and death from septicemia. In the bullæ and the gangrenous lesions, as well as in the internal organs at the autopsy, were found streptococci, staphylococci, diplococci, and bacilli.

The final session of the Association was devoted to the presentation of patients at the Lakeside Hospital.

A Medical Sherlock Holmes.—It is related of Dupré, Professor of Medicine at Montpellier, that seeing a soldier wearing a bandsman's uniform who had just been admitted under his care with bronchitis and emphysema, he asked a student what the man was suffering from. The student could offer no opinion, whereupon the Professor exclaimed: "My dear fellow, don't you observe the barrel-like chest and the typical respiration? It is a case of mechanical emphysema, caused by blowing the trumpet." Then, addressing the patient, he said, "What instrument do you play, my man?" To which the reply was, "The bass drum."

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Stated Meeting, Held September 24, 1906.

Dr. Floyd M. Crandall in the Chair.

Nomination of Officers, Censors, and Delegates.—The nomination of officers and censors for the ensuing year, and of eighteen delegates to the State Society to serve for two years, and seventeen delegates to serve for one year preceded the scientific session.

The Municipal Supervision of Typhoid Fever.—Dr. Shirley E. Sprague gave a résumé of the work as carried out by the Department of Health of the City of New York. After describing the methods adopted by the Department for recording typhoid fever cases, the maps upon which all living cases were plotted, colored tacks used to denote the locality in which the patient lived, and also the sources of infection, he stated that from January 1, 1906, up to September 12, there had been 928 cases reported. During the week ending September 8 the greatest number of cases occurred, 81 in all, while during the week ending June 5 there were only five cases. The greatest number of deaths occurred during the week ending August 25, twenty-three being the total. Up to July 14 the number of living cases reported did not exceed twenty. This showed the disease to be most prevalent during the latter part of summer and beginning of autumn. Of all the cases reported a large per cent. were residents of tenement houses, and mostly house workers. The Department examined the blood and urine in over 80 per cent. of the cases reported; in 50 per cent. of the cases the Widal test showed positive and in 33 per cent. the diazo. In the majority of the cases the spleen was enlarged and rose spots were present. Water was shown to be the cause in nearly 34 per cent., and next in order were the cases where the cause was milk, figuring 25 per cent., while oysters were the least, 5 per cent. The number of patients that contracted the disease out of town closely touched 30 per cent.; very few occurred from other members of the family, 6 per cent. being the total. Bacteriologists practically discouraged any hope of finding the typhoid bacillus in samples of water, and better results were obtained by chemical analysis, showing contamination with sewage, and also by investigation of the surrounding country whence the city obtained its water supply. The city was constantly protected by frequent inspection of its watersheds for miles around, specimens of water being repeatedly examined. The inspectors constantly inspected all stores where the cause of typhoid was traced to milk, and, when necessary, the locality from which the milk came. He believed that bathers in and around New York were one of the most dangerous sources of infection, and were among those most exposed. From a view of the statistics it seemed probable, under the present condition of water supply, that from 1,500 to 2,000 cases of typhoid fever would continue to occur yearly in the Borough of Manhattan. This number would, in all probability, not be sensibly decreased until there was installed a modern filtration system as had been strongly and ably urged by our present Commissioner, Dr. Thomas Darlington.

The Diet in Typhoid Fever.—Dr. Morris Manges said that his own views had already been expressed so fully (Medical Record, January 6, 1900, page 1) that he would restate them only briefly. During the first week the diet was necessarily a restricted liquid one, consisting of milk with its various modifications and additions, soups, broths, and soup juices. So soon as the diagnosis was certain he allowed the patients to make their own beef juice by chewing thick pieces of soft, juicy sirloin steak, the nurse standing by and not giving another piece until the patient had returned the piece that he had been chewing. This not alone kept the mouth clean, but the free flow of saliva both directly and reflexly stimulated the gastric juice. This was always keenly relished by the patients. If the patients

tolerated what was given and wanted more nourishment, ice cream, cup custard or strongly cooked rice pudding, farina, blanc mange, wine jelly, apple sauce, milk toast without the crust, or softened crackers offered a diet from which selection might be made according to the desire of the patient. If the tongue kept clean and the abdomen soft, and the stools did not contain undigested food, one might add little raw or soft-boiled eggs or scraped beef, or minced lean beef. In cases of persistent vomiting it was best to suspend all nourishment for a time, rectal feeding being relied upon to supply the food for twenty-four or thirty-six hours. All articles of food must be thoroughly cooked, or carefully minced, and as sterile as possible. The freer diet must not be given to all patients. If the patient desired more food the quantity and variety might be safely increased. In a former paper he called attention to the possibility of high fever, delirium, and other nervous symptoms of some patients being due to inanition. Rectal feeding had not received the attention it deserved, and he had found it of great aid in supplying nutrition in cases where feeding through the mouth was contraindicated. He closed his paper by stating that the reports from the various clinics were now sufficiently large to warrant some definite conclusions, and were so well shown by Dr. Kinnicutt that he felt that he could not do better than to quote his statistics: Under a liberal diet there were 733 cases, with forty-eight relapses (11.38 per cent. on a basis of 325 cases), 35 cases of hemorrhage (4.77 per cent. on a basis of 733 cases), 10 cases of perforation (1.36 per cent. on a basis of 733 cases), 60 deaths (9.47 per cent. on a basis of 633 cases). Under a fluid diet there were 4,654 cases, with 507 relapses (10.89 per cent.), 411 cases of hemorrhage (8.83 per cent.), 111 cases of perforation (2.40 per cent.), and 491 deaths (10.55 per cent.). Dr. Manges' own experience had been such that he was fully convinced that in patients who had been fed more liberally the course of the disease had been so much more favorable, the duration so much shorter, and the complications so few that he felt justified in continuing its use and recommending it to others.

The Bath Treatment of Typhoid Fever in Private Practice.—Dr. Simon Baruch presented this communication (see page 601).

Dr. Charles E. Nammack said that the first idea in the management of typhoid fever that presented itself to him was that it was more important to study what kind of a patient had hold of the typhoid fever than it was to study the fever that had hold of the patient. There was no treatment of typhoid fever *per se*. One could not have any treatment of a disease that entered the blood and became implanted in the patient. The belief that typhoid fever was an intestinal disease and could be met by intestinal measures was fallacious. The second idea that should be kept in mind was that the teeth constituted the first digestive organ and the saliva the first digestive fluid; therefore, any article of diet should receive the attention of both the teeth and saliva first. The third idea he wished to present was that certain substances that were solid outside the body became fluid in the process of digestion, and *vice versa*. These ideas he presented were fundamental principles in the management of patients with typhoid fever. So far as the treatment of this disease by baths was concerned his own experience made him believe that the bath treatment was the greatest advance made in the treatment of typhoid fever during twenty-five years that he had been fighting the disease. The use of drugs should only be according to symptomatic indications, and varied with every case.

Dr. Walter Mendelson said the keynote of the papers read was that one must treat the patient and not the disease; routine treatment could by no means be relied upon, especially in private practice. He preferred the liberal diet, giving patients other food than milk, although milk was the mainstay. The desires of the patient could by no means be disregarded, and he was made more comfortable when on a liberal diet such as cereals, meat juice, chopped meat, or ground-up meat, fruit juices, eggs, etc. When these were used he had never regretted it. The after-treatment of typhoid fever patients was important, and it was his habit to tell patients that they would not be really well for one year at least. The only after-treatment of typhoid fever patients was *rest*.

Dr. Russell Bellamy called attention to an apparatus which permitted placing the patients into the baths without disturbing them. The necessity for greater gentleness in the handling of these patients was learned by him when an interne in the hospital; so much roughness was used that he decided that the mortality could be greatly reduced by some such apparatus as he advocated which permitted of great gentleness in the use of the bath.

Dr. Charles G. Am Ende said that inasmuch as typhoid fever was caused by an invasion of Eberth's bacilli first into the intestinal tract, and thence into the general circulation, their extinction implied arrest of the disease and its cure. These he had obtained by the use of quinine in sufficiently large quantities, counteracting its depressing effect by sweet spirit of nitre. Capsules containing five grains of quinine and one-half of one drop of creasote were given to adults seven times and sweet spirit of nitre three times a day; to children less in proportion until recovery. On the third or fourth day general improvement in the mental and other conditions was manifested, a voracious appetite developing a few days later. In one case, which he reported, the entire disease had disappeared on the tenth day of treatment. The longest case under this treatment lasted twenty-one days, and this was because it was associated with a capillary bronchitis. He did not find it necessary to resort to baths.

New Constitution and By-laws.—The new constitution and by-laws were presented to the society and will be acted upon at the October meeting.

Spontaneous Rupture of Hydatid Cysts of the Liver Into the Peritoneum.—Tremblin in his thesis states that the spontaneous rupture of hyatid cysts of the liver into the peritoneum is relatively frequent since it has been shown according to recent statistics that this occurs in more than one-fifth of these cases. The symptoms consist of a sensation of internal laceration, disappearance of the hepatic tumor, ascites, and urticaria. In certain cases, some of these signs fail, but the urticaria is almost always present. The complications are numerous; among these are sudden death from hydatid intoxication or from peritonitis, and subphrenic abscess. Diagnosis is relatively easy. Examination of the blood shows an abundant eosinophilia. Anatomical researches will reveal the nature of the peritoneal fluid and will assist the recognition of secondary lesions. The treatment of choice is laparotomy. As soon as the diagnosis is established, operation is indicated.—*Gazette des Hôpitaux Civils et Militaires*.

Two Tumors of the Breast in Men.—V. Cornil and V. Campenon report these cases. The first patient was a man fifty-seven years old. In 1898 he first noticed a growth as large as a pea near the nipple. The tumor grew to the size of a pigeon's egg. It was not until 1905 that the growth ulcerated. It increased in size, and operation was performed. Histological examination showed it to be an epithelioma. The second patient was a man forty-eight years old, inclined to obesity. In September, 1905, a puppy bit him on the right breast without making a wound. He suffered sharp pain, which disappeared at the end of a few days. In December the pain returned. The tumor increased in volume. At operation the entire breast was removed. The tumor consisted almost entirely of fibrous tissue and was shown to be a fibroma or cystic fibroadenoma.—*Bulletins et Mémoires de la Société Anatomique de Paris*.

New Instruments.

AN IMPROVED ELECTRIC OPHTHALMOSCOPE.

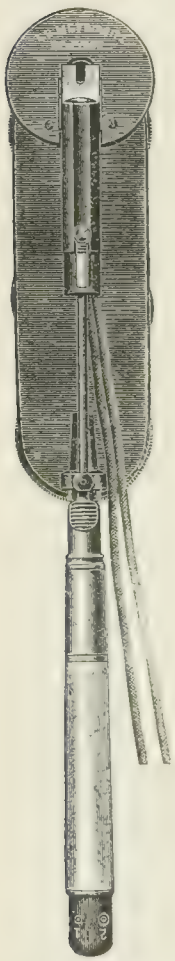
By WILBUR B. MARPLE, M.D.,

NEW YORK.

OPHTHALMIC SURGEON, NEW YORK EYE AND EAR INFIRMARY, ETC.

In presenting this model of an electric ophthalmoscope, I want to say that it is Dr. Dennett's ophthalmoscope with two or three modifications, but these modifications—at least in my hands—make it a very much more useful instrument.

The difficulty I found in using Dr. Dennett's instrument—and this is true also of De Zeng's—was that I did not seem able to direct the illumination always to that part of the fundus at which I wanted to look. Especially was this true if I endeavored to examine anything at the lower part of the fundus. I could always observe a horizontal line of shadow, beyond which I could not see, turn the instrument howsoever I might. For example, if I wanted to investigate the periphery of the lens below, to ascertain as to its transparency, I would invariably find this region in total shadow. I discovered, however, that if I held the ophthalmoscope with the handle directed horizontally to the side of the patient, then I could illuminate the lower part of the fundus all right. It was evident that the trouble was that the whole mirror was entirely below the line of vision when using it. I then began experimenting with various forms of mirror, the first shape being one with a round aperture, like the ordinary ophthalmoscope. But so much light was reflected into the observer's eye by such a mirror, of the ordinary thickness, that a very unsatisfactory view of the fundus was obtained. My nephew, Professor of Physics in the University of Wisconsin, then sent me a very thin mirror, hoping that the reflection would be less from this, but I could see no practical difference. As the reflection was entirely from the upper edge of the aperture, I next cut this part of the mirror away, using a U-shaped piece of glass. With this there was no annoying reflection, and to my great satisfaction I now found that the whole fundus was illuminated, and also that I could control my illumination completely, investigating the lower part of the fundus as well as any other. To satisfy myself I covered the two arms with blackened paper and again found the bottom of the fundus in darkness. I then uncovered more and more of the two arms until I found just the length which gave me what I wanted, and the mirror seen in the instrument shown here is the one which gives me the best results. (See figure.)



There is one other feature to which I wish to call your attention, and that is the movable lamp. Dr. Dennett's latest modification has an arrangement by which you can use the lamp in two positions. But it occurred to me that it would be an improvement if the position of the lamp could be controlled by the examiner *while using the instrument*. So I accordingly had an arm carried down with a small roughened knob at the end, by which the observer, when examining a patient, can slide the lamp up and down and thus get just the kind of light which best brings out what he is looking for. One has only to use this modification once to appreciate what a great advantage it is.

It was my desire, in taking up this subject, to see if I could not get an instrument which I would use not merely when I could not use the ordinary instrument, but always. I can only say that I now rarely use anything else in my office. It is equally useful in the indirect as in the direct image. In the detection of fine opacities in the media, using the movable lamp, it is far better than the ordinary reflecting ophthalmoscope. I have had it put on my Morton ophthalmoscope, but it can be put on any instrument which any individual is accustomed to use. There is a slight defect in the illumination of the fundus corresponding to the small defect in the mirror above, but this is of very little importance, as a slight movement of the instrument brightly illuminates the part which was previously somewhat shadowed. I use the street current and a rheostat in my office, but when this is not present this little dry-cell battery is very satisfactory and is one I have used for a couple of years, at the bedside of patients, at their homes. When working with the rheostat in my office I can readily vary the intensity of the light while examining the patient, by pushing the rheostat slide in one or the other direction. This is a very great advantage.

As explained above, the lamp is moved up and down while using the instrument by means of this little knob (See figure), held between the thumb and index finger. I shall have the wires fastened to the body of the instrument, so that a pull on the wire, which sometimes occurs, will not move the lamp. To change the lamp, if burned out, unscrew the small screw which you see, and the movable arm, with lamp at the end, can then be pulled clear out, when you can unscrew the burned-out lamp and put on a new one.

To use in the indirect image, hold at the usual distance for working with the inverted image; then move the rod with the lamp at end until the flame (or reflection of this) on the patient's forehead is a long, narrow bar of light; then interpose your lens, and a good inverted image of the fundus is obtained.

In the use of the ordinary reflecting ophthalmoscope the most difficult thing to learn is the management of the illumination, and to master this thoroughly takes long practice. In my electric ophthalmoscope the illumination takes care of itself, and this renders it especially useful to the medical man, not an ophthalmologist, who has occasion to use an ophthalmoscope. One of our most prominent neurologists, to whom I showed the instrument in my office, was so delighted with the facility with which he could use the instrument that he has employed it in his office ever since.

We are, of course, partial to our own devices, but I have had several of my confrères here and in Philadelphia try my ophthalmoscope, and they are all as enthusiastic over the instrument as I am myself. So that I am quite sure that if any one will give it a fair trial he will appreciate its many advantages and, like myself, will feel that it is something he cannot be without.

I am indebted to Mr. E. B. Meyrowitz, by whom

*Presented to the American Ophthalmological Society at its meeting in New York City, June 28 and 29, 1906.

the instrument is made, for many courtesies in carrying out my suggestions. As stated above, my electric attachment can be put on any form of ophthalmoscope to which the individual is accustomed.

46 West Fifty-third Street.

Therapeutic Hints.

Chronic Gastritis.—

℞ Acidi salicylici.....gr. xxiv
Oleoresinæ capsici.....gtt. vi.
Strychninæ sulphatis.....gr. ss.
Ext. gentianæ.....gr. xxiv
M. et ft. pil. No. xxiv. Sig. One after meals.—*Indian Medical Record*

Acute Gonorrhea.—Clark finds the following alkaline mixtures useful:

℞ Potass acetat.....℥ iiss
Tinct hyoscyam.....℥ iv
Aquæ, q. s.....℥ ii
M. S. Tablespoonful after meals and at bedtime.
Or——
℞ Potass. bicarb.....℥ ss
Tinct. hyoscyam.....℥ ss
Aquæ.....℥ viij
M. S. Tablespoonful after meals and at bedtime.
—*Gaillard's Southern Medicine.*

Follicular Tonsillitis.—Laurens uses the following gargle:

℞ Sod. biborat..... 6.0
Glycerini..... 10.0
Aq. menth. pip..... 40.0
Aq. dest.....100.0
—*Gazette des Hôpitaux.*

Constipation in Chlorosis.—Pratt suggests for this the following so-called St. Germain tea:

℞ Foliorum sennæ.....℥ v
Florum sambuci.....℥ iii
Fructus fœniculi
Fructus anisi, aa.....℥iss
Potassii bitartrati.....℥ ii-iii
Acidi tartarici.....℥ ii-v
Sig. One or two teaspoonfuls to be taken in a cup of tea.

Blepharitis.—

℞ Hydrarg. oxid. flav..... 0.1
Vaselin cold cream.....10.1
M. S. Rub into edge of lids twice daily.

Pyelitis.—

℞ Ext. fluid buchu.....℥ i
Tr. opii camph.....℥ss
Take four times daily.

Herpes Zoster.—

℞ Lanolin.
Vaselin.....equal parts.
Cocain, mur.....1 per cent.
Sig. Apply locally.

Gastric Irritability.—

℞ Sod. brom.....gr. vi
Chloral.....gr. iii
Resorcin.....gr. iii
Aq. chloroform.....℥i
Spt anisi.....ad ℥iv
M. S. A teaspoonful as required.

Menorrhagia.—

℞ Acid. salicyl..... 0.02
Ergotin.....10.00
Glycerini pur.....20.00
Aq. destill.....70.00
M. S. A tablespoonful in three tablespoonfuls of water as a rectal injection.

℞ Alumin.....1.0
Tinct. digital.....3.0
Tinct. canab. ind.....6.0
M. S. Five drops three times a day.
—*Der Frauenarzt.*

Action of the X-Ray on the Ovary of the Dog.—Roulier in his experiments on three dogs has met with negative results. The ovaries presented no lesion either macroscopically or microscopically. In the case of rabbits, however, Roulier has obtained results conforming in all points to those of previous observers. He concludes that the *x* ray has a selective action on the ovary. Atrophy may be easily obtained in very small animals without the production of alopecia. In the dog, it is very difficult to obtain in spite of the production of severe lesions of the skin.—*Gazette de Hôpitaux Civils et Militaires.*

Surgical Suggestions.

Chylorrhea during or following operations on the neck, according to von Graff, is always due to injury to the thoracic duct. Ordinarily this accident causes only temporary interference with nutrition, although in the presence of other complications, such as severe hemorrhage during the operation or protracted narcosis, it may lead to death. The only effectual immediate treatment consists in ligature of the thoracic duct or suture of the injury, and this should be done either at once or as soon as possible as a secondary operation. Ligature of the thoracic duct in the neck entails no danger and the treatment of chylorrhea by packing should be carried out only when ligature of the duct cannot be performed owing to technical difficulties.—*Wiener klinische Wochenschrift*

In Breech Extractions Wienskowitz recommends as a tractor a piece of rubber tubing with a webbing foundation. This is less likely to injure the fetus or the maternal soft parts than the hook, and is much easier to carry around the fetal thighs than the cord fillet. A piece about three-fourths of a yard in length and one-half inch in diameter is used, after having been sterilized by boiling.—*Zentralblatt für Gynäkologie.*

The Fetal Heart Sounds may, according to Schwab, be rendered more easily audible during the early months of pregnancy by the following maneuver: Standing at the right side of the patient, the right hand with its ulnar border downward is placed just above the symphysis and is pressed directly backward until the uterus with its contents can be forced upward toward the umbilicus and firmly fixed in this position. The stethoscope is then applied over the most prominent portion of the mass.—*Zentralblatt fur Gynäkologie.*

Gunshot Wounds of the Abdomen.—Stated in the order of their fatality, military surgeons of the widest experience have set down the following list for gunshot wounds of the abdomen: 1. Wounds of the spleen are the most fatal of all. 2. Perforating wounds of the small intestine and mesentery. 3. Wounds of the stomach. 4. Wounds of the large bowel. 5. Wounds of the urinary bladder. 6. Wounds of the liver. 7. Wounds of the kidney. 8. Nonperforating wounds of the intestine.

Neuralgia and Sciatica are treated by Kuester by intraneural injections of a 50 per cent. antipyrine solution. From 0.2 to 0.3 c.c. of the solution is injected directly into the trunk of any of the smaller nerves, while larger amounts are used for the sciatic nerve. The injections are repeated at intervals of eight days and from three to five are usually needed. In some cases the curative effect is manifested only some weeks after the cessation of treatment.—*Zeitschrift für aerztliche Fortbildung.*

A New Method of Gastrostomy.—Tavel suggests the following procedure as a means of avoiding many of the inconveniences attending the usual gastrostomy opening. Through a median incision a portion of the jejunum about 15 cm. in length is resected without interfering with its mesenteric attachments. The continuity of the intestine is restored and the distal end of the resected segment is sutured into the stomach opening after having been passed through the mesocolon and omentum as in gastroenterostomy. The proximal end is carried to the surface and is implanted in the abdominal wall, preferably in a separate incision. Tavel has carried this operation out in one case with excellent results, there being no leakage even on coughing or on exertion. The only disadvantage of the plan is the extra time required to carry it out.—*Zentralblatt für Chirurgie*

For Contracted Pelves Credé proposes a plastic operation intended to secure a permanent increase in the pelvic diameters. A semicircular incision is made over the symphysis rather more on one side than on the other. The pubic bone is laid bare and after the ordinary pubiotomy a quadrilateral piece is excised from the horizontal ramus by means of a Gigli saw carried through the obturator foramen. This piece of bone is then wedged into the gap caused by the pubiotomy. Credé has performed the operation on one patient during labor, but he states that it is intended primarily for use during the early stages of pregnancy. The true conjugate is in this way permanently increased from 1 to 1.5 cm.—*Zentralblatt für Gynäkologie.*

Hyperidrosis has been successfully treated by the application of the *x*-rays, and it has also been claimed that color may be restored to gray hair in the same way.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending October 6, 1906:

	Cases	Death
Tuberculosis Pulmonalis	346	154
Diphtheria	100	22
Measles	30	2
Scarlet Fever	49	3
Smallpox		
Varicella	11	—
Typhoid Fever	121	25
Whooping Cough	32	15
Cerebrospinal Meningitis	12	11
Malarial Fever		
Totals	800	232

A Few Words for the Rights of the Prostate.—James W. Henson believes that every man with symptoms of prostatic hypertrophy, if an examination proves this condition to be accompanied by residual urine of five or even four ounces, should be advised in positive terms to submit to a radical operation, whether infection be present or not, unless such an operation be contraindicated by an enfeebled general condition from the results of obstruction and infection or some other cause. The reasons given for this advice are first because infection will be established whether the catheter be used or not, and the use of it only hastens infection. Next, the surgeon cannot keep daily track of the progressive daily pathological changes and be able to tell just when that point in these changes is reached, beyond which the bladder will not recover its function if given a chance. The third reason given by the writer is that in cases taken early a radical operation which thoroughly and successfully removes the obstruction results in a cure. Finally, the mortality in early operations and in good hands is low. The writer believes that it is safer for each operator to cling to that method with which he is best acquainted, and by which he feels sure that he can do what is requisite with the least expenditure of time. The writer adds that for patients who are too feeble or too far gone from infection to stand any radical operation, drainage by a suprapubic or perineal cystotomy affords much relief. Some of these cases, indeed, become candidates later for radical operation.—*The Mobile Medical and Surgical Journal.*

Syphilis Hereditaria Tarda; Report of a Case.—Louis M. Warfield had under his care a boy eleven years old who complained of catarrh of the head and swelling of the neck. The mother had had three miscarriages. She told a rambling story of how the boy nearly lost both eyes from inflammation after an attack of "malaria." The boy became gradually better, although it was two years before he could distinctly recognize objects. During that period he suffered with headache. About a year ago, one day, he spat out a piece of bone. Difficulty of breathing through the nose, from which he had suffered for some time, became worse and he became deaf in both ears. About two weeks ago another piece of bone came from the "back of the throat." Since then the bridge of the nose has been swollen, red, and very painful to the touch. About a year ago the boy's neck began to swell. The anterior nares are small and covered with crusts. The bridge of the nose is somewhat flattened. The patient says that it seems as if there were a skin over the eye. He has Hutchinsonian teeth. In the hard palate are two slitlike perforations through which a small probe can be passed to the nasal cavity. Farther back near the small palate is a small perforation large enough to admit the tip of the little finger. The patient hears with difficulty. The lymph nodes on both sides of the neck and beneath the chin are markedly enlarged. The diagnosis was made of hereditary lues and appropriate treatment was advised. If the history is correct, the child showed absolutely no symptoms of the disease until the seventh year. The writer thinks that the history of miscarriages in the mother shows that this case is one of late manifestation of hereditary lues and not one of acquired lues.—*Archives of Pediatrics.*

Bile Poisoning.—Woodbridge Hall Birchmore calls attention to the fact that "uremia" is a disorder secondary to bile poisoning. Bouchard has shown by direct experiment that a highly jaundiced urine is more toxic than the same urine after removal of its coloring matter in the proportion of 30 to 13. Jaundice is commonly met with in two forms, the yellow and brown; in some cases "green jaundice" has been noted. The coloring matters which have been isolated may be called "bile yellow," "bile green," and "bile red." Bile yellow is the pigment first abstracted by the connective tissue and epithelial tissue cells. It is the one which first stains the liver. It may be said in general that whenever the liver excretion is so interfered with as to cause the bile to enter the blood, this yellow tint at once appears in the skin. Various color changes take place in these pigments, the details of which have not yet been mastered. Symptoms of poisoning do not take place while the skin is pigmented, or while the urine is highly colored, but while the urine, whatever be its hue, is colored but little. This fact is of great clinical importance. Without any doubt, the desire to escape is the basal impulse of all the strange vagaries of those suffering from the bilious intoxication. The "mania of depression" sometimes ends in suicide. The large majority of these patients in whom there is every evidence of temporary insanity may be restored by ridding them of the bilious intoxication. Examinations of many of these patients showed the blood to be loaded with bile derivatives; none of the patients was jaundiced. The evidence of bile must be looked for in the blood where it can do the utmost mischief and yet give no visible and objective sign. The pigment in the blood most to be dreaded is the bile-red. Great responsibility in these cases rests upon the family physician and he should always be on the lookout for danger.—*Medical Examiner and Practitioner.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 5, 1906:

SMALLPOX—UNITED STATES

		CASES.	DEATHS
Louisiana, New Orleans	Sept. 15–22	1	Imported

SMALLPOX—FOREIGN

Brazil			
Canada, Toronto	Sept. 8–15	1	..
Ecuador, Guayaquil	Aug. 1–31		30
France, Marseille	Aug. 1–31		6
Paris	Aug. 18–15	11	..
Gibraltar	Sept. 2–0	1	.
Great Britain, Liverpool	Sept. 8–15	1	.
Italy, General	Aug. 23–Sept. 13	12	..
Russia, Odessa	Sept. 1–8	3	1

YELLOW FEVER.

Cuba, Habana	Sept. 29	1	
Santa Clara Province	Oct. 2	1	1
Mexico, Merida	Sept. 16–22	3	2
Tierra Blanca	Sept. 16–22	1	
Veracruz	Sept. 16–22	1	

CHOLERA—INSULAR.

Philippine Islands, Manila	Aug. 4–18	153	128
Provinces	Aug. 4–18	1104	856

PLAGUE

Brazil, Campos	Aug. 14–15		7
China, Hangchow	Aug 18–25		Present
Hongkong	July 7–Aug 11	33	34
Egypt, Alexandria	Sept 2–13	6	3
Beni Souef Province	Sept. 11	1	1
Suez	Sept. 5–10	6	4
Mauritius	July 25–Aug. 15	5	4
Peru, Lima	Aug 17–20		Present
Turkey, Trebizond	Aug 8–29	10	3

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Original Articles.

ANGINA PECTORIS: ITS MECHANISM AND TREATMENT.

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IT is a fundamental physiological fact that during life the general or aortic blood pressure tends to be maintained at an approximately uniform mean height; and this in spite of the fact that countless and ceaseless variations of caliber are occurring in all parts of the vascular system. It follows that "every variation in one part is compensated by a simultaneous and contrary variation in another part" (Leonard Hill[1]). In less general terms, vasoconstriction in one part is being constantly associated with, and therefore compensated by, vasodilatation in another part, and conversely. But the uniformity of aortic or general blood pressure thus in great part secured is obviously attained at the expense of uniformity of localized blood pressure. For it is certain that the local blood pressure peripheral to the vasoconstriction is reduced, and that the local blood pressure peripheral to the vasodilatation is increased. Less technically put, the blood stream is in great part shut off from the constricted areas, and turned on with concentrated force and in larger quantity to the dilated area. Thus there occurs in the latter what may be conveniently termed "vascular distention."

Vascular distention varies widely in degree and in localization. It may be physiological. There seems little doubt that on exposure to cold sufficient to cause shivering there is some vascular distention of the muscular area, and that this depends upon dilatation of the muscular arterioles correlative of constriction of the cutaneous arterioles. There is no doubt that after food there is vascular distention of the digestive organs, and that this depends upon vasodilatation localized therein and upon correlative vasoconstriction elsewhere, especially perhaps in the skin. And many other examples of physiological vascular distention could be given.

But vascular distention of essentially similar mechanism is a common and important factor in the domain of pathology also. Its symptoms and signs will, of course, vary with the locality and nature of the tissue affected. If the tissue affected is vascular and well supplied with nerves, but prevented by rigidity of its surroundings from freely expanding, there will be pain from nerve pressure. If, on the other hand, there is room for expansion as on a free surface, there may be an absence of pain, but there will probably be symptoms or signs due to the increase in bulk of the tissue. Elsewhere[2] I have brought forward a considerable amount of authenticated evidence in support of the view that both the pain of migraine (not to mention many less formal headaches) and the dyspnea of asthma, depend essentially upon vascular distention, the former of the scalp or membranes of the brain, the latter of the mucous membranes of the bronchioles, and that in both cases such vascular distention depends upon vasodilatation more or less localized, and upon vasoconstriction more or less generalized.

Now, it is a fact that both migraine and asthma have strong affinities with angina pectoris. The three paroxysmal affections are prone to alternate, not only in the family, but in the personal, history of the patient. A patient may have migraine or asthma for years, lose his accustomed paroxysm either suddenly or gradually, and concurrently commence to suffer from angina, or conversely. Again, cases have been observed which partake of the characters of any two, or all, of these neuroses.* It is true that the affinities of the paroxysmal neuroses have slipped somewhat into the background of medicine during recent years. That is due, doubtless, in part to the strictly inductive spirit of modern inquiry, which concerns itself mainly with the antagonisms of disease, but also in great part to the overgrowth of specialism.† But the affinities referred to are all described in the works of those less specialized physicians who wrote in the middle period of the nineteenth century, and they are conspicuous to-day for those who are accustomed to take a comprehensive survey of disease.

Further, the three named affections conform in several of their objective signs. In all there is an increase in peripheral vasoconstriction. This is well recognized in the case of angina; its observation, of course, led directly to the use of amyl nitrite. Though less frequently mentioned in text-books, an increase in peripheral vasoconstriction will be found to be equally constant in both migraine and asthma. The small pulse of migraine has been noted by Austie,[3] Lander Brunton,[4] William Russell,[5] and others. The small pulse of asthma has been noted by Hyde Salter,[6] who points out that it is invariable, and is "small in proportion to the intensity of the dyspnea." It has also been noted by William Russell.[7] Many writers have pointed out the bloodlessness and coldness of the skin, most marked in the extremities, of both affections.

In the case of migraine, the more or less localized compensatory vasodilatation and consequent vascular distention has been noted by Möllendorff,[8] Wilks, and others. In the case of asthma, the same condition has been assumed by Weber, Andrew Clark, Osler, and all who accept a vasomotor explanation of this affection. But in the case of angina, no one so far, as I can discover, has hitherto entertained

*I have given many examples of these alternations and mixed neuroses in a recent work, "The Food Factor in Disease," Longmans, Green & Co.

†I have recently come across the case of a lady who suffered from asthma, hay fever, anginal seizures, and eczema, for which affections she was attending at the same time a physician known for his skill in lung diseases, a rhinologist a physician eminent in heart affectfons, and a dermatologist.

an analogous view. Yet analogical considerations consistently point to such a conclusion.

Accordingly, we may frame the following hypothesis: The pain of angina depends upon *vascular distention in the mediastinum,* which vascular distention is the result of a more or less localized vasodilatation and of a more or less generalized peripheral vasoconstriction.

Here it would seem necessary to state that nothing which has been said hitherto in this paper is to be regarded in the light of proof of this hypothesis; all that has preceded is merely suggestive. The proof of this, as of all hypotheses which are insusceptible of direct experimental demonstrations, must rest upon the number of accredited observations on the natural history of the disease, which it is capable of correlating and explaining—in short, upon the extent of its consistency with known facts.

Vascular distention affecting the walls of the heart, especially the coronary areas, and the coronary and cardiac plexuses, would fully explain both the characteristic precordial pain of angina and the various radiations of that pain. The coronary arteries are relatively large; the heart muscle, for a muscle, is peculiarly close in texture, and the capillaries are "very numerous and closely arranged."[9] Swelling to any extent would probably be precluded, tension would be great, and therefore nerve structures would be exposed to extreme pressure. The number and extent of the communications of the nerve plexuses affected would sufficiently account for the wide variations of the pain experienced. Furthermore, frequently recurrent vascular distention would explain the inflammatory changes demonstrated in the cardiac plexus by Lancereaux and Huchard, and the right and left coronary plexuses by Mott.[10] The neuritic changes would be the result, not as has sometimes been assumed, the cause, of the anginal seizures.

But, in order to appreciate fully the extent of the consistency of the hypothesis formulated, it is essential to grasp firmly all the factors in the mediastinal vascular distention. These are obviously four in number: (1) The localized vasodilatation; (2) The generalized peripheral vasoconstriction; (3) The work done by the left ventricle, and (4) The integrity of the mitral valve.

1. *The localized vasodilatation.* This, in all probability, affects mainly, if not solely, the coronary arteries. This assumption is consistent with Schäfer's recent demonstration that these vessels are unprovided with vasomotor nerves. The vessels probably undergo dilatation passively through the rise of general blood pressure resulting from the generalized peripheral vasoconstriction. It is unnecessary to point out that Schäfer's demonstration, if confirmed, must prove fatal to the view that the pain of angina depends upon "intermittent claudication" of the coronaries.

As is well known, atheroma of the coronaries is one of the most frequent lesions found postmortem in fatal cases of angina pectoris. Herewith the assumption of vasodilatation is consistent. Intravascular strain, which is especially prone to occur in dilated vessels, is admittedly one of the commonest factors of arterial disease; but here, again, the disease would be the result, rather than the cause, of the anginal seizures. The same factors are seen to be at work in some cases of old-standing migraine and supraorbital neuralgia, in which arteriosclerosis of the corresponding temporal artery has followed the long recurrent vasodilatation associated with those neuroses (Gowers,[11] Thoma[12]). And there is "evidence to show that arteriosclerosis can be brought about by section of nerve trunks (Fraenkel, and others[13])." Such an injury would cause prolonged vasodilatation. Consistent with the view of vasodilatation and ultimate disease of the coronaries from intravascular strain, is the recent discovery by Arthur Morison of a small but fully developed coronary aneurysm in a case of fatal angina.[14] The aneurysm had distended the intima and was lying in contact with, and pressing upon, the middle or muscular coat of the artery.

2. *The generalized peripheral vasoconstriction.* Obviously, this factor is as responsible for the mediastinal vascular distention as is the localized vasodilatation. Through its means the blood stream is in great part shut off from wide areas, and turned on with concentrated force and in larger quantity to the dilated area. Its responsibility may be shown in many ways. Everything which tends to increase peripheral vasoconstriction tends to induce anginal paroxysms, and everything which tends to relax peripheral vasoconstriction tends to relieve anginal paroxysms.

In Nothnagel's cases of so-called "functional" angina, "the attacks were . . . definitely traceable to external cold, and were relieved by hot foot baths and frictions." Further, "the earliest and most conspicuous symptoms . . . were coldness and pallor, with numbness and stiffness of the limbs; the palpitation, the feeling of oppression at the chest, the giddiness, the sense of impending death, being all secondary" (Hilton Fagge[15]).

The immediate relief usually afforded by amyl nitrite inhalation, by hot alcoholic drinks, ether, etc., is of course fully explained by the relaxation of the peripheral vasoconstriction. In many of my cases, some of them advanced in life and suffering from organic heart complications, the application of hot foments to the chest, back and front, has given instant and complete relief. In some, sipping hot water has acted similarly.

On the other hand, the hasty swallowing of cold water will, according to Fagge,[15] induce a paroxysm in some cases. And digitalis, a drug which increases peripheral vasoconstriction, as well as the strength of the systole, has been shown to act injuriously in some cases of angina. Dr. A. Elliott describes a case of mitral stenosis with severe anginal symptoms in which digitalis, when given persistently, was always followed by fresh attacks of angina.[16]

Sudden emotion, such as fear, is prone to be associated with marked cutaneous vasoconstriction, and Clifford Allbutt has shown that fear may bring about a very measurable rise of blood pressure.[17] Conformably, the influence of fear in precipitating anginal seizures is notorious.

George Oliver has shown that a rise of blood pressure sets in after meals, attaining its maximum in about an hour;[18] this he ascribes in great part to peripheral vasoconstriction—a vasoconstriction which has been quite recently referred to by William Russell[19] as an "arterial abdominal reflex." Terms are, however, of relatively slight importance in this connection. What is important is to recognize that normally peripheral vasoconstriction is increased during the period of digestion and absorption. For, during those processes, there is admittedly an exaggerated tendency for the development of anginal paroxysms. This statement hardly calls for confirmatory quotations.

The marked cutaneous vasoconstriction associated with malarial rigors is evident, and many cases are recorded in which anginal paroxysms have complicated, or been substituted for, malarial rigors.[20]

Oliver has observed that during the menstrual

period the caliber of arteries, *e.g.* the radial, ceases to respond to changes of posture; this phenomenon he regards as due to transitory vasoconstriction.[21] According to Giles, the increase of vascular tension is greatest on the day preceding, and the first two days of menstruation.[22] Hence, it is not surprising to find that anginal seizures are especially frequent at this time, and usually cease when the flow has become well established. The same is true of migraine, of asthma, and indeed of practically all the vasomotor neuroses.

Physical exercise has a two-fold influence on blood pressure. During the first ten or fifteen minutes it causes a rise, thereafter a fall (Leonard Hill[23]). Now, whatever the cause of the initial rise, there is no doubt whatever that the subsequent fall is due to the large vasodilatation, which occurs in both the muscular and cutaneous areas. It follows that exercise would produce an exactly parallel increase and decrease in the mediastinal vascular distention of angina, and this is entirely consistent with clinical observation on the effect of exercise in anginal subjects. Fagge says: "It is . . . a curious fact that some persons, after being pulled up by the pain three or four times at the beginning of a walk will afterwards go on with ease for several miles."[24] The fact is common—I had almost said invariable—in all such anginal patients as take physical exercise. It occurs also in asthma and many other vasomotor neuroses, and would be better appreciated were a larger share of professional attention devoted to personal life histories and subjective symptoms.

3. *The work done by the left ventricle.* Obviously, this is an essential factor in the maintenance of vascular distention wherever situated. *Whatever reduces the work will reduce the distention, and vice versa.* Now, the work done may be reduced in many ways. It may be reduced temporarily by vague inhibition of the heart beat. This happens in many cases of ordinary syncope, and there can be little doubt that such inhibition is secondary to peripheral vasoconstriction; otherwise there would be no explanation of the marked and instantaneous action of amyl nitrite inhalation in most cases of syncope. The same may be true of the vague inhibition which occurs in many cases of angina; or it may be that here the inhibition depends upon the pain. At any rate, cases are not very rare in which syncope and angina alternate, and there are some in which syncope supervenes during a paroxysm of angina. In the latter case the supervention of the syncope is contemporaneous with the cessation of the pain, and either may be at once terminated by amylnitrite inhalation, or heat applied externally over an extensive area. In all such cases it is reasonable to believe that the cardiac inhibition responsible for the cerebral anemia of syncope relieves the mediastinal vascular distention, and so terminates the pain of the anginal seizure. In other words, the syncope and the angina represent alternative modes of compensation for the common peripheral vasoconstriction.

Cardiac inhibition occurs to a marked extent in nausea and vomiting, and an emetic is a time-honored remedy in angina and in many other paroxysmal neuroses. The relief which follows is not due to the emptying of the stomach, for it may follow upon the supervention of nausea only, and even when the stomach contains no food to be vomited.

But the work done by the heart is permanently reduced in the cardiac failure of advanced cardiac disease, and Oliver has pointed out that patients long subject to precordial pain obtain permanent relief on the supervention of cardiac dilatation and failure.[25] I have seen the same occur myself in several cases, not only of angina, but of asthma also.

4. *The integrity of the mitral valve.* This factor is clearly essential for the development and maintenance of the mediastinal vascular distention. No more effectual means of precluding vascular distention of any area in advance of the aortic opening could be devised than a leak in the mitral valve, whereby much of the onward force of the blood-stream would be lost. For the vascular distention of the mediastinum there would be substituted a tendency to vascular distention of the lungs. Hence it is not surprising to learn that mitral regurgitation is largely inconsistent with anginal seizures. Broadbent has placed it on record that "the supervention of mitral insufficiency may greatly diminish the liability to attacks in cases of angina,"[26] and that the further course of the disease may be entirely changed. It may be added that exactly the same is true of asthma. I have records of two cases of old-standing asthma with emphysema in which mitral regurgitation ensued, and both of which subsequently remained quite free from the asthmatic type of dyspnea.

Manifestly, anginal seizures may be deferred or relieved by removing any of the factors of the supposed mediastinal vascular distention; they may, on the other hand, be precipitated or increased in severity by accentuating any of the said factors. It follows that the simultaneous accentuation of any two or more of these factors will exert an even more powerful influence. This is not difficult to demonstrate. For example, fear or anxiety may be combined with exposure to cold, the sudden commencement of physical exercise, and the digestion and absorption of food following a full meal. A medical man might be summoned shortly after dinner to a sudden emergency, and proceed to walk sharply up a steep hill in the teeth of a strong, cold wind while inadequately clad. There could be no more certain means of inducing a seizure in a predisposed subject. Indeed, the writer, who has no such special predisposition under other conditions, has more than once succeeded in bringing about an excellent imitation of a paroxysm in his own person in the above circumstances. There was considerable precordial pain extending along the left clavicle and into the left scapula with a sense of anteroposterior compression of the left chest, symptoms which demanded instant cessation of the exercise.

While it is thus clear that a long series of authenticated observations recorded of the affection are consistent with the theory of the mechanism of angina here formulated, I have, on the other hand, failed hitherto to find any facts which are at all necessarily inconsistent therewith.

The conclusion at which I have arrived is that the ordinary anginal seizure conforms in its mechanism to many other paroxysmal affections such as migraine and asthma, which may be referred to as "vasomotor neuroses." In all there is a more or less rapidly developing peripheral vasoconstriction, and in all there is a correlative area of vasodilatation. It follows that in each case there is some factor or factors intervening which determines the localization of the differentiating vasodilatation. These, however, require much further elucidation. If we accept Schäfer's view that the coronary vessels are destitute of a vasomotor nerve supply, we must assume that the vasodilatation in the case of angina is purely passive, and due solely to the increased resistance in the periphery. And, further, we must assume that the peripheral resistance is uncompensated, or at least inadequately compensated, either by areas of

vasodilatation in advance of the coronary area, or by vagus inhibition of the heart beat. Hence, some at any rate of the factors determining the special vasodilatation of angina would be negative factors. Amongst such we should have to include an absence of disorders like migraine and asthma—disorders which imply vasodilatation in other areas, and which consequently would tend to prevent the necessity for coronary vasodilatation.

The theory advanced is inconsistent with the view that anginal paroxysms *depend upon* organic disease of the heart walls or valves, of the aorta or the coronary arteries. But it is entirely consistent with the fact that in very many cases the paroxysmal affection occurs in the subjects of organic cardiac and aortic lesions. This statement involves no new conception. Fagge says of angina: "The long duration of the disease in some cases seems inconsistent with the idea that any of the organic lesions . . . can have existed throughout its whole course. Possibly the paroxysms of angina owe to the lesions in question their severity and and their tendency to prove fatal, but do not stand to them in the direct relation of effect to cause. For, if the disease be regarded as a struggle on the part of the heart to overcome an excessive resistance in the arteries, enfeeblement of the cardiac muscle . . . cannot but add greatly to the embarrassment of the heart and the danger of the patient."[27]

It would seem that the angina is not due to the organic lesions any more than is asthma due to emphysema, or migraine to atheroma of cranial vessels. What, then, is the connection between the organic lesions and the angina? The association is far too frequent to be explained by mere fortuitous coincidence. It may be observed that the lesions most commonly found in fatal cases of angina—atheromatous conditions of the aorta and coronary arteries, chronic valvalitis, etc.—are just those lesions which, it is now admitted, are prone to follow frequently-repeated or continued strain, and it is probable that in some cases such strain has taken place, mainly during the actual occurrence of the recurrent anginal paroxysms. But in many others this explanation fails, for the lesions are manifestly of much older date than the angina. Then it seems reasonable to me to ascribe them to the chronic peripheral vasoconstriction—one great factor in persistent high blood pressure—which so commonly precedes the development of angina, and which Huchard has shown constitutes the earliest stage (for the most part unrecognized) of many forms of chronic organic disease of the heart and vessels. In general terms, we may refer the organic lesions and the paroxysmal affection to a common antecedent cause.

Treatment.—This may be divided into (1) treatment of the paroxysm, and (2) treatment preventive of future paroxysms. 1. The treatment of the paroxysm has been almost sufficiently indicated already. Inhalation of amyl nitrite still maintains its place as the most prompt and reliable means of relief in most cases. Where this fails morphine, hypodermically, or chloroform inhalation, will usually succeed. But, in the absence of these drugs, the extensive application of heat to the surface, combined with hot drinks, will generally afford effectual relief. 2. Preventive treatment resolves itself into the prevention of exaggerated peripheral vasoconstriction, continuous or recurrent. Now, of recent years there has been an increasing tendency to regard variations in the composition of the blood as an important factor in determining peripheral vasoconstriction, whether this results in some formal vasomotor paroxysm, such as angina, or in a general increase of vascular tone, with consequent increase of blood pressure. In the malarial paroxysmal neuroses there can be no doubt as to the responsibility of the blood state.[20] But malaria does not enter into the great majority of these affections. The question arises, therefore, whether there does not exist some much commoner hemic factor in the ordinary paroxysmal neuroses. Many have regarded, and still regard, uric acid in solution as a common hemic factor. For myself, I have brought forward evidence to show that one of the commonest hemic factors in the paroxysmal neuroses is "hyperpyremia,"[28] a term which implies that the blood contains an excess of carbonaceous or fuel substances, and this evidence has already been accepted as sufficient in many quarters, notably by Professor Russell H. Chittenden. But, even assuming the responsibility of hyperpyremia as proved, there is yet another equally, if not more, important factor to be considered, namely, the responsiveness of the vasomotor system to the hyperpyemic state. This certainly varies widely with the individual. There would, therefore, be at least two distinct points for therapeutic attack, namely, (*a*) the hemic or humoral, and (*b*) the vasomotor or vascular factor.

The hemic or humoral factor. Acting on the view that uric acid is the common hemic factor, Haig and his numerous followers have treated most of the paroxysmal neuroses by means of a purin-free diet, and there is no doubt that, if in such a diet, the proportion of *purin-free proteid also* is adequately reduced, a certain measure of success will be attained. But such success is, so far as I can see, entirely consistent with the view that hyperpyremia is the real hemic factor in these cases. On the other hand, those who like myself accept the hyperpyremic theory, will pay little attention to the amount of proteid, and none at all to the purin substances, but will proceed to cut down the carbohydrates, especially the saccharine carbohydrates, and the fats. And these, too, will meet with a large measure of success, more especially as I have shown in patients who are well nourished and, above all, in the obese. Further, whichever plan be adopted, carefully graduated physical exercise, by increasing the physiological expenditure of carbon and promoting general peripheral vasodilatation, will vastly increase the success which follows the alteration of régime. Of course, in the case of angina, due regard must be paid to the existence of complicating cardiac and circulatory lesions.

But there will still remain many cases in which the result is incomplete. The carbonaceous foodstuffs may have been cut down as far as practicable; regular exercise may have been persevered with, and yet the paroxysms continue to recur, though perhaps with diminished force and frequency. In such cases it is advisable to operate directly upon the vasomotor system, with a view to diminish its irritability, especially its responsiveness to hyperpyremic conditions. Is there any therapeutic procedure which is capable of exerting a lasting inhibitory influence on the tendency to exaggerated or disordered vasomotor action? Until a few years ago I should have answered unhesitatingly in the negative. Now, however, I have reason to hope that such a therapeutic measure has been discovered, and that it is applicable to the case of angina. The marked and enduring success of the plan introduced by Dr. Alexander Francis, of systematically cauterizing the healthy septum nasi in cases of asthma, spasmodic and other, is now becoming widely known in this country and America. It has been longer known in

Australia. When I had myself succeeded in passing through the inevitable period of incredulity it occurred to me that the procedure might be useful in angina also. Asthma and angina had many factors in common; they were interchangeable, and both depended on an area of vasodilatation correlative of widespread peripheral vasoconstriction. Accordingly, I brought these views before Dr. W. N. Robertson of Brisbane, who, as successor to Dr. Francis, was then practising the nasal treatment of asthma. That was in 1904. In the *Australasia Medical Gazette* of January, 1906, Dr. Robertson's presidential address, delivered at the annual meeting of the Queensland Branch of the British Medical Association, is published. In it he gives his experience of thirteen cases of angina pectoris, all treated by the same intranasal procedure as asthma. He says: "In no case has there been no result, and improvement has generally been more rapid than in the other neuroses." In some the beneficial results were very striking, amounting to practical cure. Dr. Francis also has had several most successful cases, which I believe he intends shortly to publish.

It should be added that in angina pectoris, as in asthma, iodide of potassium, when given in sufficiently large doses, affords in many cases marked relief from the tendency to the recurring paroxysm. The use of the drug at present remains, so far as I know, empirical.

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DIAGNOSIS AND TREATMENT OF THE ACUTE INFECTIONS OF THE GALL-BLADDER.*

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THE great frequency of gallstone disease makes the consideration of one of its most common complications a subject of interest alike to the general practitioner and the surgeon. Acute cholecystitis is so common a complication of cholelithiasis that a knowledge of its symptoms and treatment becomes hardly less important than that of appendicitis, albeit its progress and results may seem less rapid and destructive.

It is an undoubted fact, as Moynihan points out, that the commonest manifestations of the presence of gallstones are never referred by the patient, and too rarely by his medical adviser, to the gall-bladder and its ducts. It requires even yet the unmistakable evidence of jaundice to associate the suffering with gallstones, even to the minds of some medical men. Yet, as we know, jaundice is an inconstant and infrequent symptom.

In the second place, quoting again from the same author, it must not be assumed that though no momentous symptoms of gallstone irritation are present, all is yet well with the patient. In cases in which the most obvious and undoubted symptoms have been present for only a few weeks, there will often be found at operation abundant evidence of chronic inflammation, or even malignant disease, that is but an expression of long-persisting local irritation. It is not, therefore, strictly accurate to say that in the majority of cases gallstones cause no symptoms.

Time will not permit, in a paper of this sort, the discussion of the whole subject of cholelithiasis and its complications, so the writer has selected a group of the different varieties of acute infections of the gall-bladder, which ought to be susceptible of diagnosis in most cases by the attending physician, and which at the same time under prompt and effective surgical treatment yield the greatest number of favorable results, both as regards life and freedom from further trouble. The growing tendency to place within the category of surgical affections many of the diseases of the gall-bladder, which, until very recent years, were entirely within the domain of internal medicine, must be regarded as a mark of growing confidence in the effectiveness of modern surgery in this field of work.

While the pathology of gallstone disease has been rewritten, largely as a result of the observations of the surgeon, of the actual conditions found at the operating table, the diagnosis of these various conditions, unfortunately, has not quite kept pace with the developments in technique. It is of great importance, therefore, to study and compare most carefully the symptoms observed, with the actual surgical findings in each case, so that the physician and surgeon may each understand the other's point of view, and some common point of agreement be reached as to what cases had better be operated upon, and in which cases delay may be counseled with moderate safety. The symptoms of gallstones in the gall-bladder and cystic duct, to which your attention is directed, are those of acute cholecystitis, and they vary, of course, in accordance with the virulence and intensity of the infection. That is to say, where there is no infection there is no cholecystitis, and where there is no cholecystitis of appreciable degree, there are no definite symptoms, except perhaps the colics.

Acute cholecystitis in its various forms is the most common variety of inflammation caused by gallstones.

When a stone becomes blocked at the entrance of the cystic duct, infection, as a rule, speedily follows; effusion takes places and inflammation of the walls of the gall-bladder follows. An acute inflammation, therefore, may be the forerunner of either a hydrops or an empyema.

The inflammation may start at either the fundus

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or any other portion of the walls of the gall-bladder. The swelling rapidly spreads until the whole of the mucosa is involved and the opening of the cystic duct becomes blocked. Thus it happens in acute cholecystitis that the occlusion of the cystic duct may be either the primary cause or the secondary result of the inflammation.

The symptoms, then, of an acute attack of cholecystitis are similar to those of an ordinary attack of biliary colic, except that the gall-bladder is enlarged, tender, and frequently palpable. Jaundice is never present in these cases unless the inflammation extends down the mucosa of the cystic and involves that of the common duct. Such extension is extremely rare. The swollen gall-bladder is sometimes the seat of pain, which may radiate to the back, the chest, or the abdomen, and the affected side may feel stiff and sore for days.

The varieties of acute inflammation of the gall-bladder are (1) the catarrhal, (2) the suppurative, and (3) the phlegmonous or gangrenous. Any of these forms may arise independently of gallstones, but in most cases it is the damage done by a calculus that opens the path to infection either from the contiguous gut or through the blood stream.

The symptoms of acute cholecystitis are not unlike those of appendicitis, and any of us may perhaps be pardoned for occasionally mistaking the one for the other. The writer is free to confess his fault in this direction.

Pain, the first symptom, is sudden in its onset, increasing rapidly, and may be paroxysmal or continuous. It is felt mostly over the liver, especially along its lower border, but it may radiate widely and mimic closely, the pain of acute appendicitis, or subacute perforation of the stomach or duodenum.

Other symptoms of infection soon occur, and nausea, often vomiting, prostration more or less marked, and tenderness over the region of the gall-bladder opposite the right ninth or tenth costal cartilages become marked features in the case. If the infection extends through the walls and involves the overlying peritoneum of the gall-bladder and adjacent viscera to any considerable extent, the symptoms become more severe, and may closely resemble those of an acute intestinal obstruction. The temperature is generally elevated to 100° or more, and the pulse becomes feebler and more rapid.

The organism found in cultures taken from cases of acute cholecystitis is generally *B. coli communis,* though in the suppurative forms streptococci and staphylococci are frequently present. The typhoid bacillus and the pneumococcus may also be found. Indeed, the relation of typhoidal infection to many cases of acute cholecystitis, with or without stones, is undoubtedly causal and always striking and suggestive. In only one case has the writer seen an acute cholecystitis develop in the early days of typhoid fever, although it not uncommonly follows the disease, apparently as a direct sequence. So long as the inflammation is limited to the mucosa, the symptoms are apt to be mild, and the life of the patient is not endangered, although an intense infection may follow a mild one, as happened in one of my own cases hereafter reported. One attack of cholecystitis predisposes to another from the fact that the stone is not usually passed out of the gall-bladder, but drops back again ready to start up another more or less severe attack after a variable period of latency.

This period of "latency" so called varies much in different cases; it is sometimes short, sometimes very long, and upon the fact that some cases of troublesome stones reach a period of "latency" is based the claims of certain cures by internal medication. Indeed, if one could predict infallibly that the period of latency in a given case would be very long, or practically under the control of internal remedies, this of course would be a rational ground for the physician to deny the necessity or desirability of operation. This, of course, being impossible, in cases especially where the periods of latency are short, and the suffering in the attacks is considerable, other things being equal, the choice lies between operation and its known results and the cultivation of the opium habit and a condition of chronic invalidism. Although Naunyn has claimed that a *restitutio ad integrum* is possible after a single attack of undoubted cholecystitis, it is not probable, to say the least, from a knowledge of the pathology, and cannot be counted upon. The stone, which remains behind in the bladder after most attacks, lies ready to renew the attack again and again, and the barriers of defence gradually diminish in the presence of ulcerations, strictures, and other structural changes in the walls of the gall-bladder and in the adherent surrounding viscera. In many cases, even when the symptoms are slight, the inflammation penetrates the peritoneal coat, and plastic lymph, replaced later by more or less dense adhesions to adjacent viscera, may render more difficult the best-planned operation for relief. These adhesions may persist, even if the stone or stones do pass into the intestine, and give rise to symptoms identical with the original trouble, all of which facts argue for early operation.

As a rule, the tenderness and rigidity of muscle are limited to an area immediately below the free border of the right ribs, just below the free edge of the liver. When a tender mass is palpable, the diagnosis is easy, but the gall-bladder is frequently tucked under the projecting Riedel's lobe, and is not palpable. In these cases the tenderness and muscular rigidity of the upper segment of the right rectus muscle, together with the tenderness elicited by pressing the hand under the free border of the right ribs and getting the patient to take a deep inspiration, which is immediately and strikingly interrupted when the inflamed gall-bladder is crowded down, will make the condition clear.

The most serious form of acute cholecystitis is the phlegmonous variety, wherein all the signs and symptoms are much more intense and threatening, and the results almost inevitably fatal in short order, if immediate surgical operation is not performed. The clinical picture in this variety may perhaps best be illustrated by one of my own cases of acute phlegmonous cholecystitis of recent date.

F. E., male, 53 years old, admitted to Roosevelt Hospital, January 22, 1906.

Family history, negative. He had typhoid fever at 14 years of age.

One year ago he had an attack of pain in the right side radiating to the shoulder, with fever and slight chill; he was slightly jaundiced, and was in bed 14 days. He was seen by Dr. Blake, who advised operation on the gall-bladder, which the patient declined. Since this attack the man has suffered considerably from indigestion, "biliousness," and headache. Five days before admission he was seized with a "deep, unbearable" pain, in the epigastrium and gall-bladder region, which radiated slightly into the shoulder. This attack followed an indiscretion in eating. His physician reports him to have been without fever until the day before admission, when he was seized with severe pain and went to bed

again. On the morning of the day of admission he suddenly became very ill, alarmingly so; his temperature shot up to 106°, his pulse went to pieces, and he became slightly delirious. He was seen in consultation with Dr. Stern, and found in bed with a tender spot over the gall-bladder, but no tumor was felt. He was advised of the seriousness of his condition and immediate operation urged, which he declined. In the late afternoon, his condition becoming worse, he was sent to Roosevelt Hospital.

He had had no vomiting, but very slight jaundice, and clay-colored stools were noticed on day of admission.

On admission temperature was 107°, falling before operation to 104.5°. He looked very sick, and his pulse was rapid and of poor quality.

There was no abdominal distention, no tumor, but very marked tenderness over gall-bladder region, and on lateral compression of the ribs. There was rigidity of the upper segment of the right rectus. A diagnosis was made of acute cholecystitis, and the patient was prepared for operation. Leucocyte count, 4,500 to 5,000. Differential showed polynuclears 87 per cent., lymphocytes 11.5 per cent., large mononuclears 5 per cent., transitional 1 per cent. Red blood corpuscles, 4,000,000. Examination for malaria was negative. The urine was dark reddish in color, sp. gr. 1022; light cloud of albumin, many hyaline and a few waxy and granular casts. On the third day after operation, when the temperature rose to 103°, the leucocyte count was 15,000; polynuclears, 87 per cent.; others, same as before; red blood corpuscles normal in number.

Operation—incision through the upper right rectus. The gall-bladder was large, but concealed under the right lobe of the liver, distended, and soft pus was obtained on aspiration. The wall was succulent and easily torn, recent fibrin on surface. It was detached from the under surface of the liver without much hemorrhage. The cystic duct and artery were clamped and tied with catgut, and the gall-bladder was excised. A rubber tube, wrapped in gauze and covered with rubber tissue, was passed to the stump.

On opening the bladder no stones were found, but the mucous membrane was deeply congested, soft, and ulcerated in spots, and the walls in places seemed almost gangrenous. The pathologist, Dr. Hodenpyl, reports intense exudative inflammation, involving the entire wall of the gall-bladder, which is considerably thickened, and he adds that the patient is entitled to a secondary liver abscess. Saline infusion, 1,000 c.c., was given during the operation. Patient returned to bed in fair condition; some pain; morphine and saline irrigations later.

Next morning the temperature fell to normal and the patient felt comfortable, though very weak. On the third day the temperature rose to 103°, but soon became normal again, and this fall was accompanied and followed by a discharge of bile from the wound, which continued only for a few days and in much diminished amount. The patient was very drowsy. Saline irrigations through a rectal tube were given.

The first satisfactory movement was obtained on January 28. Two days later the drain was removed and the sutures taken out. The wound was in a satisfactory condition. A small gauze drain was inserted and straps applied.

The patient was discharged on February 11. Differential count showed polymorphonuclears, 87 per cent.; lymphocytes, 11 per cent. Convalescence was marked at first by the sleepy condition of the patient and occasional headaches and difficulty of securing a satisfactory movement of the bowels. At time of discharge there was small sinus, with practically no discharge. The patient was able to get about the halls well and without much fatigue. The condition of the urine cleared up considerably, and at the time of the patient's discharge showed a sp. gr. 1018, faint trace of albumin, a few hyaline casts, and a few leucocytes.

The clinical features of this case are very striking, and the close relation between the symptoms and the pathology, together with the prompt relief afforded by operation, are very impressive. Cases of this sort should not be overlooked very frequently, and when the diagnosis is made only prompt operation can save them.

The course of a case of acute catarrhal cholecystitis varies within moderately wide limits, according to the degree and extent of the infection and the number and character of the previous attacks. As a rule most of the cases tend to resolve, although a certain proportion of them, beginning with mild symptoms, become suddenly hyperacute and demand surgical interference. The symptoms, pain, tenderness, and tumor, after a longer or shorter time, may gradually or rather suddenly disappear, and the attack ends, only to be repeated at a longer or shorter interval. One waits with greater confidence for the resolution of an attack of acute inflammation of the gall-bladder than in a similar attack of acute appendicitis, for even in a moderately sharp attack of acute cholecystitis the symptoms at the end of two or three days are as a rule the cause of less anxiety than at a similar period of acute appendicitis. When, however, the symptoms are becoming more severe, it is better to operate promptly than to wait, for operations on the gall-bladder seem to be equally well borne in the period of acute inflammation or in the interval between attacks. This at least has been the experience of the writer.

The indications for operative treatment in acute cholecystitis are evident to all who have seen upon the operating table the serious conditions which result from delayed surgery. Every practitioner should renew his knowledge of the pathology of gallstone disease by a careful study of actual conditions observed on the operating table, and direct his patients accordingly. It is unfair to the patient and to the surgeon for the internist to base his advice as to operation upon the results in delayed and complicated cases and those in which operation is undertaken as a forlorn hope. In justice to American surgery he must base his conclusions upon the best results of the best men and put the question fairly to the patient who comes for relief. There will always be many cases which will never entertain any question of operation except as a last resort, and there are many others with mild and infrequently recurring attacks of cholecystitis to whom the joys of Carlsbad appeal with greater fascination than the cold logic of surgery. Then there are other cases in which, by reason of age, in connection with some grave lesion of heart or other viscera, no operation would be undertaken except in some dire emergency. Ruling all these out of consideration, there remains a large number of cases of recurring acute cholecystitis, mostly young or in vigorous middle life, whose existence is often made miserable by recurrent and severe attacks of pain which incapacitate them for longer or shorter periods. Can the medical man safely recommend surgery in these cases? A survey of the literature of the subject will abundantly justify an affirmative answer. The statistics of recent

years show a mortality so low in cholecystostomy and primary cholecystectomy, that the internist may offer his patient a surgical operation for the relief of his suffering which is prompt, efficient, and safe in any proper case, and offers the only radical and curative measure of which we have any knowledge.

The promise of a brilliant future in gallstone surgery lies not in the elaboration of technique so much as in the prompt diagnosis and early resort to the simpler operations upon the gall-bladder, before serious infection, adhesions, duct invasions, and blood changes have made any undertaking more severe, more hazardous, and less effectual. As greater certainty in diagnosis is reached, there will be less call for the difficult and more dangerous operations upon the common duct, a smaller number of cases with acute and chronic pancreatitis, and the operation of cholecystenterostomy will become very much rarer than it is now. One has only to glance at any large table of operations for gallstone disease to appreciate the truth of these statements. In the 1,000 cases reported by the Mayos a year ago, 673 were operated upon by cholecystostomy, with a mortality of only 2.4 per cent. This group included most of the acute infections of the gall-bladder, and this was the operation of choice where cholangeitis was or had been present and where drainage of bile was an important factor. There were in this same group also 186 cholecystectomies done, with a mortality of 4.3 per cent. There were 137 operations upon cases of common-duct stone, with a mortality of 11 per cent. The marked increase in mortality in the cases of late infections and common-duct obstruction is very striking and suggestive.

The scope of this paper limits the discussion to the treatment of cases of acute infections of the gall-bladder. What should be the attitude of the physician toward the question of operation in these cases? Can he safely recommend it, or is it safer to wait and let the patient drift along? Cases seen in the first attack (seldom seen by the surgeon anyway), in which the symptoms are slight, rapidly subsiding, and there is no peritonitis, may properly be considered fit cases for observation for careful diagnosis. In a small proportion of these cases (about 10 per cent. according to Elsberg) there is only one stone, or only very small stones and mucus, which pass out into the intestine and the cholecystitis disappears. In about 70 per cent., it is estimated, the stone does not pass, but remains in the cystic duct or drops back into the gall-bladder, where it remains latent for a while, the swelling of the gall-bladder disappearing. Cases seen in subsequent mild attacks present a nice problem, in that they are often ideal cases for primary cholecystectomy, which one naturally hesitates to urge in the absence of an absolutely certain diagnosis. Such a case has recently come under my charge in the person of the wife of a physician, in which the question was a difficult one, but, aided in the solution I must say by the very sensible attitude of both patient and her husband. In this case symptoms had been present less than a year, but were acute, and the attacks were becoming more frequent. I removed her gall-bladder a few weeks ago and found an acute cholecystitis and several moderate-sized rough stones, the cystic duct being nearly occluded by one of them. In this, as in similar cases, I removed the gall-bladder, as it was practically cut off from the bile circulation and there was no cholangitis. The operation is often a very easy one, especially when one uses a sandbag under the back to push forward the gall-bladder and ducts, and it takes no more time than a cholecystostomy in which the gall-bladder is stitched to the parietal peritoneum and drained. Wherever the necessity of drainage is present, and it often is imperative, an operation which provides most easily and safely for it is the best one. Thus many surgeons employ cholecystostomy as fulfilling all the indications in the simplest manner, while others prefer to remove the gall-bladder, when this can be done easily and without sacrificing the interests of the patient, and drain when indicated from the cystic duct, which is readily accomplished. Park, Riedel, Winiwarter, Lilienthal, and many others are warm advocates of primary cholecystectomy as the ideal operation when possible, and an increasing experience leads the writer to believe that the indications for this operation are constantly broadening.

A third set of cases exists which for a few days give evidence of only mild local infection, but suddenly develop signs of local peritonitis, with heightened fever, rapid pulse, and signs of general sepsis. These cases all require early operation, a prompt cholecystectomy or cholecystostomy, with drainage of the gall-bladder. Under this treatment many recover who would surely go on to death from sepsis or perforation and general peritonitis. As is well known, the common-duct cases, so called, are the most dangerous because most often overlooked or neglected until, in a condition of exhaustion and cholemia, they come to operation. It is surprising that so many of these patients recover. Modern surgery has made even this possible, but it should be always remembered that a chronic jaundice and cholemia will often defeat the most perfectly planned and executed operation, and that the hemorrhagic oozing so common in these cases may go on to a fatal termination, in spite of any treatment thus far devised. It should be our duty, then, to advise early operation in infections of the gall-bladder before perfectly preventable complications exist, and we should expect as satisfactory results as in cases of appendicitis, which are submitted to early operation and with no greater mortality.

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ILLUSTRATIVE CASES OF PROSTATIC CARCINOMA.

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A critical study of recent literature of malignant neoplasms of the prostate produces the impression that carcinoma of the prostate, along with carcinoma in other situations of the body, is notably upon the increase. In the past it has been considered an extremely rare occurrence, although recognized to be the usual variety of malignant growth of the gland. The fallacy of this doubtless lies in the poorer methods of diagnosis of a decade ago and the comparative infrequency of surgical attack upon the organ prior to that period. Thus many cases of prostatic carcinoma have probably been diagnosticated under the generic term of enlarged prostate which, if their true structural nature had been investigated, would have proved to have been malignant. Such an observer as Albarran has demonstrated carcinomatous changes in from 10 to 14 per cent. of cases of prostatic hypertrophy. The impetus which operators during the past few years have given to prostatic surgery in their attempts to alleviate the suffering due to urinary obstruction, coupled with more accurate microscopical diagnosis, have probably been the potent factors in the production of the

seeming increase of the disease. At all events, the prostate is one of the rarest localities for carcinoma to become manifest. In a thousand cases of carcinoma in various situations Weber found only thirteen involving the urinary organs. Even in the reported cases the diagnosis, in many instances, is still doubtful because of the possibility of confusing hyperplastic growths with true carcinoma.

Prostatic cancer presents itself at the two extremes of life, namely in early childhood or in advanced years. About four-fifths of all malignant growths of the prostate are carcinomatous. There is a diversity of opinion as to the relative frequency of the growth being primary or secondary in the prostate. Not infrequently tumors are described as primary, when the origin is really from the epithelium of the bladder, the growth invading the gland secondarily. We believe it is more often primary than is ordinarily supposed, and develops either in the mucosa of the prostatic urethra, diffusely through the entire gland, or may form a discrete nodule in one portion of it. The process may be of the medullary type, or show the structure of adenocarcinoma. In regard to extension to other organs, Guyon claims that carcinoma, which is primary in prostatic origin, is more liable to invade the pelvic lymphatic system than to extend directly to the bladder. If the growth invades the bladder it is along the ejaculatory ducts into the posterior wall. Extension into the pelvic tissues and viscera, with final invasion of the bones of the pelvis, is met with only in late cases. When once the bone is involved the tumor may assume a diffuse form and involve a considerable portion of the pelvis, the vertebral column, and the long bones of the lower extremities. Exceptionally, the entire skeleton may be involved even when the primary growth is relatively small. Secondary carcinoma is usually due to an extension of a renal, vesical, or genital lesion. The cases which I have selected to report in this paper, although very characteristic, embody certain features of special interest, which, I think, justifies a more or less detailed presentation of their histories.

Case I.—This patient, who was eighty years of age, had been an invalid for many years, suffering from a large, right-sided, irreducible, inguinal hernia. Although incapacitated on account of the size of the hernia, there had never been any obstruction of the intestinal function. He denied any venereal or previous urinary history. The condition presented itself as follows: He awoke one morning, and to his surprise found his bed-linen and night clothes saturated with blood. He found the source of the hemorrhage to be from the meatus of the penis. He stated that at no time had he ever observed blood in the urine or exuding from the meatus. The interval of urination had been every four hours during the day and about the same at night. The urinary flow had always been free and absolutely painless. The only symptom was the hemorrhage. Spontaneous urination was impossible. He was a large, plethoric man, and unusually well preserved for his years. Physical examination was negative, except for a greatly distended bladder, the fundus of which reached almost to the umbilicus. By rectum a hard, diffusely enlarged prostate could be felt. A soft catheter drew 10 ounces of blood and urine. Local measures failing to check the constant urethral oozing, suprapubic cystotomy was decided upon. This was performed six hours after the initial bleeding occurred. The bladder was found distended with blood clot, which, being evacuated, a hard, nodular mass was found involving the whole of the prostate. The hemorrhage emanated from an ulceration on the left side of the tumor near bladder base. The patient's condition, on account of the large amount of blood already lost, did not warrant any extensive operation for the tumor's removal, so the bladder was merely packed and drained, no attempt being made to enucleate the tumor. He required infusion while on the table, and left the operating room in grave condition. He recovered from the operation in much better condition, however, than could be expected. During the first day he drained thirty ounces of urine through the tube in addition to the amount which leaked into the dressing. His highest temperature was only 100.4°F., with a pulse of 80 and respiration of 22. He held his own for two days, when uncontrollable vomiting of bile-tinged fluid set in, and he died suddenly four days following operation, apparently from exhaustion. There was no hemorrhage after the bladder had been opened and packed.

The autopsy findings, which were most unlooked for, in view of the fact that the patient had presented no symptoms referable to some of the lesions found, were as follows: Heart, normal; lungs, a few adhesions at base behind; liver increased in size; Spigelian lobe showed a thick layer of pus and fibrin, forming superior boundary of an abscess cavity; gall-bladder distended, contained numerous gall-stones; its surface covered with inflammatory exudate, with marked thickening about common, and cystic ducts forming part of the abscess wall. Duodenum: An inch and a half from pylorus on posterior surface were two ulcers, with clean-cut edges, communicating with the abscess. The uncovered portion of the duodenum was covered with plastic exudate, and formed last boundary of the abscess. The abscess contained two ounces of pus. The prostate was large, hard, and from the left lobe sprung a papilomatous ulcerated growth. Pathological examination showed the tumor to be carcinomatous, with deposits throughout the whole prostate.

Löwenheim has reported a case of sarcoma of the bladder with metastatic sarcomatous gastric ulcers, but in the case just cited the writer is led to believe the dual condition a coincidence. The duodenal ulcers presented no anatomical or microscopical evidence of being malignant in character.

Sudden hemorrhage from the bladder, especially if unattended by pain in a man over fifty years of age, who gives no history of previous bladder trouble, is most indicative of prostatic cancer. In purely vesical growths pain is more apt to be an early accompaniment of the hematuria, obviously depending somewhat upon the location of the neoplasm. In Young's series of forty cases, however, he states hematuria present in only eight cases, in four of which the bladder was involved as well.

Case II.—This, like the preceding, is another one in which sudden hemorrhage from the bladder first directed the attention of the patient to his malady. He was fifty-four years of age, and in his own estimation never enjoying better health. While on a railway journey he felt a desire to urinate. This he tried to do, but was unable to for ten minutes, when, with a gush, he voided a large quantity of blood clots and bloody urine. This was followed by frequent urination of bloody urine for twelve hours and a slow cessation of the hemorrhage. The only previous history of any urinary disturbance consisted in two attacks of frequent urination and burning in the perineum, one following a long horseback ride and exposure to cold ten years before, and the second, five years later, after a tedious donkey ride in Egypt.

After the initial hemorrhage had cleared up, the patient would void bloody urine only at intervals, usually worse at night. Not having any pain, he did not become alarmed about himself until the symptom had existed for two months, when he came under our observation. Cystoscopy, which was performed with difficulty on account of the size of the prostate and bleeding, demonstrated a bleeding tumor projecting from the right lobe of the prostate. Suprapubic opening of the bladder and removal of the tumor was decided upon. This was carried out some days later. A sessile tumor was found springing from the prostate, near the base of the bladder, with nipple-like projections into the trigone. The prostate, tumor, and its projection were removed by extensive blunt dissection, and the base of the bladder was cauterized by the actual cautery.

Subsequently to the operation the patient did well for twenty-four hours, when he developed intestinal paresis and died from peritonitis at end of the third day. It was impossible to obtain a general autopsy, but the pelvic viscera were examined after death through the suprapubic incision, and no macroscopical extension of the growth into them noted. Sections of the prostate, tumor, and projections of it into the trigone proved to be carcinoma.

One of the most distressing features of prostatic neoplasm is that the growth has advanced to an almost inoperable extent before it becomes manifest to the patient by subjective symptoms.

Case III.—This case furnishes a typical illustration of what has just been mentioned. When first seen the patient stated that for several months past he had been obliged to urinate frequently day and night, had paid no particular attention to it, and it was only at the solicitation of his wife that he consulted a physician. When examined he was urinating every two hours, with smarting pain in the glans and at times a little blood in the urine. Per rectum a moderately enlarged prostate was felt, with no tenderness in it excepting in the posterior lobe, where he complained on the slightest pressure. Examination of urethra or bladder was impossible on account of the exquisite pain produced when an instrument touched the prostatic urethra. Expectant measures were instituted, and after a few days, his general condition becoming worse and the patient demoralized about himself, he was given an anesthetic, with permission to open the bladder if, after examination, it was deemed advisable. A searcher introduced into bladder, requiring marked depression of the handle to do so, was obstructed in rotation by a large mass in the right lobe of the prostate. It was decided to open the bladder and ascertain the pathological condition present. A large mass of carcinomatous tissue was found occupying the prostate and base of the bladder, and surrounding the internal meatus. It was inoperable. The bladder was drained by Gibson's method.

Sections removed for microscopic examination proved to be carcinoma. The patient died at the end of two days from peritonitis, probably due to colon bacillus infection. Whether this tumor was primary or secondary in the prostate is impossible to know.

The rapidity of the growth of prostatic cancer is dependent, as elsewhere, upon its structural composition.

Case IV.—Scirrhous carcinoma of the prostate. The patient was sixty-two years of age. For two years before coming under observation he had gradually increasing feebleness of stream, hesitancy, frequency, and nocturnal urination. No pain until these symptoms had existed eighteen months, when intermittent hematuria appeared. The relation of the symptoms was not constant, the pain, blood, or frequency occurring independently of each other. The pain was referred to the glans penis and perineum. By rectum the finger palpated a large, broad, elongated prostate, the middle lobe of which was very hard as compared with the rest. Toward the apices of the lobes were hard, irregular nodules. Urethral length, 8¼ inches; 10 ounces of residual urine. The bladder was opened by suprapubic incision. An irregular, friable tumor was found involving the prostate and surrounding the internal orifice of the urethra and extending into the prostatic urethra. The whole of the prostate was removed, together with the neoplasm. The morphological appearances of the tumor showed it to be largely composed of connective tissue, with diffuse inflammatory infiltration with pus cells. A number of the fragments contained strands and masses of epithelial cells not arranged in regular groups. The patient did well, and for some months after operation was as comfortable as if he had had merely a prostatectomy performed for simple hyperplasia; but slowly the lesion reasserted itself, the extension being into the urethra. *X*-ray treatment was used with no benefit, and ten months after operation, when he was lost sight of, the only comfort he could get was by frequent recourse to opiates.

Case V.—This is a case in which the writer removed a scirrhous carcinoma of the prostate, the patient living a year. Permanent suprapubic drainage was instituted at time of operation, and the patient enjoyed a measure of comfort until recurrence of the growth filled the pelvis and obstructed the rectum. In this case also *x*-ray treatment seemed to have no effect upon retarding the growth.

In reviewing our experience and that of others, the futility of our endeavors to do more than palliate the patient's sufferings by operation is only too apparent.

The whole question resolves itself into one of early diagnosis and operation if we are to accomplish any lasting results. If the steadily increasing number of reported cases prove carcinoma to be suspicious in a tenth of cases of prostatic enlargement, we must be more acutely on the lookout for it. As we have come to regard the smallest tumor in the breast as a possible focus of malignant trouble, and hesitate to pass judgment upon it until microscopical sectional diagnosis has aided us, so ought we to hesitate in pronouncing enlargement of the prostate to be simple hyperplasia until it has been so proven by the pathologist. The early recognition of carcinoma in any locality is imperative, and nowhere more so than in the prostate. Unhappily, this is a very difficult problem. The cystoscope may reveal merely an increase in size of the gland, while beneath its firm capsule an insidious destroyer of life is forming, only to burst forth into too certain cognizance when we are impotent to remove it. It is a sad commentary that practically our operative endeavors are only directed towards rendering the remainder of the patient's life more livable. The majority of patients, if the disease is at all advanced, live longer if palliative measures are employed than by extensive radical operation. Permanent suprapubic drainage has, in our hands, given the greatest comfort to the patient.

Watson offers bilateral lumbar nephrostomy and the establishment of permanent renal fistulæ, with or without removal of the tumor, as the case may allow, for relief of vesical malignant disease. This might include similar disease in the prostate, as the conditions are so intimately allied. We fail to see

the improvement in this oversuprapubic drainage, except in such cases as permit total removal of the tumor, or unless it can be proven that the diversion of the current of urine inhibits the rapidity of the extension of the growth.

Young's four cases of removal of the entire prostate, seminal vesicles, vasa deferentia, and major portion of the vesical trigone for prostatic cancer, are brilliant results, and illustrate how well a small amount of bladder left behind will adjust itself to perform the function of the intact organ. As we have learned in dealing with carcinoma elsewhere, radical cure can be only hoped for by early operation and wide removal. The symptoms offered by the patients are not pathognomonic, and the results of our physical examination often leave us in doubt as to the true nature of the disease. It seems, therefore, that the only line of surgical advance points clearly to the fact that in operating upon any hypertrophic condition of the prostate, we should make use of the additional data derived from microscopical examinations of frozen sections at time of operation in order to determine the extent of our operative procedure.

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KOPLIK SPOTS; THEIR RELATION AND INTEREST TO LARYNGOLOGISTS.

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Although the study of the anthemata of measles belongs mainly to the province of the general practitioner, the attention of throat specialists is called especially to the early prodromal eruption in the mouth, the diagnosis of which goes far toward solving the problem of controlling the spread of epidemics. Every now and then a case is seen in either the hospital or clinic exhibiting the tiny pearly white Koplik eruption on the mucous membrane of the buccal surfaces. Occasionally, also, the specialist is called to verify the diagnosis before the eruption, already begun on the face and chest, and has progressed sufficiently as to be self-evident.

Considerable satisfaction is derived from an opportunity of isolating a child exhibiting the pathognomonic sign of measles, informing the parents as to the nature of the contagion and two or three days later, having our foresight rewarded by the appearance of the characteristic maculopapular eruption on the skin.

If the inner surfaces of the mucous membranes of the cheeks are carefully examined in the slightest indisposition of children, we can in most instances diagnose the disease at least thirty-six hours before the later cutaneous eruption.

For some reason I have noticed that Koplik spots appear the earliest on the mucous membrane, near the angle of the mouth and in areas covered by the gums. When there has been a history of exposure, plenty of warning is usually given by a persistent cough—in some instances a week or more before any other symptom.

A good, clear, strong light is essential; reflected light cannot always be relied upon. What we are looking for is the tiny pearly white spot on a red background of mucous membrane. The actual deep injection of the hard and soft palate and reddening of the mucous membranes in general, are the latest of the prodromal signs and not especially distinctive.

There is probably no such hybrid as so-called German measles. This type is merely a slightly atypical picture, likely to be met with in any disease. Certainly the ordinary type of measles can be contracted from this abortive type. Dr. Henry Koplik of New York maintains that the exanthema, the eruption in the mouth which bears his name, may be present fully five days before the exanthema, the eruption of the skin, and this without any manifestation whatsoever to signalize the onset of the disease. From the fact that in hospital wards the spread of the contagion is checked among the children if the cases are isolated before the skin eruption we infer that the prodromal rash is contagious to but a very moderate extent. To Dr. John H. McCollom of Boston (chief of infectious wards, Boston City Hospital) we are also indebted for many observations along these lines, gathered from a peculiarly rich experience of many years. His remarks on smallpox and diphtheria do not by any means form his chief contributions to literature.

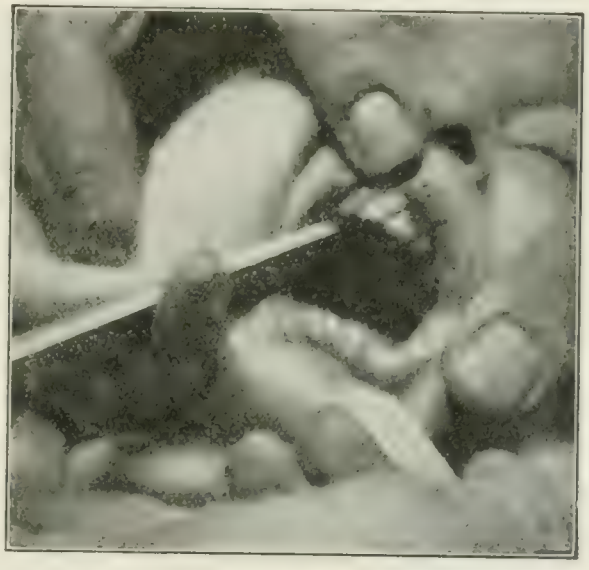

Fig. 1.—Koplik's prodromal eruption on the lips and gums in a child 5 years old. Taken ten hours before the exanthemata was at all characteristic. The papular infection of the face is the result of a purulent discharge from the right eye.

The following classical description by Koplik conveys as clear a word picture of the prodromal sign as can be given: "On looking at the mucous membrane lining the cheeks (buccal) in strong sunlight a very characteristic eruption of irregular stellate or round rose-colored spots is seen. In the center of each spot there is a bluish-white speck. This appearance of a bluish-white speck on a rose-colored background is pathognomonic of the onset of measles. The speck is sometimes so minute that strong light is necessary to render it visible. The number of specks at the outset may be less than half a dozen. In a short time they become more numerous and the rose-colored spots become confluent, so that there are diffusely red patches of buccal mucous membrane studded with bluish-white specks. They are seen on the inner surface of the lips and gums."*

This eruption practically disappears when the exanthema on the body becomes well developed. Sometimes the minute bluish-white specks coal-

*Koplik, H.: Diseases of Infancy and Childhood, p. 262, Second Edition.

esce and form larger white spots on the lips, as may be seen in Fig. 1. The appearance of the eruption on the mucous membrane of the cheeks when at its best is not unlike a countless number of checker-boards grouped together. Neither photograph brings out the white specks on the gums or cheeks very well. A raw area is left when the Koplik spot disappears. The spots are never seen on the hard or soft palate or pharynx.

Aphthous stomatitis is probably the principal condition which might be mistaken for measle spots. It is usually readily distinguished by the fact that the small ulcerated areas are situated on normal mucous membrane and are more or less yellowish-white in color and always discrete. The active eruption of measles is in itself a form of stomatitis.

Now and then irregular teeth and decaying food particles will produce irregular, very small white blemishes on the mucous membrane of the cheeks, but their location and situation on perfectly normal membrane under normal nonvarying conditions, will preclude a mistaken diagnosis. The early Koplik spots can be so mutilated by

Fig. II.—Koplik's eruption on the mucous membrane of the left cheek of the case illustrated in Fig. I.

the mechanical introduction of the wooden tongue depressor as almost to prevent temporarily an interpretation of their real nature.

The patient who furnished the accompanying pictures was a child five years of age, an inmate of the Massachusetts Charitable Eye and Ear Infirmary. He had been directly exposed to the contagium. A slight, infrequent, but gradually increasing cough was noticed eight days, the first Koplik spots three and one-half days, symptoms or coryza two days, and moderate temperature one day, before any eruption on the skin. The cough was the rather hard, dry, hoarse laryngeal cough almost peculiar to the condition.

As measles is perhaps the commonest of the infectious diseases of childhood and very few individuals arrive at adult age without having had an attack, the necessity of an early diagnosis for quarantine purposes cannot be emphasized too strongly. The Koplik eruption practically removes the greatest element of uncertainty in the early diagnosis, hence there can be little excuse for the continued and wide extension of the disease.

The discovery of the contagium still continues to withstand our best endeavors. Whether we should seek the specific poison in the secretions of the upper respiratory tract, in the actual eruption on the skin, or in the blood is still a matter of doubt. Certainly the contagion is so virulent that when once introduced into a hospital ward the spread of the disease is rarely checked until either all of the unprotected children suffer or the cases are isolated in time to prevent further mischief. One attack, fortunately, usually, protects against a second. The incubation period may be as short as seven days, or even as prolonged as three weeks.

The buccal complications and anginas of the infectious fevers surely merit considerable attention from both laryngologists and otologists, not only because of their frequency, but from a most practical standpoint. The angina of scarlet fever with a marked punctate eruption on the roof of the mouth and a strawberry tongue preceding a delayed rash, although rather rare, is given as an example. The ofttimes close similarity in appearance of a streptococcus patch to that of the true Klebs-Loeffler membrane on the tonsils needs but to be mentioned. Even syphilitic patches may be confounded with both.

My object in this paper is not to present any new theories or set of facts, but to call the attention of throat specialists more closely to an interesting condition which is occasionally observed.

THE MEDICAL MUSEUM.*

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In every great metropolis peopled by men of superior intelligence the museum is a preeminently well-recognized institution. Thus, the treasures of art and science contained in the British Museum and the Louvre, in the Museum of Northern Antiquities of Copenhagen, in the vast collections of Vienna, Berlin, Venice, Florence, Rome, Naples, Seville, and New York constitute at once the chief ornaments of these respective cities and one of the most potent of their educational factors.

Among the various departments of science thus represented medicine has by no means been neglected. All great cities which by any courtesy can be called centers of medical learning have their medical museums. Washington, Philadelphia, Boston, not to speak of many of the cities of the old world, have famous collections, too well known to you to require mention. Strange to relate, our city, the greatest and most progressive of them all, has practically none. For many years it has been my hope that a collection worthy of the fame and wealth of New York might be established here. Thanks to the gentleman now in the presidential chair of the Academy of Medicine, the initiative in this direction has been taken, for he has recognized the possibilities of the situation, and by his own generous example and by the inspiration of his enthusiasm has opened the way for us to follow him in the accomplishment of this important work.

Should any question arise as to the value of the suggestion which he has made, it may easily be answered. A collection such as is proposed for the Academy of Medicine has the same reason for its existence as has that of the Historical Society, or even the written pages of history itself.

*Remarks on the presentation of a collection of laryngological instruments to the New York Academy of Medicine, October 4, 1906.

To be of use our collection should represent a truthful record of the past. Its scope, for the present at least, should be mainly historical. It should include old instruments, most especially such as have been original models of new inventions or as offer good examples of standard instruments of the time. Many good specimens of this kind are now available which in a few years will be surely lost.

Again, old prints and illustrations representing the men, the methods, and the customs of our profession in the past will have great and ever-increasing value. Without such a collection a great library would certainly be incomplete.

Finally, while the shelves of a practical working library should never be encumbered with obsolete trash, there are certain classes of ancient books which are of almost priceless value, for many reasons besides purely sentimental ones.

Many of the objects contained in such a collection would be unique. If lost they could not be replaced. Their permanent preservation, therefore, is a matter of vital necessity.

As to the functions of our museum, the specimens which it presents may be lively reminders of great men, and therefore worthy of contemplation. They are, moreover, mementoes of notable achievements, full of inspiration to the thoughtful mind. Again, marking the advance of knowledge, they are milestones in the onward progress of medical science.

Practically studied, the objects which the museum contains may be divided into two classes, namely, the good and the bad. It goes without saying that the suggestions to be gained from a good model will always be valuable, not only in the department for which the given article was intended, but, occasionally, in other departments possibly remote from it. No warning, on the other hand, is more eloquent than the spectacle of failure. The exhibition of the mistakes of others should certainly tend to prevent their repetition.

Finally, the settlement of questions of priority of invention is a matter of no small moment.

Aside from personal questions involved, the fact that an instrument of ancient invention has been lost to sight is often owing to the reason that it was not well adapted to the end which it was intended to serve. To revive such a model every few years under a new name is to confuse the mind of the profession and seriously to hamper progress. Instruments which to-day are bearing names contemporaneous with our own have been found among the ruins of Pompeii, and may readily be seen in the Museum of Naples.

For the furtherance of the various above-mentioned ends and of others which may reasonably occur to you, the collection proposed will be of great value. Other institutions having the proper facilities for so doing may establish museums of anatomy, biology, or pathology. With us such a course may not at present be open, either through favorable opportunity for collecting or through available exhibition space. There is plenty of room, however, for rare old books, for instruments of the right kind, and for interesting historical plates. If each one of us will do what he can as opportunity affords, that space may soon be most satisfactorily filled.

With myself this has been a long-cherished idea. In furtherance of it, I take pleasure in depositing the accompanying instruments, the beginning of a collection to which I hope from time to time to add, until it shall well represent the history of the early days of laryngology.

DRIED TETANUS ANTITOXIN AS A DRESSING FOR WOUNDS.

By J. J. KINYOUN, M.D., Ph.D.,

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Some observations on the use of tetanus antitoxin in a dried and powdered form as a dressing for wounds have been made which seem to justify its mention. It may be mentioned that Calmette[1] published a note giving his experiences with dried tetanus antitoxin in powdered form as an application to wounds infected with tetanus. I have confirmed his experiments, but have little or no success in preventing tetanus in the case of deep or penetrating wounds. In these, the preventive power of the powder is only slight, and in most cases its application is without effect.

It occurred to me that it would be good practice to apply this powdered antitoxin to the minor injuries, with a view of preventing tetanus, as many of the wounds were contaminated with dirt. Many such injuries have come under observation. These consist of abrasions, or incised, contused, and lacerated wounds, and also a number of suppurating wounds. None of these, however, was to be considered of a serious nature; but not a few, such as injuries to the hand, were sufficient to keep the patient from work. Instructions were given that all such wounds were to be treated in the usual manner with addition of the powder.

After quite a number of these injuries had been treated in this manner, it was quite evident that they healed more rapidly and with less disturbance than had been previously observed in those treated in the ordinary way. Since then a more careful supervision has been kept, and it has been demonstrated beyond question that the powdered serum was responsible for good results. A number of infected wounds also, due principally to vaccination and furunculosis, have been treated in like manner. The inflammation subsides, granulation occurs, and healing rapidly follows.

One observation has been made on an operation for hypertrophy of the mucous membrane of the nose. The first operation was done in the usual manner, and it required three weeks before the wound healed. A second operation became necessary. The nasal cavity was insufflated twice daily with the powdered tetanus antitoxin, and the wound healed within a week. Whether this will follow in other cases remains to be seen. It is, to say the least, quite suggestive. No injuries of major character have been observed, so it cannot be determined what effect the dried serum would have on these.

The results which have followed the application of dried serum to the wound show very conclusively that it possesses qualities other than its specific body, the antitoxin. This must be of the nature of an immune body, which, when brought in conjunction with the serum or cells in the wound, becomes bactericidal.

It may be that normal serum[2] possesses this quality and is not due to the serum of an immunized animal. It is believed, however, that, as a rule, we should expect to have better results from the serum of an immunized animal than the normal. My experience[3] with such sera demonstrates that immune horse serum, inactivated by heat, is more bactericidal than the normal serum.

In such immune serum there appears to be a body, an amboceptor, which is entirely separate and distinct from the specific immune body which is responsible for the germicidal action. This might be

termed, for want of a better name, the common immune body. It may be normally present in the blood, but it increases in amount under treatment, *pari passu* with the increase in the number of the leucocytes.

The dried serum powder seems to have some advantages over the serum, as it dissolves rather slowly and therefore is not so apt to be washed away by exudates.

It is intended to continue these observations, using other immune sera, for it may be that these may possess even better qualities than the dried antitoxin.

REFERENCES.

1. Calmette, A.: *Comptes Rendus de l'Académie de Science,* T. CXXXVI, 1903, pp. 1150-1152.

2. Dr. W. H. Park recently informed me that some time since a number of chronic ulcers which had resisted all other treatment were dressed with diphtheria antitoxin serum. In all there was a marked improvement. The same results have also been obtained with a dressing of normal horse serum.

3. The action of glycerin on bacteria in the presence of cell exudate; *Journal of Experimental Medicine,* 1905, Vol. VII, No. 6.

A CASE OF INTESTINAL OBSTRUCTION, IN A CHILD, DUE TO TUBERCULOUS PERITONITIS FOLLOWING BRONCHOPNEUMONIA.

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The patient, Catherine G., was born on May 5, 1905, the first child of a mother thirty-four years of age, being delivered by the writer after a normal labor lasting about twelve hours. The weight at birth was seven pounds fourteen ounces. The mother, being absolutely unable to nurse the infant on account of lack of milk, the latter was put upon modified cow's milk. The child thrived from the first, making regular and consistent gains in weight, and on July 24 weighed eleven pounds. About this time the digestion became slightly disordered, with the result of a loss in weight to ten and a half pounds on August 7. Upon August 11 a typical attack of summer diarrhea began and lasted for two weeks; the stools were fluid in consistency, green and foul, and contained mucus in moderate amount. The treatment consisted of an initial dose of castor oil, followed by intestinal irrigations with normal saline solution after each defecation. The strength of the food was greatly diminished, but the intestinal symptoms continued for two weeks, being accompanied by occasional vomiting. The food formula was changed from time to time, but nothing was found to agree, and finally the child was put upon a mixture containing one of the proprietary foods; from this time the patient began to improve, the digestive manifestations disappeared, and a gradual and steady increase in weight was noted.

The child continued to prosper until late in January, 1906, when it suffered from a slight attack of bronchitis, which responded quickly to treatment. On February 17 it was taken ill with fever, accompanied by cough. Physical examination showed the presence of moderate rickets as evidenced by slight epiphyseal enlargements and prominence of the abdomen; percussion of the chest showed no marked dullness, but upon auscultation numerous fine, moist râles, scattered through both lungs, were heard, and the diagnosis of bronchopneumonia was made. Mild counter irritation, by means of mustard pastes applied to the thorax, and steam inhalations were prescribed. For the fever, which was at no time very high, never exceeding 103° F., occasional small doses of tincture of aconite were given, and for the cough and restlessness small doses of antipyrin and sodium bromide were administered. The strength of the food was diminished. The patient continued to eat well and lost but little flesh; the signs in the chest persisted, and after two weeks potassium iodide was prescribed, in the hope that resolution would be hastened. Following this medication, the râles became gradually fewer, but did not wholly disappear. The cough and a moderate degree of fever continued, and the possibility of tuberculous involvement of the bronchial glands and lungs was considered. There was, however, no distinct interscapular dullness. Creosote, combined with a liquid food, was prescribed, and the patient was put upon full strength food, which it digested without difficulty. The temperature still continued, reaching an evening elevation of from 100.5° to 102° F.

The condition of the patient remained as described until March 18, when an attack of emesis occurred, the vomitus consisting of mucus and curds; following this manifestation the child passed a restless night, was disinclined to take food, and vomited at intervals. The bowels moved upon the morning of the 18th. Upon the 19th the emesis continued, and there was no defecation. Intestinal irrigation resulted in the passage of a small amount of fecal matter, but no blood or mucus. Abdominal examination was difficult on account of the crying of the child, but upon one occasion satisfactory palpation was accomplished. The abdomen was distended and tympanitic but no mass was made out, and there was no especial tenderness. The patient was seen at 4 A. M. on March 20. At this time the child was manifestly worse, the face was anxious, and whatever was taken by mouth was vomited shortly afterward. The intestine was irrigated, the result consisting of a very small amount of fecal matter; a small quantity of gas was also passed. The stomach was washed and relieved of a little greenish fluid of faintly fecal odor. Digital examination of the rectum showed no abnormal condition. At this time the temperature was 99.5° F. and the pulse was 150, regular, and of fair strength. At 10 A. M. the patient vomited matter of distinctly fecal odor. The probability of intestinal obstruction and the need of operation was suggested to the parents. A consultation was agreed upon, and Dr. Alfred S. Taylor was called, who made the diagnosis of intestinal obstruction of uncertain origin, and advised immediate operation. After gaining the parents' consent with considerable difficulty, the child was removed to the Presbyterian Hospital, where laparotomy was performed by Dr. Ellsworth Eliot, Jr.

For the following report of the patient's condition upon entrance to the hospital, and the result of the operation, the writer is indebted to Dr. E. St. John Ward of the interne staff of the Presbyterian Hospital.

Physical Examination—Small infant in state of marked prostration; throat, normal; heart and lungs, normal; abdomen, full, distended, tense and tympanitic, except in flanks, where there is shifting dullness; liver dullness is obscured; general tenderness, especially upon the right side; moderate general rigidity; peristalsis audible on left side; rectal examination, negative; extremities, normal; operation, exploratory laparotomy, by Dr. Eliot. Chloroform poorly taken; position dorsal, with arms across chest; incision, four inch median laparotomy, ex-

tending about one inch above umbilicus. *Findings.*—Small intestine distended with gas and fluid, congested and dark in color; considerable amount of clear, amber, serous fluid in peritoneal cavity; peritoneum covering the gut appears somewhat granular, and is dotted here and there with specks suggesting miliary tubercles; a considerable number of fairly distinct small miliary tubercles about the cecum, where adhesions are most abundant; a few thin adhesions in various situations along the small intestine, but these are most abundant in the right iliac fossa about the cecum. At this point also is felt a hard mass in the lumen of the gut, which is movable upon manipulation. The large intestine is empty and collapsed. The intestine was carefully inspected after withdrawal from the abdominal cavity, and all adhesions were divided, special attention being paid to those about the cecum, where the constriction seemed to be. The mass above mentioned was pushed on into the transverse colon. Following these procedures, the wound was closed.

During the operation the patient's condition was poor, stimulation being necessary. After operation the child rallied temporarily, but in spite of further stimulation death took place about two hours after removal from the operating room. Autopsy was refused.

A specimen of blood taken previous to the operation showed the following conditions: There was an increase in the number of blood plates; the red cells were markedly pale, and there was a slight poikilocytosis. The differential count of the leucocytes showed 57 per cent. of polynuclear cells; 13 per cent. of transitional forms, 0 per cent. of large mononuclear cells, 30 per cent. of lymphocytes. A culture taken from the peritoneal exudate at the time of operation showed no growth.

781 Park Avenue

DISINFECTION OF ROOMS BY FORMALDEHYDE. COMPARATIVE BACTERICIDAL VALUE OF VARIOUS METHODS.

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Since formaldehyde was first proposed as a gaseous disinfectant for rooms, the literature relating thereto has been multiplied and duplicated in large proportions. As the result of numerous investigations, we now know that formaldehyde gas, when placed under proper conditions and in sufficient quantity, is a powerful bactericidal agent. Such action, however, is limited to the surface of objects with which it comes in contact, its penetrating power being practically *nil*. From the inauguration of this method of gaseous disinfection up to the present time, many different forms of apparatus for producing and evolving formaldehyde gas have been devised and introduced into use. The writer has had abundant opportunity for experimental investigation with many of these forms of apparatus. The object of the work here presented was to ascertain from a bactericidal standpoint the comparative value of various methods of evolving the gas, so that from his own experience the author might be able to select therefrom, for his own use, that upon which the greatest confidence is to be placed.

Methods tested.—The original method of evolving formaldehyde gas by the incomplete oxidation of methyl alcohol over a white-hot platinum spiral has for many reasons fallen into disuse. Practically none of the apparatus now in use are constructed upon this principle. The various apparatus for producing formaldehyde gas now employed are based upon one or another of the four following principles: 1. Heating formalin (40 per cent. aqueous solution of formaldehyde gas) under pressure at a point above 100°C. 2. Heating formalin not under pressure at 100°C. 3. Heating paraform to a sufficient temperature for the evolution of the gas. 4. Mixing formalin with some other substance, and by chemical combination setting the gas free. As representative of these principles the following methods were tested in this work: 1. Trillat autoclave. 2. Heating formalin in an open vessel over a powerful flame. 3. Paraform tablets. 4. Potassium permanganate method, as proposed by Evans and Russell. 5. Lime method, as proposed by H. V. Walker.

Bacteriological technic employed.—As a test organism, the *Bacillus pyocyaneus* was used. Cotton threads one inch in length were moistened with a twenty-four-hour bouillon culture of this organism. These threads were air-dried for forty-eight hours. After drying, ten threads for each experiment were kept as controls, and the balance (known as "test threads") were exposed to the gas for the time indicated in the tables below. After this exposure, each control and test thread was placed in a tube of sterile Dunham's peptone solution and incubated at 37.5°C. for four days. At the expiration of this time a green color in the tube was regarded as signifying growth of the *Bacillus pyocyaneus*. In those tubes in which no green color was thus produced the *Bacillus pyocyaneus* was regarded as dead. The room used for exposure to the gas was of a capacity of 786 cubic feet. Before the exposure all openings around windows, doors, etc., were carefully plugged with raw cotton.

Conclusions.—The annexed tables show that by far the best comparative bactericidal results were obtained by the lime method. The writer would state, in closing, that the bacteriological technique used in this work was selected by him after extended experience with other methods as recommended by various observers as that by the use of which the smallest error is possible. Whether or not his opinion in this respect be correct has no effect upon the validity of these observations, since all the methods were subjected to precisely the same technique. The comparative value of the various methods, which was the author's intent, was therefore correctly obtained.

The results obtained are shown in the following tables:

TABLE I.

Method	Amount of formalin or paraform used	Air space of exposure room	Length of time required to evolve gas in exposure room	Time of exposure to gas from beginning of evolution	No. of controls	No. of tests	Per cent. death of controls	Per cent. death of tests
Autoclave	6 oz.	786 cu. ft	15 min	6 hrs	10	500	0%	42.4%
Open boiling of formalin	6 oz.	786 cu. ft.	20 min.	6 hrs	10	500	0%	59.2%
Paraform tablets.	1000 gr.	786 cu. ft	1½ hrs.	6 hrs	10	500	0%	21.6%
Potassium permanganate method	6 oz.	786 cu. ft.	2 min.	6 hrs	10	500	0%	62.8%
Lime method	6 oz.	786 cu. ft.	3 min.	6 hrs.	10	500	0%	91.4%

TABLE II.

Autoclave	6 oz.	786 cu. ft	15 min	4 hrs.	10	500	0%	31.2%
Open boiling of formalin	6 oz.	786 cu. ft	20 min	4 hrs	10	500	0%	41.2%
Paraform tablets	1000 gr.	786 cu. ft.	1½ hrs	4 hrs	10	500	0%	16.2%
Potassium permanganate method	6 oz.	786 cu. ft	2 min.	4 hrs	10	500	0%	54.6%
Lime method	6 oz.	786 cu. ft	3 min.	4 hrs	10	500	0%	86.2%

62 Schermerhorn Street.

A CASE OF PERFORATIVE APPENDICITIS CAUSED BY A FOREIGN BODY.

By FRANK H. JACKSON, M.D.,

HOULTON, MAINE.

The following case, while presenting nothing new in way of diagnosis or treatment, has a somewhat uncommon etiology, which fact seems to warrant its report.

DaCosta, in his handbook on surgery, says that although cases of appendicitis from the entrance of foreign bodies into the lumen of the tube do occur, with the exception of the so-called enteroliths, they are rare. Pick speaks of orange seeds, berry stones, etc., but remarks on the infrequency of such cause. Bryant says that "89 per cent. contained fecal or other foreign material." What the "other" was he neglects to state. Osler says that "foreign bodies are by no means frequently met with and," quoting Fitz, records 12 per cent. in 150 cases. In the routine work of postmortems in Montreal he found two cases of foreign bodies in ten years. Cases are on record in which the common pin has been found. Holt gives one case of his own and reports two more. Tiffany in the Reference Handbook of the Medical Sciences, says that "the presence of a foreign body is rare" excepting fecal concretions. The similarity between a fecal concretion and a date stone is often a cause of error.

J. B., aged 23; single; sawmill operative. Uses alcohol to some excess. Never has had any serious illness that he can remember. Has always worked hard since a boy. About a year and a half ago had what he called a severe attack of "indigestion." His bowels were constipated at the time and he took cathartics to obtain relief. He described the pain as starting in the pit of his stomach and then going over to his right side. Following the first attack he has had more or less pain in his right side, and says that if his bowels are constipated the pain is very much worse. During the past eighteen months he has had several attacks of this pain, which has forced him to quit work at the time, but that he never has consulted a physician.

The present illness began June 12, although he had not been feeling well for some few days. He was suddenly seized with a terrific pain in the stomach that caused him to fall on the ground. The pain was described as knifelike and caused him to cry out with the agony. He thought the pain was another attack of indigestion, as his bowels had been constipated for some few days. He reached his boarding-house with some difficulty and applied hot cloths moistened with turpentine to the abdomen. The pain, which was at first in the pit of the stomach, now was in the right side, and was seemingly getting worse. As the patient was in a place that was unsuitable for medical care, he crawled out of bed and came to Houlton on the train, a distance of some thirty miles. The pain on the journey was most severe and he was intensely nauseated, but did not vomit. I saw him about 4 P.M., and found the following: Patient was of good build and fairly well nourished. His face was pale and covered with a cold, clammy sweat. Temperature (mouth) 99.5°, respiration 22 and thoracic, pulse 120, wiry and intermittent. Tongue was coated and his breath foul. The abdomen was distended and the patient lay with thigh flexed, as by that posture he could lessen the pain. Percussion gave a general note of tympany. There were loud, gurgling râles in the right iliac fossa. The lower quadrant on the right side of the abdomen was absolutely rigid and was painful. The maximum point of the pain was a little below and to the inner side of McBurney's point. Pain was not referred to the testicle.

A diagnosis of an exacerbation of a chronic adhesive appendicitis was made and operation advised. This was performed June 13. On opening the peritoneum a large amount of bloody serum poured out that rendered inspection difficult for some few minutes, despite the use of gauze to absorb the same. The omentum was highly congested and was adherent to the cecum and completely enveloped the appendix. On separating the adhesions I felt something catch on my glove. Inspection disclosed a pointed article projecting through the omentum. I tore through the omentum and the foreign body could be seen as it pierced the gut wall at the junction of the cecum and appendix. The omentum was separated from the gut and the appendix tied off and removed. Traction on the foreign body with a hemostat allowed its removal. The stump of the appendix was inverted and a double Lembert stitch taken that included the perforation. The post-operative history is of no import, and, barring a minute stitch abscess, recovery was ideal. The patient went home on the eleventh day and was seen on August 30, and said he was in perfect health. His bowels since the operation have been regular. The appendix was thickened, and there was an old stricture about half way between the tip and the base. Its cavity was filled with a dark bloody material about the consistency of tar. The foreign body was a fish bone an inch and a quarter long and its thickest diameter was the size of an ordinary knitting needle.

The Preventive Treatment of Senile Cataract.—Oscar Wilkinson does not believe in allowing a patient with beginning cataract to go untreated until blindness is fully developed. He has studied these cases very closely and concludes that cataract is a result of a disease of the eye, or some constitutional disorder, and deserves to be treated the same as any other disease. He does not look upon the cataractous lens as an excessive change due to age. Cataractous changes are "chemical, not morphological." Treatment of cataract should be both constitutional and local. The former treatment should consist in caring for any condition that is found to be interfering with the patient's general health. Every organ in the system that may possibly be diseased should be investigated. Gouty, rheumatic, or lithemic conditions should all receive proper treatment. The writer has found the digestive apparatus to be one of the most frequent sources of poison to the general system. After the general practitioner has corrected any special disease, the writer prescribes alteratives, tonics, and a free quantity of alkaline water, especially lithia water. The general tonics indicated are iron, quinine, strychnine, and gentian. The condition of each patient will indicate which of these tonics is demanded. Exercise in the open air is essential. Associated ocular diseases also require attention. The errors of refraction and accommodation must be corrected. The writer believes that the wearing of a proper lens does more than any other remedy for low-grade inflammations of the uveal tract. Such patients should use their eyes sparingly, for the cataractous eye is a diseased eye and it needs rest. The writer believes that the preventive phase of cataract treatment has not yet come in for its share of attention from competent men.—*Gaillard's Southern Medicine.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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FRUIT AS A FOOD.

OF late years much has been written concerning vegetarianism. Not only has the literature on vegetarianism been extensive, but many have adopted its principles and have lived on a diet from which meat has been excluded. In Great Britain this practice has had and still has a great vogue, so much so that vegetarian restaurants flourish in many cities, and especially in London. Some physicians, too, in England advocate the exclusive use of a diet devoid of meat, arguing that it is healthier than the ordinary diet to which civilized individuals have been accustomed for many centuries; and they point out that the Roman soldiers subsisted chiefly on food composed mainly of fruits and that the Japanese of the present day are more or less vegetarians. In a pamphlet reprinted from the Year Book of the Department of Agriculture for 1905, Dr. C. F. Langworthy of the Office of Experiment Stations deals with fruit and its uses as food in a comprehensive and interesting fashion. The composition of various fruits is discussed, and a table is given in which will be found the average composition of fruits and fruit products. These data show that fresh fruits are in general dilute foods—that is, the proportion of water which they contain is large compared with the total amount of nutritive material. In the majority of fruits and fruit products the carbohydrates are the food constituents most abundantly represented. The proportion of nitrogen-free extract varies greatly, being lowest in the fresh and highest in the dried and preserved fruits. The principal sugars in fruit are cane sugar, grape sugar (glucose), and fruit sugar (levulose), the last two, designated invert sugar or reducing sugar, being usually present together in equal quality. The acid in fruits varies within rather wide limits, 1 to 2 per cent. being reported on an average in such fruits as apples, pears, plums, strawberries, etc., and as high as 7 per cent. or more in lemon juice.

Extended investigations were undertaken at the California Experiment Station by Prof. M. E. Jaffa, the work as a whole being carried on in cooperation with the nutrition investigations of the office of experiment stations. Studies were made with persons who had subsisted on a fruit diet for many years and with persons who were accustomed to a vegetarian and to an ordinary diet. These individuals were of different sexes and ages. The results obtained from the first series of studies which were made on women and children showed a range, calculated on the basis of amounts eaten per individual per day, of 47 to 80 gm. of protein, and 1,850 to 2,805 calories of energy, the cost of the daily food ranging from 21 to 55 cents per individual per day. In the next series of studies young and old men were the subjects of the experiments, and it was found that the protein supplied by the daily diet ranged from 40 to 85 gm. and the energy from 1,712 to 3,305 calories, the average being 62 gm. and 2,493 calories, the cost ranging from 18 to 47 cents per person per day. These studies covered from twenty to twenty-eight days, and the daily food consisted of different combinations of fruits and nuts, of which the following day's ration may serve as a sample: 475 gm. apples, 110 gm. bananas, 850 gm. oranges, 5 gm. dates, 2 gm. honey, 10 gm. olive oil, 55 gm. almonds, 70 gm. pine nuts, and 50 gm. walnuts. The result of these investigations was to show that, while they were too limited to warrant the foundation of any very definite conclusions, the statement might be confidently made that fruit and nuts should not be looked upon simply as food accessories, but should be considered a fairly economical source of nutritive material.

Experiments were also conducted by Professor Jaffa to determine the digestibility of fruit, and although sufficient data have not been gathered to justify dogmatic statements in regard to this point, enough, he says, has been done to show that they are thoroughly digested and have a higher nutritive value than is popularly attributed to them. With respect to the relative digestibility of different fruits, evidence is too scanty to make any exact statements, but apparently stomach digestion is influenced by the nature of the fruit and its stage of ripeness. Beaumont states that mellow sour apples require two hours for digestion in the stomach, and mellow sweet apples ninety minutes. Another observer has noted that about five ounces of raw ripe apple requires three hours and ten minutes for digestion in the stomach, but states that if the fruit is unripe, and consequently contains a high proportion of cellulose, a much longer time may be required. Apples are viewed, from an economical and nutritive standpoint, as the best of all fresh fruits, especially when eaten uncooked, while of dried fruits dates and raisins rank the highest.

The conclusions reached as a result of the studies were that, in general it may be said that fruits are wholesome, palatable, and attractive additions to our diet, and may be readily made to furnish a considerable part of the nutrients and energy required in the daily fare. Fresh fruits are dilute foods and closely resemble green vegetables in total nutritive value, but dried fruits and many preserves are much more concentrated, comparing favorably with some of the cereals and other dry vegetable foods in the amount of total nutrients and energy which they supply per pound. Characteristic chemical constituents of fruits are carbohydrates, and so they are naturally and properly used in a well-balanced diet to supplement foods richer in protein, such, for example, as cereal grains, legumes, nuts, eggs, dairy products, meats, and fish. Intelligently used, fruits constitute a most valuable part of a well-balanced diet and may profitably be eaten in even larger quantities than they are at present by the majority of mankind.

THE TREATMENT OF TETANUS.

In the *Annals of Surgery* for September are two articles on the treatment of tetanus. The first of these deals with the therapeutic value of the antitoxin treatment of tetanus and is written by Dr. Nathan Jacobson of Syracuse, N. Y., and Dr. Herbert D. Pease, Director of the Antitoxin Laboratory, New York State Department of Health. It is pointed out that the bacillus of tetanus can develop but little, if at all, below 60° F., which, it may be assumed, accounts for the fact that the organism is more active during the summer months. Another important point referred to by the authors is that the bacillus is a frequent habitant of the intestinal tract of animals, especially of horses and cattle, and consequently all wounds received in stables or contaminated with animal discharges are particularly to be feared. Again, tetanus can readily follow unclean surgical procedure, and therefore a sufferer from tetanus should be completely isolated from all other surgical patients.

After describing at some length the conditions of infection, the distribution of the tetanus bacillus in the body, the period of incubation, and the relation of the toxin to the nervous system, the authors proceed to discuss treatment by tetanus antitoxin generally. Stress is laid upon the fact that antitoxin, to be of the greatest service, must be administered before the motor nerves have absorbed any toxin. Therefore the serum should be administered as soon after the infliction of the injury as possible and should be given to every person who has sustained an injury in which dirt, manure, or other foreign substances could possibly have been carried into the wound. Injuries involving the nerve-trunks should be treated with antitoxin locally as well as subcutaneously, in order to prevent the direct absorption of toxin by such injured nerves. For this purpose either liquid or dried antitoxin is suitable. As to the special methods of injection, the intracerebral method has nothing particularly to recommend it, in the opinion of the authors, nor is it free from danger. The injection of antitoxin into the subdural space finds little favor, while it is pointed out that the attempt to neutralize the toxin present in the large nerve trunks by the injection of antitoxin into them probably only prevents the absorption for the time being, and it is even doubtful whether it is possible to neutralize any considerable portion of the toxin in a given nerve by intraneural injections.

The conclusions come to by Drs. Jacobson and Pease are that, as a prophylactic measure, the injection of antitoxin merits our fullest confidence, but as regards the treatment of tetanus after the disease is fully established, we are forced to admit that as yet no method has been discovered whereby it can be administered so as to reach effectively the toxin not free in the blood or lymph. In the author's review of cases of tetanus treated by antitoxin it appears that subcutaneous injection was the method most generally used and that the mortality of the patients who were thus treated was less than that resulting from other methods.

The second article relating to the treatment of tetanus is by Dr. Joseph A. Blake of New York, and treats of the therapeutic virtues of magnesium sulphate. The use of magnesium sulphate as a therapeutic agent in tetanus was suggested by the discovery by Dr. S. J. Meltzer of the marked action of this salt, when applied to nerve-tissues, in inhibiting both afferent and efferent impulses. As noted in the Medical Record of December 16, 1905, Meltzer found that one cubic centimeter of a 25 per cent. solution of magnesium sulphate to every twenty-five pounds body weight was sufficient, when injected into the spinal canal, to produce surgical anesthesia. Absorption from the spinal canal, however, is fairly slow, and definite action upon the nerve-trunks may be obtained, while the general effects upon the higher centers may not manifest themselves for several hours or may be wholly absent. In the case of lumbar injections into the subdural space, magnesium sulphate acts directly upon the nerve-trunks at the site of injection, and as it diffuses itself upward along the cord its paralyzing effect extends to the trunk and upper extremities, diminishing, however, in intensity as it progresses. Age and sex appear to have a direct bearing upon its action, and Dr. Blake thinks that, so far as is known, children are the most susceptible, and women more so than men.

Up to the present time but four cases of tetanus have been treated by this method, so that it is far too early to dogmatize as to the effect of magnesium sulphate on the course of tetanus. Dr. Blake's impression of the drug is that, although we cannot be certain of its effect, yet it is reasonably safe and offers us a means of modifying the convulsions and of relieving pain more satisfactorily than any other drug. Moreover, it produces anesthesia, which may be taken advantage of for intraneural or other injections of tetanus antitoxin and for local treatment of the site of the infection.

JEJUNOSTOMY FOR THE HYPEREMESIS OF PREGNANCY.

Hyperemesis of pregnancy is a condition for which an untold number of remedies have been suggested, the most effective of which seem to be those which are directed to the eliminative channels of the body, for undoubtedly the largest proportion of cases are due to autointoxication. But there are instances in which the cause for the disturbance is not a toxemia proper, and a nervous element is probably at fault, which, for want of a better name, has been called a gastrointestinal hysteria. In addition to these there is another class of cases in which some disease of the stomach is present, and the vomiting which is caused by the latter is greatly aggravated by the advent of the pregnancy. An instance of this kind is reported by Brunon and Jeanne (*Bulletin médical*, No. 55, 1906), in which the patient for the period of a year had been subject to attacks of repeated and rebellious vomiting, which became greatly aggravated by an unrecognized pregnancy. On account of the progressively increasing emaciation a jejunostomy was suggested and carried out, with an immediately favorable result. This continued for a period of six weeks, during which the pregnancy was diagnosed, and then the patient withdrew from observation. Apparently uncared for, the vomiting returned, and then the uterus was emptied, but the

patient died from exhaustion shortly after. The favorable result which attended jejunostomy in this instance is, of course, insufficient to recommend the operation as a routine in such cases; but the fact that the symptoms completely disappeared after it was done is noteworthy, and the procedure may be carried out with comparatively little shock to the patient, if necessary, under local anesthesia.

Although the performance of jejunostomy is a very radical suggestion, the fact must be borne in mind that the induction of abortion is, in advanced hyperemesis, an operation which only too often results fatally for the mother, while, as already noted, a jejunal fistula may be produced with comparatively little shock. As the vomiting usually stops spontaneously at or before the sixth month, the patient may thus be tided over by this means, and the sacrifice of the child's life not rendered necessary.

Arterial Disease after Adrenalin Injections.

It has been found that the intravenous injection of adrenalin in rabbits may be followed by extensive change in the aorta and the larger vessels. This has been determined to consist of a localized destruction of the smooth muscle fibers of the media, accompanied by a rapid calcification and other characteristic alterations in the elastic-tissue elements. This results in a narrowing of the lumen of the vessel and a diminution in its elasticity which is subsequently followed by a compensatory new growth of elastic fibers and of muscle and endothelial cells in the intima. Finally there is produced as the net result of these changes a series of aneurysm-like bulgings of the vessel wall. The adventitia and the vasa vasorum do not seem to be involved in the process at any time. Erb, who presents a very interesting communication on this subject in the *Archiv für experimentalle Pathologie und Pharmakognosie,* Vol. 53, 1906, claims that these findings show there is no actual similarity between this condition and the arterial sclerosis which is found in the human subject. There is no sclerosis in the sense of a thickening due to proliferation of the intima nor an atheromatous process. But there is apparently an analogy between the condition described in the rabbit after intravenous adrenalin injection and the calcification of the media as found in the large arteries of the extremities in man. Erb believes that this vascular disturbance is not due to an increase in blood pressure or to nutritive changes brought about by spasm of the vasa vasorum, but is due rather to a direct toxic effect of the adrenalin on the smooth muscle cells of the vessel wall.

Oatmeal Diet in Diabetes.

A few years ago von Noorden made the suggestion that oatmeal in large quantities be given to patients suffering from severe diabetes, and claimed that by this means the glycosuria and acidosis were favorably influenced. The oatmeal was cooked with butter and water, and then an egg albumin preparation was added, so that the patient received about 3,000 calories and a sufficient amount of albumin to satisfy the albuminoid demands of the body. Lipetz (*Zeitschrift für klinische Medizin,* Vol. 56) has made some further tests of the method, giving oatmeal to a patient who was free from any glycosuric symptoms. An examination of the feces disclosed a large increase in the number of the bacteria, pointing to greater intestinal fermentation. In another case, a severe one of diabetes, the diet was absolutely without effect—on the contrary the sugar excretion and the acidosis were increased. In a less advanced case the sugar was increased, but the acidosis diminished. Other cases were subjected to the same régime, but without attaining the good results claimed by von Noorden. In explanation of this fact Lipetz suggests that the favorable effects obtained by the originator of the diet scheme in question were due to the nonabsorption of the ingested carbohydrates, although the latter had been taken in such large amounts. This is simply another instance in which the contentions of one man, here seemingly rather extravagant, fail to be substantiated by another under apparently similar conditions.

Strabismus and Epilepsy.

We have learned in the last few years a great deal about the influence of visual disturbances on the production of functional diseases, until there are but very few left which fail to come under this category in some form or other. Prof. Schoen of Leipzig (*Wiener klinischtherapeutische Wochenschrift,* September 9, 1906) is convinced that there is also a direct connection between vertical squint and epilepsy, and claims to have found this defect in a large percentage of the inmates of a German institution for epileptics. In addition to the epilepsy there were other symptoms, such as migraine, vertigo, nausea, gastric and cardiac complaints, neurasthenia, and hysteria, which are often associated with eye disturbances. Epileptic convulsions are known to be due to cerebral irritation, and Schoen claims that in uncomplicated cases the irritation is due to eyestrain, usually that due to vertical strabismus of congenital origin. The constant effort on the part of the child to bring the visual axes into the same plane results in a condition of tension which in the course of time brings about nervous disturbances of an intermittent explosive character and permanent changes in the brain. Schoen believes that proper glasses will in such cases bring about a total cure, but they must be applied early, as soon as the true condition is determined, and must be worn constantly.

News of the Week.

Southern Medical Association Organized.—After an existence of eighteen years, the Tri-State Medical Association of Tennessee, Alabama, and Georgia, at its last meeting, held at Chattanooga on October 5, relinquished its charter, and was replaced by the Southern Medical Association. The new organization comprises Mississippi, Tennessee, Georgia, Alabama, Florida, and Louisiana, and it is expected that the Carolinas and Kentucky will ultimately be included. The newly elected officers are: *President,* Dr. H. H. Martin of Savannah, Ga.; *First Vice-President,* Dr. Mack Rogers of Birmingham, Ala.; *Second Vice-President,* Dr. J. B. Cowan of Tullahoma, Tenn.; *Third Vice-President,* Dr. J. R. Tackert of Meridian, Miss.; *Secretary,* Dr. Raymond Wallace of Chattanooga; *Treasurer,* Dr. Y. L. Abernathy of Chattanooga.

Yellow Fever in Cuba.—Three new cases of yellow fever have been reported from Havana, and several others have appeared at Cienfuegos and Guines. Vigorous measures have been taken to prevent the men of the Marine Corps from becom-

ing infected. Ten barrels of oil of citronella have been sent to Cuba, and every marine on guard duty will be supplied with a bottle of this oil to be used in protecting himself against mosquitos. All the marines in Cuba are supplied with mosquito netting for their beds, and head nettings are also available for their use. Water filters have also been sent to Cuba, and the officers in the island have been urged to caution the marines against the use of unfiltered water.

International Cancer Conference.—At the International Cancer Conference held at Heidelberg and Frankfort-on-the-Main during the first days of the month, the most notable feature was the formal opening of the new Cancer Institute at Heidelberg, of which Professor Vincent Czerny is the director. After holding the chair of surgery in the University of Heidelberg for many years, Czerny, on October 1, resigned his post in order to carry out his long-projected plan of devoting the remainder of his life to the study of cancer. The institute has been planned in all its details by Czerny, who also contributed largely to the fund necessary for its erection and equipment. It comprises a complete hospital organization, together with elaborate laboratory facilities for the most advanced research work.

Hydrophobia in Germany.—In the year 1905 368 cases of injury through rabid or suspectedly rabid animals were officially reported in Prussia. Of the patients 71.2 per cent. were males and 28.8 per cent. were females. The injuries were for the most part caused by dogs, though seven were inflicted by cats, four by cattle, and two by horses. In five cases there was no bite, infection occurring in the course of tending the rabid animal, and in one instance at the autopsy on such an animal. Of the 368 patients, 323, or 87.8 per cent., were treated at the Pasteur Institute in Berlin; of the forty-five others twenty-two were treated at home and twenty-three received no treatment whatever. Eleven deaths occurred, three of the patients having received Pasteur injections, and the others having been treated at home or left untreated. That is, the 323 inoculated patients exhibited a mortality of less than 1 per cent., while of the forty-five others 17.8 per cent. died.

Increase of Immigration.—During the six months ending September 30, 682,560 immigrants were admitted to this country, as compared with 595,484 in the same period of last year, and 458,683 in 1904. The figures for this year indicate an increase of 49 per cent. over the immigration in 1904. In the six months named, 9,236 persons were debarred. Of the total immigration in that period 157,240 persons came from Russia. During the month of September 95,341 immigrants were admitted and 1,052 deported.

Professor **Ernest Wertheim** (Professor of Gynecology in the University of Vienna) recently spent a week in Chicago as the guest of the Chicago Gynecological Society. He gave clinics at the Post-Graduate Medical School and Hospital, and the Presbyterian Hospital. He was entertained by Dr. Gustav Kolischer at a dinner given at the Chicago Beach Hotel, and by Dr. Franklin H. Martin at a luncheon at the Union League Club. A banquet was given in his honor, October 10, by the Chicago Gynecological Society, at the close of which he read a paper before a joint meeting of the Chicago Medical and Chicago Gynecological Societies, entitled "Radical Abdominal Operation in Carcinoma of the Cervix Uteri."

Dr. Alfred Schalek of Chicago has been appointed Professor of Dermatology and Genitourinary Diseases in the Medical College of the University of Nebraska, Omaha, and has moved to that city.

Malaria in Greece.—The excessive prevalence of malaria in Greece is said to be checking the development of the country to a serious degree. Out of a population of 2,500,000 there have been 250,000 cases of malaria annually, with about 1,760 deaths. Last year the number of cases increased to 960,000, and the deaths to 5,916. Prof. Savas, of the University of Athens, and physician to King George, is initiating a movement to deal with the plague, and has recently been to Liverpool to consult with Dr. Ronald Ross of the School of Tropical Medicine regarding the best means of mosquito extermination.

Contract Work in the Oranges.—The physicians of the Oranges have united in an effort to abolish contract practice, and at a recent meeting of the Practitioners' Society of the Oranges the members agreed not to enter into obligations of this sort.

Resolutions Against Newspaper Doctors.—At a meeting held September 25 the Decatur (Ill.) Medical Society decided that the names of members should not be mentioned in connection with medical matters in the daily press, and that, if such notice should appear, the physician in question would be requested to explain at the next meeting of the Society.

Society to Abate the Smoke Nuisances.—According to the *American Machinist* about forty city smoke inspectors held a convention in Detroit recently for the purpose of forming a National Association of Smoke Inspectors.

Insane Journalism.—A dispatch from Vienna announces that the inmates of the new insane asylum at Maueroeling, one of the largest in the world, have started a newspaper. The first number declares that it is published "by the mad for the mad," but the contents are said to be surprisingly like those of most papers.

Accidental Death at 117 Years.—The death is reported from Frankfort, Ky., of a colored woman named Anne Jane Mitchell, who was fatally burned at the age of 117 years on October 11. Her husband, who died recently, is stated to have been a centenarian.

The Yield of Radium.—It is stated that the radium mines at Joachimstal, in Austria, recently supplied the Vienna Academy of Science with ten tons of uranium ore, and this has yielded a very large amount of radium, which is to be used for research. The mines are being converted into a radium cure resort. A local laboratory for producing radium salts has been established, and the springs are serving as medicinal baths.

Presidio Hospital Burned.—The large two-story military hospital at the Presidio, Monterey, Cal., was burned on October 14, and damage amounting to $50,000 was caused. The fire was started by the explosion of a tank of gasoline at the rear of the building. The patients were all removed in safety.

County Hospital for San Jose.—The supervisors of Santa Clara County, Cal., have approved the plans for a new county hospital to be built at San Jose at an expense of $50,000.

Long Island Throat Hospital and Ear Infirmary.—At the seventeenth annual meeting of this

organization, recently held, Dr. C. T. Schondelmeier was elected president for the ensuing year. The report of the surgeon-in-chief, Dr. D. Morris Woolley, showed that there were treated during the last year 496 new cases, with 1,800 revisits, making a total of 2,296 cases treated. There were given 1,080 free prescriptions, and 337 operations were performed upon the nose, throat, eye, and ear.

Suffolk County (N. Y.) Medical Society.—The annual meeting of this society will be held at Riverhead, October 25, 1906. Officers will be elected under the new by-laws. The president is Dr. W. H. Ross of Brentwood, and the secretary is Dr. Frank Overton of Patchogue.

Council Bluffs (Neb.) Medical Society.—At the annual meeting of this society the following officers were elected: *President,* Dr. Daniel Jackson; *Vice-President,* Dr. R. B. Tuffs; *Secretary,* Dr. J. H. Cleaver; *Treasurer,* Dr. F. W. Dean.

Obituary Notes.—Dr. Randall Croft Stoney of San Francisco was instantly killed by being crushed in a car accident in that city on October 1. Dr. Stoney was a man of more than ordinary ability, and had attained unusual prominence for a man of his age. He was just thirty-one years old, and but recently married. He was born in Charleston, S. C., studied there and in New York, graduating from the Medical College of North Carolina in 1897, and served in the Spanish war. He was a member of the California State and San Francisco County medical societies, and assistant in gynecology at the Oakland College of Physicians and Surgeons.

Dr. Henry A. Laurent of this city died on October 12 of nephritis, at the age of forty-three years. He was born in Alsace-Loraine and was educated at Heidelberg. He came to this country when he was twenty-three years old, and obtained his degree in medicine at the University of New York.

Dr. Guido Katzenmayer of this city died on October 13 after an illness of several weeks' duration. He was born in Germany in 1832, and was educated at Heidelberg and Würzburg. He came to New York in 1853, and practised medicine here until his death, except from 1865 to 1878, during which time he was abroad.

Dr. Robert Schmeltzer of Brooklyn died on October 11 at the age of fifty-five years. He was well known as an oculist, and was prominent in German social life.

Dr. John W. Dryer of Milwaukee, Wis., died on October 5 in Reedsburg, at the age of forty years. He was graduated from the Milwaukee Medical College in 1901, but for the past two years had been unable to practise, owing to illness.

Dr. Morse Stewart of Detroit died on October 9, at the age of eighty-eight years. He was born in Penn Yann, N. Y., and received his education at Hamilton College and at Geneva Medical College, from which he was graduated in 1840. He came to practise in Detroit shortly afterward, when the city had little more than 10,000 inhabitants.

Dr. Anthony J. Weitenberner of Detroit died on October 8 of typhoid fever after a three weeks' illness. He had practised in the north end for about eight years.

Dr. G. S. Armstrong of Spokane, Wash., died on October 2, at the age of forty-eight years, after an illness of several months' duration. He had resided in Spokane six years, coming there from Northport, Wash. Previously he had practised in Olympia. He was a member of the State Board of Health, and was an active member of the Washington State Medical Association.

Dr. T. J. Scott of Alvin, Tex., met with death by accidental drowning in Galveston Harbor on October 1. Dr. Scott was sixty-eight years of age, and had practised in Alvin for many years.

Dr. James Stewart of Montreal died on October 6, as the result of an apoplectic stroke. Dr. Stewart was born in 1846, and, after receiving his medical degree from McGill University at the early age of twenty-two years, spent several years in study abroad. He was admitted a licentiate of the Royal College of Physicians and Surgeons in 1883. He had practised many years in Montreal, and was recognized as an authority on nervous diseases. Up to 1891 he was professor of materia medica and therapeutics at McGill, and in that year succeeded Dean Ross in the chair of clinical medicine. In 1903 he was elected president of the Association of American Physicians.

Correspondence.

DIGESTION OF STARCH BY INFANTS.

To the Editor of the Medical Record:

Sir: In a friendly spirit, and anticipating that errors in my own logic may be pointed out, I venture to offer some criticism of an article by Dr. J. H. Lopez, on "Examination of the Feces of Twenty-five Starch-fed Infants," in your issue of September 29.

According to the author, we have the following results: Class A, fed on wheat gruel, containing 1.5 per cent. of starch, feces, 0.1 per cent. Class B, fed on arrowroot, containing 2.5 per cent. of starch, feces, 5.1 per cent. Class C, fed on wheat and barley, containing 2 per cent. of starch, feces 2.7 per cent. Aside from purely analytical difficulties, which render it impossible to draw conclusions as to the digestion, unless considerable differences exist between the income and outgo, the destruction of starch by bacteria must be discounted. Again, any such comparison should state the actual quantities of gruel administered and feces passed. Excepting the first class, the food has evidently suffered a relatively greater abstraction of water than of starch, and in Class B, if the feces were half the volume of the food, there would be no absorption of starch; if a quarter the volume of the food, there would be a waste of 50 per cent. of the starch, and so on, without regard to destruction by bacteria. Another very important point is that the investigations were apparently being carried on in a series of starving babies, who should have extracted almost every particle of nutriment. Babies from two to six months old normally consume from 900 to 1,150 c.c. of milk daily, corresponding approximately to from 35 to 45 grams each of proteid, fat, and carbohydrate. The author does not state how much the babies received, but it is scarcely conceivable that the bulk of gruel exceeded 2,000 c.c. daily. If this amount was exceeded, the gain in nutriment would be more than counterbalanced by the mechanical disadvantage. On the hypothesis that 2,000 c.c. of gruel was given daily, Class A received 30 grams of carbohydrate, about 9 grams of proteid, and practically no fat; Class B, 50 grams of carbohydrate and practically nothing else, and, for Class C, not enough data are at hand, although the ratio would probably be about the same as for A. The article seems to imply that the "gruels" were water gruels. At least, arrowroot gruel is commonly made without milk, and for Class C, wheat and barley water are specified. If milk or other ingredients of organic nutritive value were incorporated in the gruels, the ratio would, of course, more nearly approach the normal. Still, even if 50 per cent. of milk were used and the daily normal bulk were doubled, as has been estimated, we should have merely an increase of carbohydrate in Class B and of carbohydrate and, to a less degree, of proteid in Class A. Now, if water gruels were used, representing a very inadequate total amount of nutriment, the fact that anything more than a trace of starch remained in the feces confirms the old idea that young infants cannot efficiently digest starch. According to time-honored teaching, the sixth month is taken to represent the approximate dividing line between inefficient and efficient starch digestion. Thus, the inclusion of one or two infants of about this age, in each series, would vitiate the premises, so far as conclusions bearing upon this point are concerned.

It may very well be that the author is quite justified in drawing the conclusion that he does, regarding the efficiency of starch digestion in infants, but he has not presented his evidence to warrant his conclusion. I would, therefore,

suggest that he state, for each infant, the age, bulk of ingesta, content of ingesta in starch or other carbohydrate, proteid, and fat—average analysis tables for the various foodstuffs used would be sufficiently exact—bulk of feces, and actual amount of starch or sugar found in the feces.

A. L. Benedict, M.D.
Buffalo.

TRACHOMA IN SCHOOL CHILDREN.

To the Editor of the Medical Record:

Sir:—During the school session quite a number of trachoma cases attend the various eye clinics for treatment, and since the method of school inspection by the Health Department has been in vogue the disease can be seen early and in all its stages. Trachoma, when seen early, is amenable to treatment, but it takes time. In the clinic I have seen very severe cases in which operation has been refused result in cure under blue stone. The worst cases are met with in those children who have not as yet attended school. These cases are neglected, the parents often attributing the trouble to a cold. The inevitable result of this neglect is seen in corneal ulcers, opacities, and keratitis, with defective vision later on. It is interesting to note that trachoma is rare in mountainous regions, and that negroes are less affected (a fact I have noticed at the clinic). There is a good deal of controversy as to whether trachoma is contagious from the beginning, some holding that it is not contagious until a discharge appears. Personally, I have seen four or five members of a family affected when there was no discharge and few granulations were present.

There are two forms of the disease, acute and chronic. The former is rare; it is accompanied with a mucopurulent discharge which absorbs the granulations and thus cures itself. The chronic form is more common. By some the disease is believed to be due to a microorganism (the trachoma coccus). It is common to see children with severe cases of trachoma in whom no other complications are present, the cornea is clear, and also the conjunctiva; why that is I cannot state. As a result of the new tenement laws in this city and the education of the parents through the school children, trachoma is diminishing, and although the disease may never be stamped out, yet I believe that statistics will show in the future a marked decrease throughout the city, especially among school children.

Abraham A. Goltman, M.D.
1409 Prospect Avenue, New York.

SOME OF THE USES OF CARBOLIC ACID.

To the Editor of the Medical Record:

Sir:—Having had, for the past eight years, some very satisfactory and unusual results from the use of carbolic acid, I send the following, feeling that the treatment ought to have a wider opportunity than can be given in a country practice.

I have used carbolic acid (liquified crystals) in fourteen consecutive cases of diphtheria. The acid is applied by saturating a piece of absorbent cotten (so it will not drip), fixed to a cotton holder, and smearing the tonsils till the surface turns white. This operation is to be repeated every day—sometimes, lightly, both morning and night. In four or five days the cure is complete. Every case of diphtheria I have ever had has terminated in recovery under this treatment. I have used the same treatment in tonsillitis, in a great many cases with perfect results, sometimes aborting the disease with one application. Enlarged tonsils and uvula (chronic inflammation) can be cured in the same way. I have also removed adenoids in the same manner.

Papules, furuncles, and carbuncles can be aborted if touched before suppuration has occurred. I have injected several encysted tumors of the back with pure acid and have seen them disappear without any pain or inconvenience to the patient. I have used a 50 per cent. mixture of the acid with water (on cotton, with holder) and thrust the cotton through a polypus of the nose, and also through uterine polypi, and have destroyed them with one or two treatments. Warts may be removed by touching with carbolic acid on a dull-pointed stick.

Toothache can be relieved almost instantly by applying about one-half a drop to the exposed nerve with a camels-hair pencil.

I have touched the tonsils lightly in whooping-cough, scarlatina, and in some cases of tuberculosis, and have had results that were suggestive of further trial in these diseases.

Ulcers of the mouth of the womb can be cured by using this mixture—sometimes the pure acid. I have relieved dysmenorrhea a great many times by passing the cotton on holder (saturated with 50 per cent. mixture) through the neck of the uterus—a relief which is very gratifying to the patient.

Robert Mason, M.D.
Exeter, N. H.

OUR LONDON LETTER.

(From Our Special Correspondent.)

ABERDEEN UNIVERSITY, 400TH ANNIVERSARY, ROYAL CEREMONY—ARE CELTS PRONE TO LUNACY?—NOISES FROM A SANITARY ASPECT—POOR-LAW INSTITUTIONS FOR SPECIAL DISEASES—VACCINATION—LONDON UNIVERSITY—OPEN-AIR LEAGUE—THE LATE DR. HENRY TWEEDY.

London, September 28, 1906.

Aberdeen has all this week drawn to itself the chief attention of medical, scientific, and literary circles. The preparations for the celebration of the 400th anniversary of its University have been for some time a familiar theme of surprise or praise, and now the great function, including the opening of the new Marischal College by the King and Queen, which took place yesterday, is matter of history. The foundation dates from 1495, when Pope Alexander VI issued the Bull which resulted a few years later in the establishment of King's College; a century later Marischal College was founded by the fifth earl of that name. The two were only amalgamated in 1860. At present arts and divinity have their home in King's and medicine in Marischal. It is the latter which is the occasion of no small part of the proccedings, for it has been practically rebuilt and is said to be the largest granite structure in the world, the whole of the buildings being of the famous granite of Aberdeen. The tower which dominates all at a height of 235 feet, the gift of Mr. Mitchell, a graduate, is in the Gothic style of the English perpendicular period, the lines of which are finely displayed in the hard granite. I hear that the cost has been from £150,000 to £200,000. Delegates and visitors from all countries, not a few from the United States, have thronged the city all the week and had their share in the rejoicings and entertainments lavishly provided by the University, the city, and the inhabitants. The official commemoration began with service in the University chapel at King's College on Tuesday, and a remarkable procession of delegates in academic robes through the principal streets to the Strathcona Hall, erected by Lord Strathcona for the purpose of accommodating 2,400 guests his lordship has invited to a great banquet, and to serve other parts of the celebrations. Arrived at the hall, every seat—and it holds 4,000—was quickly occupied, and Lord Strathcona, as Chancellor of the University, welcomed the assembly as a world-parliament of universities, animated by a single-minded desire to congratulate the ancient one which had kept the sacred torch of learning burning brightly for four centuries. The presentation of addresses occupied nearly two hours. In the evening a great banquet was given by the Lord Provost and Municipality.

On Wednesday the chief event was the conferring of honorary degrees in Marischal College, presided over by the Chancellor, Lord Strathcona, supported on the right by the principal, Prof. Lang, and on the left by Sir F. Treves as Lord Rector of the year. Eighteen degrees of D.D. were given and 114 of LL.D. Among the latter were naturally representatives of science and medicine. Of these last, Sir F. Laking, physician to the King, who is only just convalescent from a severe illness, received quite an ovation, expressing the sympathy and pleasure of the great audience. Afterwards there was a reception by the University chiefs at King's College of more than 4,000 guests, and athletic sports by the students in the recreation grounds. In the evening a reception in the art gallery and a ball in the music hall by the students. But the great day was yesterday, when the King and Queen went to Aberdeen for the opening ceremony. At the boundary their majesties were received by the municipal authorities. The Lord Provost presented the keys to the King, which were returned with a word or two, a great procession was formed and passed through about two miles of crowded masses of Aberdeenians to Marischal College. Here an address upon the University was read and the King, having replied, declared the new buildings open. Thereupon the University Choral Society struck up a psalm, in the singing of which the King and all the assembly joined. The Dean of the faculty offered prayer, and afterward a great number of presentations to their majesties were made of the staff and others connected with the University.

Then came an unusual but pathetic incident. A poor man on crutches was brought and the King pinned on his breast the Albert medal, warmly shaking his hand. The medal was awarded for a brave attempt to save an old man from a railway train, the recipient, Robert Munro, being crippled in the effort. After inspecting the new building the King and Queen went to the municipal buildings, where

the Lord Provost provided luncheon and was knighted. An address from the corporation was also received. On returning to the station, their majesties were again acclaimed by the population, and at a point near the Prince Consort's statue three hundred veterans of the Crimean and later wars were massed and made their cheers heard.

The Chancellor's great banquet, mentioned above, took place in the evening, and it is declared to have equaled expectations. He also gave £500 to the municipality to feast the poor of the city. The streets were illuminated and there was a grand display of fireworks at the Links. Today the program includes excursions to various places of interest, a reception at the Royal Infirmary of members of the medical profession, an "at home" in Marischal College, and a students' symposium in the music hall. Correspondents say that the north of Scotland has enjoyed magnificent weather all the season, rain falling only once this month, and the tradition of King's weather having been justified yesterday.

Is the Celtic race particularly prone to insanity? An affirmative answer seems to be the conclusion of inspectors in Ireland from an exhaustive report they have presented to the Lord Lieutenant, on the alleged increase of insanity in that country. They state that the statistics of other countries even more than those of Ireland itself point to the fact that it is so, notwithstanding the undoubted intellectual gifts of the race. As to whether insanity is actually or only apparently on the increase, the inspectors say the statistics do not afford information on which a definite conclusion can be based. It is obvious, however, that they lean to the opinion that the great numerical increase, as shown by the census and the statistics of public institutions, represents an apparent rather than an actual increase, for they attribute it largely to the accumulation taking place in public asylums, party to a reduction of population by emigration, partly to the return of emigrants suffering from breakdowns, who have come back voluntarily or been repatriated by the United States, and they remark that the emigration of the strong and healthy, among whom the ratio would have been small, increases that of those left behind and further lowers the standard of mental and bodily health by eliminating many of those best fitted to survive and propagate the race. As to causes, next to heredity (itself sometimes the direct result of alcoholic excess in the progenitor), intemperance continues to head the list. The statistics also show that general paralysis of the insane, at one time almost unknown in Ireland, is increasing in the populous districts. At the same time it is less prevalent than in other countries, and in the rural districts practically nonexistent. This, they think, is perhaps to a large extent due to the high standard of sexual morality which obtains all over Ireland.

Dr. Hyslop of Bridewell and Bethlehem Hospitals read an interesting paper at the recent conference of sanitary inspectors, in which he dealt with "Noise in Its Sanitary Aspect." In some industries, he remarked, excessive noise set up deafness as a protection to the brain tracts. But beyond such cases our brains are fully exposed by night and day to whatever stimulus may fall upon the auditory mechanism, and Londoners know what these stimulants are. Referring to some recent statements respecting the number of hours of sleep needed by different persons and classes, Dr. Hyslop said the actual number of hours of unconsciousness was of little importance, compared to those of brain rest. Those who slept longest were not necessarily the most refreshed. The restorative power of sleep is more due to quality than quantity. Complete insomnia for more than four weeks terminated in mental or even physical death. As to causes, nothing in city life, except worry, was more apt to produce brain unrest and its sequels than the incessant stimulating of the brain through the auditory organs. He would put down many of the noises by stringent legislation. Street cries, horns, whistles, chimes, signals, and so on, were only nuisances night and day. Improved roads, rubber tires, and public control over noisy vehicles, were required, and the restriction of heavy traffic to certain roads and hours, should be enforced. Sir J. Crichton Browne, who presided, remarked that nothing was more distracting than cock-crowing; Carlyle was troubled by it, and a Scotch poet changed his residence on account of it. He had himself been troubled by a bantam of indefatigable habits. There was, however, a story of an old woman who refused to sign a protest against steam sirens, as they reminded her of the last trump.

Mr. Duck, in proposing a vote of thanks, said it would be interesting to learn from Dr. Hyslop the extent to which the motorist, with his goggles, noise, and driving costume, was disturbing the brain centers of the unfortunate passengers on the highways.

The Local Government Board has issued a circular letter to the London Board of Guardians, calling attention to their apparent want of appreciation of the homes and institutions, provided for children chargeable to the Unions who are suffering from eye and other diseases, and in need of special treatment or of sea air. The guardians are also reminded of the necessity of reports by their medical officers as to children in the Unions whom they might recommend for treatment in these institutions.

The annual report of the medical officer of the Local Government Board states that the better observance of the vaccination law, mentioned in last year's report, has been maintained. But the general upward tendency in the matter of infantile vaccination has not been universal. Some counties show a higher percentage of "births vaccinated" than the country as a whole, and some counties remain below. As with counties, so with Poor-Law Unions, the areas directly concerned in vaccination and ministration. Nevertheless, comparing the present and past, there is shown in both areas an advance to a higher grade of acceptance of vaccination.

Sir Edward Buck, Vice-Chancellor of the London University, delivered the inaugural address at the opening session of Birkbeck College, on Wednesday evening. He said there were now 820 teachers in London recognized by the University—a far larger number than those at the Berlin University and Charlottenburg Institute combined. He believed the University of London would become the largest and most influential on the face of the earth.

The Open-Air League, formed early in this year, will open its first sanatorium colony in Essex in the next few weeks, for the accommodation of twenty-five patients, at an average cost of 25 shillings a week.

Dr. Henry Tweedy of Dublin, the father of the profession in Ireland, has died at the age of ninety-six. He retained his vigor of body and mind up to this ripe age. But a few days before death he had a fall and sustained a fracture of the neck of the femur. He leaves his son, Dr. H. C. Tweedy, physician of Stevens' Hospital; Dr. Hastings Tweedy, the Master of the Rotunda, is a nephew. Sir W. Longly is his son-in-law. Dr. Tweedy took the license of the College of Physicians in 1836 and the M.D., Glas., 1838. He always took great interest in all charitable and religious works, and for many years these have been his chief objects. Our venerable colleague carries with him the respect and affection of those who knew him.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

OPENING OF MEDICAL COLLEGES—NEW PROVINCIAL BOARD OF HEALTH FOR ONTARIO—MEDICAL COUNCIL ELECTIONS—MEETING OF THE FRENCH-SPEAKING PHYSICIANS AND SURGEONS AT THREE RIVERS—BRITISH COLUMBIA MEDICAL ASSOCIATION—THE QUESTION OF MILK ADULTERATION.

Toronto, October 13, 1906.

The Canadian medical colleges have opened with a larger attendance of students than usual. The opening address at the medical department of Toronto University was delivered by Sir Almroth E. Wright of St. Mary's Hospital, London, England. His subject was "Inoculation with Bacterial Vaccines." He showed that the human body was continually seeking to ward off the attacks of microbes, and in illustration explained how the microbe responsible for a common boil succeeded in invading the body and how the human system rid itself of its enemy. To cure such a condition we relied upon certain substances in the blood which had been discovered and called opsonins. These acted in conjunction with the white corpuscles to eradicate the infection of microbes. The same theory applied also to all other microbic infections, the chief of them being those due to the tubercle bacillus. In his description of the method by which nature was assisted in getting rid of these microscopic enemies the lecturer dwelt on the value of inoculation with preparations from the very microbe that was originally responsible for the infection. A number of interesting and instructive cases were cited in which a cure had been effected and which would have been considered incurable before this valuable discovery had been made.

The opening at McGill College, Montreal, was a most successful one. Dr. R. F. Ruttan delivered the inaugural address. There were at least three hundred undergraduates present. The address recalled the foundation of McGill Medical College seventy-five years ago, when Drs. Robertson, Holmes, Stevenson, and Caldwell began the systematic teaching of medicine in Montreal. These men were also instrumental in establishing Montreal General Hospital. The history of McGill has ever been one of progress, and the attendance at the opening this year may well be taken as indicating another session of progressive growth. It is

interesting to note that the Department of Dentistry is now identified with the Medical Department, and the dental student is compelled to take the full medical curriculum for two years—afterward devoting the remaining two years to his own specialty. The medical course at McGill is now extended over five years, with special work assigned for each year.

A new Provincial Board of Health for the Province of Ontario has recently been created. The new board consists of Dr. Charles Sheard of Toronto, Dr. M. I. Beeman of Newburgh, Dr. W. J. Robinson of Guelph, Dr. W. R. Hall of Chatham, Dr. C. B. Coughlin of Peterboro, and Dr. J. W. S. McCullough of Alliston. There is great satisfaction expressed with the appointments which have been made, and the new board will find many interesting problems to engage their attention.

This is the year for the election of territorial representatives to the Medical Council of Ontario. These elections are held every four years, when seventeen representatives are elected from different portions of Ontario. Each medical practitioner has a vote in the division in which he is a resident, and the member to be elected must also be a resident of the division. Besides the territorial representatives there are eight collegiate representatives appointed by the boards of the different universities and colleges. There are also five homeopathic representatives in the Medical Council who are elected by the homeopathic practitioners in Ontario. The provision for homeopathic representatives was made thirty years ago, when the Ontario Medical Act was first introduced. There is no homeopathic College in Canada, and there are less than fifty homeopathic physicians left; yet, strange to say, these fifty have five representatives in the Medical Council, while over three thousand regular practitioners in Ontario elect only seventeen representatives.

The French-speaking members of the medical profession in Canada have a live medical organization, "L'Association des Médecins de Langue Française de l'Amerique du Nord," which has had a successful meeting at Three Rivers, Quebec. The subjects under discussion were tuberculosis, alcoholism, and the hygiene of infants. Upon these subjects several interesting and valuable papers have been read. The majority of the local French medical societies of Canada and the United States were represented by delegates and several of the societies in France also sent well-known men as representatives. The Therapeutic Society of Paris sent Dr. Triboulet on purpose to represent the views of that society in regard to alcoholism. M. Proust represented the Medical Faculty of Paris and M. Lori, Professor of Hygiene in the Higher School of Colonial Agriculture, represented the French Association for the Advancement of Science. The officers elected to arrange for the next meeting were: *President,* Dr. A. Simard; *Vice-Presidents,* Dr. Hervieux, Dr. Lanoix, and Dr. Sirois; *Secretary,* Dr. Paquette; and *Treasurer,* Dr. Doriow. The next meeting will probably be held in Quebec City.

The annual meeting of the British Columbia Medical Association was held this year at New Westminster, and was, in point of attendance, and interesting program, the best yet held in the Western province. The president, Dr. George Drew, in his annual address touched upon many interesting historical reminiscences in connection with medical progress in the West, and made an eloquent plea for firm adherence to duty, principle, and honor upon questions of moral and professional character, as all-important in fostering and developing the best interests of the profession. The meeting was made most interesting by the discussions, that were a feature of the session. The officers for the coming year are: *President,* Dr. R. L. Fraser, Victoria; *Vice-President,* Dr. J. M. Pearson, Vancouver; *Secretary,* Dr. R. Eden Walker, New Westminster; *Treasurer,* Dr. J. D. Helmcken, Victoria. The next meeting of the association will be held at Victoria.

A bulletin, recently issued by the Chemical Department of the Inland Revenue Department, has called attention to the important subject of milk adulteration. Of 31 samples of milk collected in Toronto 13 were found genuine, 11 doubtful, and 7 adulterated. Regular inspection of dairies by health officers and frequent analyses are strongly advocated and will probably form one of the first questions to be discussed by the new Provincial Board of Health. Montreal has now a pure milk league. During the discussion on milk supplies in the Section of State Medicine at the recent meeting of the British Medical Association at Toronto Professor Glaister of Glasgow urged that the weak spot in the existing law and regulations respecting the milk supplies was that executive action was deferred until the harm was done. He advocated a system of inspection and supervision which would be, as far as possible, preventive in its operation. Where milk is collected for distribution and use in large centers, especially in cities, the collection of it, as well as the surroundings from which it is derived, should positively be under the local Board of Health most concerned.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

MEDICAL VISITORS FROM FRANCE—THE TUBERCULOSIS CAMPAIGN—THE PHYSIOLOGY OF HEARING—THE KAISERIN FRIEDRICH-HAUS.

BERLIN, September 30, 1906.

THE physicians of Berlin, from August 16 to 19, gave themselves up entirely to the pleasant task of showing their French guests the medical institutions and other attractions of our capital. The committee of arrangements, of which our prominent gynecologist Kossmann was the president, carried out all the details of entertainment in most successful manner. It was no light task for the strangers to visit within three days such great institutions as the Königliche Klinik, Königliche Charité, Garnisonlazarett Tempelhof, Rudolf Virchow Krankenhaus, Am Urban, Institut für Infektionskrankheiten, Heilanstalt in Beeliz, and several private hospitals, in addition to the Langenbeck Haus and the Kaiserin Friedrich-Haus, to say nothing of the receptions and other social entertainments. This was the first time that a body of French physicians of this size, the deputation numbering about forty, had visited our country, and doubtless one of the speakers who delivered an address was right in saying that science knows no political enmity, though I believe that such meetings are not only of scientific but also of political benefit. The interesting proposal was made by Kutner of founding an international committee for organizing international medical journeys for purposes of study. The committee was promptly formed and has as its president Kossmann of Berlin, and as members, Bazot of Paris, Guyot of Geneva, Kutner of Berlin, Lifrange-Bertrix of Belgium, and Tini of Bologna.

An interesting summary of the work of the Berliner Auskunfts und Füsorgestellen für Tuberkulose has been presented by Dr. Kaiserling, the general secretary of the organization. In the period of nineteen months 15,646 patients were examined, about 3,000 being males, 5,500 females, and 6,000 children. Whenever possible the entire family of the patient was examined and the total number of examinations made exceeds 50,000. Kaiserling believes that school children suffer from tuberculosis to a greater degree than has hitherto been supposed, and that the disease becomes manifest when young adults begin to do more arduous work. Over a thousand persons were admitted to sanatoria and just as many to convalescent homes, and in many instances families deprived in this way of the bread-winner were cared for by the organization. The eleven official nurses made 18,540 visits for the purpose of teaching sanitary rules, and to improve the home conditions of the poor.

At the session of the Physiologische Geschellshaft held in the middle of the summer Kalischer presented a striking demonstration which seems likely to throw additional light on the physiology of hearing. Dogs were trained to pick up pieces of meat when certain tones were sounded on the piano or organ and to leave the food untouched when other tones were played. The accuracy of the performance of the animals was not interfered with by extirpating the auditory center, and also the cochlea of the one side, but the experiment failed if both cochleæ were removed. It appeared that dogs possess an extraordinary tone sense and are able to distinguish a single tone in a chord.

During the leisure of the summer there have been many opportunities for inspecting the Kaiserin Friedrich-Haus, the dedication ceremonies of which I described in a previous letter. The magnificent building situated in the neighborhood of the Charité Hospital is intended to furnish physicians with a central meeting place in which they can acquaint themselves with the progress that is being made in all branches of medical science, and complete outfits are provided which can be sent for teaching purposes to any part of the Empire in which they may be desired. In the third story of the building are a number of laboratories equipped for chemical and microscopical investigations, the equipment being unusually complete. Another part of the building is intended to serve for bacteriological and experimental studies, a special laboratory being reserved for work involving the handling of dangerous cultures. The Roentgen-ray outfit and the equipment for medical photoggraphy is the finest yet installed in Berlin, and it is expected that the building will become a center for the production of medical photographs. An interesting feature is the laboratory devoted to the purpose of making plaster casts of skin diseases, etc., of which a great collection has already been formed. The chief attraction of the whole building is the beautiful auditorium, constructed in amphi-

theater fashion and provided with a specially designed blackboard which by a simple mechanism can be lowered so as to uncover a screen for use with the projection apparatus. All the facilities of the building may be made use of for teaching or research by any physician who can provide proofs of his ability. It is intended, furthermore, to have the Kaiserin Friederich-Haus the center for the whole post-graduate medical life of Germany. Teaching appliances of every kind have been assembled in collections so packed as to be readily transportable, and these can easily be shipped to any point where it is desired to give one or more lectures. Other features of the building are a valuable collection of exhibits relating to the history of medicine, and to various systems of treatment, such as medico-mechanical apparatus, physical dietetic methods, and medical electricity and optics. The well-known watering places such as Carlsbad, Ems, Franzensbad, Wildungen, etc., have arranged exhibitions intended to illustrate the characteristics of their springs and institutions. Finally, the reading-room must be mentioned, which has been lavishly provided with books and periodicals by the great medical journals.

Progress of Medical Science.

Boston Medical and Surgical Journal, October 4, 1906.

The Ulnar Nerve as a Landmark of the Elbow.—F. J. Cotton regards this nerve as an indisputable landmark. It lies in an anatomically constant position behind the internal epicondyle, bound down loosely by fibrous tissue; it is a large nerve; it is covered by no muscle; it can readily be reached even in the presence of much swelling, if this swelling is slowly massaged away; it may be identified in every case if reached, not only because it is the only cordlike structure at the back of the elbow that can be rolled under the finger, but also because the patient can readily assist in its identification just as he can contribute to the identification of kidney or testis, by the subjective sensation; no one is in the slightest doubt as to when his "funny bone" is touched, whether there be an injury in this region or not. In many cases no other landmark at the elbow can be relied on; either condyle may be displaced by fracture and lose its characteristic shape and place so far that it cannot certainly be identified. Particularly in the common and often overlooked fractures (or, more properly, epiphyseal separations) of the internal epicondyle, it is of obvious service. If we can feel an ulnar nerve not lying in the backward hollow of the hook of the epicondyle, but lying exposed near the tip of a flat surface of bone, no argument is needed. The epicondyle is gone and we shall eventually find it displaced forward and downward as usual. The objection may be raised, and fairly raised, that the ulnar nerve may be displaced. The author has observed a good many cases with regard to this displacement and has reported certain cases of the recurrent displacement; but this recurrent displacement is relatively uncommon, and pertains only to the flexed position; it is present only in cases in which the nerve is *obviously* movable beyond normal.

New York Medical Journal, October 6, 1906.

Peculiar Attitudes in Epilepsy During Sleep.—N. B. Ross records some interesting observations made at the Craig Colony. He has observed a peculiar similarity of posture during sleep among low-grade patients. Many of them are curled up—that is, the legs are flexed on the thighs, while the arms are in a semi-flexed position back of the knees when the latter are flexed. The head is bent forward until it rests on the knees, and often this grade of patients entirely cover their heads with blankets, exposing them to the danger of asphyxia in attacks during sleep. Others of this grade sleep in a sitting posture night after night the year round; others simply brace the head against the pillow as it stands on edge at the head of the bed, while still others sleep with their arms above their heads with the fingers clasped, thus supporting the head. Some sleep with their heads resting upon elbows and hands, while others sleep in a posture in which the head is flexed until it touches the breast, without giving any support whatever to the head. A few lay outstretched upon the back with heads greatly extended, doing so by means of a pillow rolled up and arranged to conform to the scapular and interscapular region of the back. A great number of these patients prefer to sleep curled up on a mattress upon the floor, for the reason that they fear attacks during the night. They would rather thus sleep than occupy a bed of ordinary height, from which they might fall. Some excellent photographs illustrate the paper.

The Relation of Gastric Ulcer to Gastric Cancer.—M. R. Barker relates the case of a man of thirty-seven years in whom all the symptoms pointed unmistakably to peptic ulcer. Under a long-continued treatment he improved, when the hydrochloric acid in the gastric secretion began steadily to diminish. Gradually there developed all the symptoms of gastric cancer, which was confirmed by autopsy, a large open ulcer being found in the pylorus, the edges of which were elevated and infiltrated with cancer cells. The author believes that in such ulcer cases the acid diminution points unmistakably toward malignant invasion and should be regarded with the gravest suspicion, although the patient seems to be doing well. This cancerous invasion may occur in an open ulcer or in the scar tissue left by a preceding healed ulcer. Trauma of some kind may be the initial factor leading to the malignant invasion. The morbific cancer agent, whatever it may be, may enter the tissues at the time of injury and remain dormant for a long time. When an ulcerating area is thus infected it never heals, though the outbreaking evidences of malignancy may be long deferred. In regard to the disappearance of the acid, the author ventures the suggestion that in the evolution of the malignant process, a toxin is produced which, acting upon the nerve centers which control the gastric cells, paralyzes them, thus rendering these cells inactive, and that this toxin is produced as quickly as the cancer invades the tissues, and increases as the cancer increases, and as the toxin increases the hydrochloric acid decreases, until it has totally disappeared.

Journal of the American Medical Association, October 13, 1906.

Hemorrhage in the Newborn.—H. McClanahan reports six cases of hemorrhage occurring spontaneously in the newborn, with histories; several cases of traumatic hemorrhage are also briefly reported. One of the spontaneous cases was a fatal hemorrhage from the lungs, which apparently is rather rare. He gives the principal facts in regard to hemorrhage of the newborn, its occurrence within the first few days after birth, its serious character in most forms, its apparent lack of any relation to hemophilia, and the obscurity of its etiology. He thinks that it is probably due to some unknown specific cause producing a change in the blood-vessels. In hemorrhages occurring later than the first ten days of life, he considers septic infection as the most likely factor. His experience, apparently, does not afford any special support to the theory of hereditary syphilis in these cases, though it is considered an important predisposing cause.

Benign Cystic Epithelioma.—J. V. Shoemaker and L. Napoleon Boston report a case of this comparatively rare condition, of which they have been able to find records of twenty-four other cases in the literature. The growths occupied the right arm; the general condition was that of moderate secondary anemia, which improved under treatment. Microscopic examination made it evident that the neoplasms originated in the hair follicles and were examples of what has been described as trichoepithelioma. Few cysts were present owing to the slight age of the tumors, they having existed but a few months. These benign tumors of the skin, the authors remark, have received but little attention from pathologists.

Banti's Disease.—W. L. Bierring and E. Egdahl report a case of Banti's disease in which splenectomy was performed and discuss the blood findings. The notable facts are summarized as follows: 1. Before the operation the blood condition was that of the secondary type of anemia, low percentage of hemoglobin and leucopenia. 2. After splenectomy there was a slight fall in red cells, then a rise, a leucocytosis at its maximum twelve days after the operation and characterized by a relative increase in the mononuclear leucocytes, especially the large mononuclears. 3. The absence of myelocytes and the scarcity of nucleated reds, both before and after splenectomy. Discussing these findings in connection with those of others in this disease, the authors remark as to the significance of these blood changes, in hypertrophy of the spleen from any cause, that a decrease in hemoglobin, in erythrocytes, and in many cases also in the white corpuscles, is very likely to follow. How this leucopenia occurs is hard to explain with our present ideas of the hematopoetic function of the spleen, while the cause of the general secondary anemia with splenic hyperplasia is as yet hypothetical. The good results from splenectomy in both splenic anemia and Banti's disease seem to favor the view that the spleen is in some way responsible for the poor blood conditions. The lymphocytosis after splenectomy must be regarded as an effort at compensation. The authors

conclude that in considering the blood findings in the two diseases, Banti's disease and splenic anemia, before and after splenectomy, one is led to the opinion that, whatever the nature of the disease process or the causative influence, the blood-forming organs are not particularly concerned. The more likely points of attack are the vascular channels, the tissues of the spleen, and in time also those of the liver.

The Open-Air Treatment of Pneumonia.—W. P. Northrup for over eleven years has been using free ventilation and fresh air treatment in pneumonia. The patients most favorably affected by open-air treatment are those with severe poisoning, with delirium, partial cyanosis, or deep stupor. In Northrup's experience all patients do better in cool fresh air, which can be secured in private practise by screening off a portion of a room by an open window. None have been harmed, in his observation, and some have been greatly benefited and possibly saved by the cold fresh-air treatment. If pneumonia, due to an infecting agent, is thus benefited, the value of the treatment for other infectious diseases is suggested, and, in fact, he has tried it in many others, including typhoid fever with severe bronchitis, whooping-cough with bronchitis and convulsions, with excellent results. He considers it, in fact, the ideal treatment for septic fevers. The only regulation is to keep the patient comfortable and especially to keep the feet warm.

Gangosa.—O. J. Mink and N. T. McLean describe the disease known as gangosa, a form of ulcerated rhinopharyngitis which seems to be endemic in the Ladrone and Caroline Islands, but has been reported also from some other tropical regions. It has evidently existed there for at least 150 years, is confined to the natives, and does not seem to be hereditary or due to diet. The evidence is also against its being a luetic manifestation or a sequel to yaws. The authors' opinion is that it is due to some specific infection, possibly carried by flies or by direct contact, overcrowding, etc. The disease seldom being fatal, few chances for autopsy occur, and other than local symptoms and lesions have not been observed. Fordyce says that the lesion is a granuloma of undetermined nature, the histological picture somewhat resembling tuberculosis. It commences with an ulceration of the pharyngeal mucosa, becoming rapidly progressive and involving sometimes the hard palate, nose, eyes, and face. The tongue and muscles of deglutition are spared, and hearing is rarely affected. In the quiescent stage, scar tissue remains, but the active stage may continue indefinitely or may be arrested at any time. A fulminating type occurs in young children, usually proving fatal in forty-eight hours and closely resembling diphtheria. If the patient survives beyond that period the disease follows the usual course. The diagnosis is simple. The sudden onset distinguishes it from lepra and lupus, and the characteristic bacteria are absent. The symptoms differ from syphilis and specific treatment is a failure. The fulminating type is diagnosed from diphtheria by the absence of the Klebs-Loeffler bacillus and the characteristic mutilation. The contagiousness of the disease is evident, and isolation, which was discontinued at the time of the American occupation, has again been made compulsory. In the fulminating type rigid quarantine should be enforced. In the early stages treatment clearly limits the progress of the disease. It is essentially local and aims to destroy the affected area. Tincture of iodin, employed freely, is apparently the best agent, though in some cases the actual cautery may be more effective. Antiseptic mouth washes should also be used and tonic treatment when necessary. As a deodorant, potassium permanganate, 1 per cent. solution, has proved most advantageous. The authors suggest the possible utility of *x*-ray or light treatment. In the fulminating type the treatment should be symptomatic, combined with thorough local disinfection.

The Bacteria in Scarlatinal and Normal Throats.—From a study of 154 throat cultures, 51 from normal throats, 75 from cases of scarlatina, 14 of measles, 5 of tonsillitis, 5 of pneumonia, and 4 of pharyngitis, G. F. Ruediger sums up his findings as follows: *Streptococcus pyogenes* is constantly and abundantly found on the tonsils in cases of tonsillitis and scarlatina before the subsidence of the inflammation in the throat. The organisms rapidly decrease in numbers after subsidence of the throat inflammation. *Streptococcus pyogenes* cannot be considered a normal resident of all healthy throats, though it was found in small numbers in 60 per cent. of the cases examined. Pneumococci of low virulence were found in 64 out of 71 throats. A large group of organisms lying between the typical *Streptococcus pyogenes* and pneumococcus were found in all normal throats and in nearly all diseased throats. They have very little virulence for rabbits, and as they are found in nearly all cases they may be considered as normal inhabitants of the throat. *Streptococcus pyogenes* from normal throats appears to have a slightly greater virulence than these organisms from scarlatinal throats.

The Lancet, September 29, 1906.

Arterial Blood Pressure in Heart Disease.—H. J. Starling details the results of personal experiments and observations. He considers it of great importance to note this condition of pressure in all cases of failing heart. It enables us to classify a given case under one of two headings. In the first the heart muscle is at fault. If we bleed, it is to relieve temporarily the distended right heart. If we give oxygen, it is to improve the nutrition of the heart and to relieve it in cases of maloxygenation by relaxation of arterial pressure. In the second instance we should reduce the high pressure, which has worn down the working power of the heart muscle. Bleeding in such cases would not alone give temporary relief to the heart. It would also, by affording a stimulus to building up of the tissue, enable the organism to apply its nitrogenous waste products to this purpose, and so tend to the purification of the circulating fluid. On the assumption that there is a plethora in the widest sense of the term, and that it is primarily due to an excess of income over expenditure, the treatment which would seem to be indicated would run on the old-fashioned lines of bleeding and purging. At the same time there must be a complete reformation of mode of life. The income must be diminished by limitation of food; the output must be increased where necessary by regulated exercise. It is probably in cases such as these that Oertel's methods of treatment of heart disease have been most successful. Whether, however, limitation of fluids in the diet is desirable, the author is inclined to doubt. Although increased fluids tend to the perpetuation of the plethora present in these cases, too rigid a restriction of fluid must seriously hinder the excretion of the hypothetic toxic substances which we have assumed to be the cause of the disorder.

Endemic Hematuria.—P. G. Stock gives some notes on sixty-five cases of endemic hematuria, occurring among the soldiers in the late South African war. These observations seem to show that the average incubation period of the disease is about six weeks. Concerning treatment, the author is inclined to think that the best results have followed the administration of methylene blue. It has been suggested that the use of a toxin in such cases should produce good results, and this is borne out by the following facts: Two patients who were suffering from bilharzia contracted enteric fever and on convalescing the urine was found to be free from the ova, and during the time they were under observation (some months) they had no recurrence of symptoms. At the post-mortem examination which was held on a native who died from dysentery and in which the bilharzia parasites were dissected out within two hours of death, the worms were found to be dead; there were well-marked dysenteric lesions of the intestines. The ascaris lumbricoides is almost invariably killed by acute infections. This seems to offer some hope of success in what must be either an incurable disease or one in which time is the only remedy. The toxin might be conveniently administered by the hypodermic injection of Wright's antityphoid serum. It would not be necessary to give sufficiently large doses to produce a serum reaction, but a series of small doses might be tried which would cause little or no inconvenience. The author notes the general opinion that there is no danger of patients spreading the disease, but admits that no positive opinion can be given on this point until more is known of certain phases in the life history of the bilharzia.

A Case of Plague.—This study is made by J. B. Cleland. The points brought out may be expressed in the following statements: Living plague bacilli exert only a mechanical effect and not a toxic one on the tissues, and as they only rarely remain and multiply at the seat of inoculation, there is seldom any local reaction and as rarely a lymphangitis. The glands of the groin are those draining the area of inoculation. In them the bacilli are first arrested, and greatly multiply before passing on to other glands or to the blood stream. Hence we have an intense local reaction, *i.e.*, the bubo. These are sometimes wanting, because the bacilli may have entered the body through other routes than the skin, or if the latter has occurred they may have escaped the nearest glands by entering more directly into the blood stream, or may have multiplied in the glands to a less extent than usual. Symptoms do not appear during the incubation period because the living bacilli are not toxic and some days must elapse before antimicrobic bodies or other forces can destroy a sufficient number of the bacilli and so set free large doses of toxin.

British Medical Journal, September 29, 1906.

Tuberculous Cervical Adenitis.—A Gregor reports the case of a child of six years with a swelling on the left side of the neck, of one week's duration. There was a distinct family history of tuberculosis on the father's side. The gland was tender and painful, and in a few days sup-

purated. The abscess was opened and drained. The discharge continued ten days and the whole gland began to break down. The parents refused a general curetting of the cavity under anesthesia. It was finally subjected to irradiation, fifteen sittings being held, each lasting fifteen minutes. No violent reaction followed, but the granulating surface closed up and healing was finally complete.

Remarks Upon the Pneumotoxin.—A. Macfayden details the results of certain animal experimentation. He finds it possible to extract an acutely lethal toxin from the bodies of virulent pneumococci, and one of much greater potency than the soluble toxins described by previous writers. The endotoxin of the pneumococcus is sensitive to the action of heat. A filtered cell juice heated to 55° C. for an hour failed to kill in doses of 0.5 and 1 c.c., while 2 c.c. only caused death at the end of five days. The unheated juice was acutely lethal in doses of 1-20 c.c. The prolonged action of chloroform vapor is also injurious to the toxin. After an exposure of one hour to chloroform vapor, 0.5, 1, and 2 c.c. did not kill the test animals, the lethal dose of the untreated toxic cell juice being 1-20 c.c. References are made to the work of other observers.

Cerebral and Ophthalmic Complications in Sphenoidal Sinusitis.—St. Clair Thompson makes a careful and elaborate study of this question, and reports two cases in which the sphenoidal origin of intracranial suppuration was confirmed by autopsy. He has made a careful search for previously recorded cases and has been able to bring together 40 cases, which are carefully analyzed. In 17, meningitis was the only or predominant symptom; in 4, thrombosis of the cavernous sinus; in 13, thrombosis and basic meningitis; in 2, meningeal septicemia. Encysted dural abscess, hemorrhagic encephalitis, intracranial abscess, phlebitis of the cavernous sinus, intracranial hemorrhage, and suppurative encephalitis were found respectively once. The symptoms of sphenoidal sinusitis are classified according to their effects on neighboring and distant organs and on the general health. Various affections are simulated by cerebral infection from this source. Thus patients thus affected were admitted to hospital for phlegmon of cheek, ear disease, croupous pneumonia, tuberculous meningitis, tonsillitis, typhoid fever, etc., but in each instance the progress and termination of the case showed cerebral infection from the sphenoidal sinus. The route of infection may be from the sinus mucosa, then to the subarachnoid space by direct transference through bone, by the veins, or by the lymphatics. Various bacteria have been isolated from these cases, streptococci, staphylococci, pneumococci, etc. It is quite possible that the sinus itself becomes originally infected through the tonsil. A series of cases is referred to, bearing out this theory. The nearness of the sinus to the orbit would naturally lead to prominent eye symptoms. In one of the author's two personal cases, proptosis and chemosis were present and due to a retro-ocular abscess. Edema of the eyelids, coincident with a nasal discharge, should always make us suspicious of deep-seated trouble. The nasal discharge is not always in evidence. Its absence has been noted in several cases. The outpouring of pus from the sinus may be intermittent, and it is often very difficult to wash out this sinus without a preliminary operation on the middle turbinate. Several diagrams illustrate the anatomical points of the paper, which is an able contribution on a most important topic. A full bibliography is appended.

Berliner klinische Wochenschrift, September 24, 1906.

The Treatment of Postoperative Sinuses by Wright's Vaccine Method.—Weinstein employed a method founded on Wright's researches on opsonins for the treatment of obstinate sinuses following laparotomies. In each instance cultures were made from the sinus, and the vaccine prepared from these according to Wright's directions. Great stress is laid on the fact that the organisms used in producing the vaccine must be those that are found in the wound of the particular patient. Four cases were treated, and in two of them the sinus was caused to heal completely, after having persisted for four years in one instance. The third sinus was almost completely closed at the time of writing, but the fourth, which communicated with the intestime and was the result of an operation for appendicitis in which the appendix was not removed, still remains open, though the general character of the wound and of the discharge has improved.

Clinical and Experimental Observations on Gastroptosis.—Rosenberg reports on observations made to determine the correctness of Loening's recent statement that in nearly all cases of gastroptosis the motility is increased. Rosenberg examined twenty cases of this sort and found hypomotility in 70 per cent., hypermotility in 20 per cent., and normal motility in 10 per cent. He believes that in the earlier stages of ptosis there may be a period of temporary hypertrophy of the gastric musculature just as is the case with the development of cardiac dilatation, owing to the increased resistance to be overcome. Later on dilatation takes place, the muscle weakens, and hypomotility results. He suggests that Loening's results were gained from a study of patients still in the stage of hypertrophy.

Muenchener medicinische Wochenschrift, September 25, 1906.

The Transplantation of Human Ovaries.—Cramer reviews the history of attempts in this direction, as well as the theoretical considerations underlying them. He has performed the operation in two cases, in each instance using for the purpose ovaries removed from patients with osteomalacia with the object of curing this condition. In each case the laparotomies were done simultaneously on the patient who was to furnish the ovarian tissue and on the one who was to receive it. In the one case the attempt was made in order to secure the possibility of childbearing for a young woman suffering from atrophy of the uterus and ovaries. The other patient was the victim of a very stormy artificial menopause, resulting from a panhysterectomy. All the patients recovered from the operations without complication and the woman with the atrophic pelvic organs some months later had what apparently was a miscarriage. Preceding this the breasts had become swollen and colostrum could be expressed. In the second case the implanted tissue apparently underwent absorption with considerable promptness, for ten weeks after the operation no trace of it could be detected by bimanual examination.

Pernicious Anemia and Leukemia.—Kelling has already published his opinion that malignant tumors are the result of the implantation in the body tissues of embryonal cells derived from animals in various articles of food, such as raw eggs and uncooked sausage, which latter frequently contains as one of its components uteri of the slaughter animals. He now endeavors to explain the etiology of the malignant blood diseases in similar fashion, and describes several cases of pernicious anemia and leukemia in which he was able to demonstrate in the blood serum of the patients specific precipitin and hemolytic reactions for animal tissues, such as sheep and fowl. He was also able to produce artificial pernicious anemia in a dog by injecting embryonal fowl cells into it, and he found that the animal's bone marrow gave the specific reactions with fowl serum. It is Kelling's opinion that the proliferation of the blood-forming organs which is observed in these diseases is in reality the result of the growth of the foreign cells which have become engrafted in the body. He seeks to explain the nature of pseudoleukemia in a similar way, though he has yet no experimental evidence to justify this view.

Chloroma of the Skull.—Pfeiffer describes a case of this affection occurring in a boy of four years. The first symptoms noted apparently pointed toward an otitic affection, but were soon followed by the development of marked bilateral exophthalmos, severe anemia, enlargement of the cervical lymph glands, marasmus, and death. At the autopsy the typical green tumors were found in the retrobulbar tissues, dura, mastoid process, vertebral column, sternum, and some of the internal organs. The author considers that the following may be regarded as typical symptoms of this unusual condition: Painful exophthalmos, followed by atrophy of the optic nerve, otitic symptoms accompanied by swelling in the temporal region, either on one or both sides, anemia or acute lymphatic leukemia, with glandular enlargements and subcutaneous or submucous hemorrhages, and, finally, the rapid course of the disease and the youth of the patients.

Deutsche medizinische Wochenschrift, September 27, 1906.

Testing the Functional Efficiency of Arteries.—Müller describes a method by means of which it is possible to gain some insight into the functional efficiency of any given individual's arterial system. The underlying principle consists in measuring with the plethysmograph the extent of vascular dilatation or contraction caused by the application of thermic stimuli to the forearm. In the one case a block of ice of a certain size is applied to the bend of the elbow for a certain length of time, and in the other warm water is allowed to circulate through several spiral turns of rubber tubing applied in the same situation. The amplitude of the plethysmographic curve obtained under these conditions affords a means of estimating the functional capacity of the individual's arterial system. As the result of his studies Müller concludes that the functional capacity of an artery in general may be said to be greater the softer and less easily palpable its wall is. In proportion as the wall is thickened the capacity of the artery diminishes, and in the most extreme cases of rigidity the functional efficiency is almost entirely absent. In some cases, however, considerably thickened arteries may yet present normal or even more than normal efficiency.

The Effect of Cholin on Pregnancy.—Werner and Lichtenberg describe a series of experiments made on rabbits by injecting cholin during pregnancy. It was found that by injecting 10 c.c. of a 5 per cent. watery solution of this substance five times at intervals of four days into a pregnant animal, abortion was produced, and on examining the uterus portions of several atrophic and misshapen embryos were found. The daily injection of small amounts of 0.5 per cent. solution caused animals that had previously been fertile either to become entirely sterile or to become much less fruitful. The authors point out the similarity in effect of these cholin injections to the action of the *x*-rays in restricting fertility.

The Methods of Treating Bladder Wounds After Cystotomy.—Baratynski reviews his own experience and that of others in the closure of bladder wounds. The average time of healing in cases in which primary union occurs is 11.5 days; in cases in which most of the wound heals by first intention but there is slight leakage of urine, the average period of healing is 20.3 days. If the condition of the wound requires sutures to be removed, the period is lengthened to 30.5 days, and if the incision is allowed to heal by second intention 66.6 days are required. The author concludes that in cases in which the urine is normal and the vesical mucosa is unaltered, the wound should be sutured completely. The same thing may be done in cases in which the urine does not show marked changes, being neutral or faintly alkaline and there is slight cystitis, under the condition that the latter will be subjected to active treatment. The open treatment of the bladder wound is necessary if there is pronounced cystitis and the urine is alkaline.

The American Journal of the Medical Sciences, September, 1906.

Toxemic Vomiting of Pregnancy.—J. Whitridge Williams states that present evidence seems to justify the classification of serious cases of vomiting during pregnancy as reflex, neurotic, or toxemic, according to the etiological factors concerned. He considers toxemic vomiting a very serious disease. It is a manifestation of a profound disturbance of metabolism. Its exact origin is not known. This affection usually ends in death. In the last stages of the disease the matter vomited has a coffe-ground appearance. No apparent effort is noted during its expulsion. The urine, though diminished in amount, does not contain albumin or casts until shortly before death. It may also apparently show a normal amount of urea as determined by the Doremus method. There is a greatly increased percentage of nitrogen eliminated as ammonia in the early stages, although the nitrogen excreted as urea is decreased. The proportion of amidoacids is increased. The acetone content is very large in some cases. The writer thinks that if the ammonia coefficient exceeds 10 per cent. the diagnosis of toxemic vomiting should be made and the pregnancy at once terminated. Unexpected lesions are found at autopsy. The writer believes that the only way in which advancement in knowledge in this subject may be hoped for is by grouping the cases together according to their anatomical and chemical characteristics and by waiting for the revelation of the significance of the conditions about which little or nothing is now known.

Elephantiasis Non-Parasitica, Secondary to Chronic Cardiac Disease, and Repeated Edema of Pregnancy.—T. W. Hastings describes a case of this nature. The etiological factors he considers a chronic cardiac condition and some local lymphatic deficiency in the right leg. The right leg from the knee down was greatly enlarged. The left leg showed a moderate edema. There was entire freedom from attacks of inflammation in or repeated injuries to the right leg, suggesting that the local condition depends upon some defect in the lymphatics of the affected part. Whether this was congenital or acquired it is difficult to prove. There was persistence without steady increase in size of an edematous condition of the left leg which more strongly suggested some local lymph-vessel deficiency in the right leg. Edema had repeatedly occurred during four pregnancies, and this with the cardiac disease with several periods of broken compensation, would account for the edema in the legs; but it would not account for the thick elephantiatic condition of the skin of the right leg. The patient was born in New Jersey and has never been outside of New York, Pennsylvania, New Jersey, and Illinois. She follows the occupation of silk winder. There is a constant discharge of serous fluid from the right leg. Tissue for histological study has not been obtained. There is no history or evidence of infection. The patient has been treated by bandages, rest, elevation of the leg, and massage. The cardiac condition has also received attention.

Results of the Biterminal Transplantation of Veins.—Alexis Carrel and C. C. Guthrie from their studies have learned that after the transplantation of a segment of vein between the two cut ends of an artery the wall of the artery is only slightly altered, as revealed by the microscope; the wall of the vein becomes enormously thickened, the muscular and fibrous layers of the middle coat and the inner layer of the outer coat being principally involved; there is no evidence of weakening or breaking down of the wall; the ligatures which have been used are enveloped in a dense coat of fibrous tissue. The writers conclude that a venous segment interposed between the cut ends of an artery quickly undergoes anatomical changes; from macroscopic and microscopic standpoints the vein has a strong tendency to assume the character of an artery; from a physiological standpoint it performs the arterial functions.

The Value of Massive Doses of the Salicylates in the Diagnosis and Treatment of Acute Articular Rheumatism.—Thomas Wood Clarke presents the following conclusions: Sodium salicylate can and should be given in much larger doses than are generally used. Given in massive doses it reduces the fever, relieves the pain and swelling, and shortens the course of the disease. It is not injurious to the heart and appears, by quickly cutting off the disease, to offer some protection to that organ. The patient's tolerance to the drug and the rapid cessation of symptoms form valuable therapeutic tests for the diagnosis of acute articular rheumatism.

Infections of the Biliary Tract, with Special Reference to Latent (or Masked) and Typhoid Infections.—A. O. J. Kelly enumerates the following pathways whereby the biliary tract may become infected: The diverticulum of Vater and the common bile duct; the portal circulation; the systemic circulation; the lymphatic circulation and the pathway directly through the wall of the gall-bladder or the gall-ducts from the peritoneum. Doubtless these pathways vary with the infecting agent. Authorities now generally agree that the typhoid bacillus is regularly present in the gall-bladder, and commonly in pure culture, in practically all cases of typhoid fever, this being the one region of the body from which a pure culture of the organism is most likely to be obtained; the typhoid bacillus may persist in the gall-bladder, as well as within gallstones, weeks, months, and even years after the patient has recovered from an attack of typhoid fever; cholangitis and cholecystitis (catarrhal, suppurative, and gangrenous) are by no means infrequent complications of typhoid fever; a history of antecedent typhoid fever may be obtained in many cholelithitic and cholecystitic subjects. The typhoid bacillus may be present in the gall-bladder without exciting pathological lesions, in some cases. There exist also a primary typhoid cholecystitis and cholangitis, an infection of the biliary tract without other evidence of past or present typhoid infection. This affection has not yet been sufficiently studied. The writer cites the history of a number of cases. He declares that it would be wise in all cases of jaundice to undertake bacteriological studies of the blood and the feces. The Gruber-Widal reaction with the typhoid, paratyphoid, and other bacilli should not be neglected.

Branchiogenous Remains and the New Formations to which they Give Rise.—G. Mioni tells us that tumors derived from the remains of the branchial arches have their origin in epithelial germs included at the time of the obliteration of the *sinus cervicalis*, or to the remains of the second branchial arch left after the formation of the pharyngeal segment. They are not truly congenital, since they may begin to develop only after birth, as a result of some sort of stimulant to their growth. They may be divided into three classes: first, those tumors covered with a simple epithelial covering and containing products of the same epithelium. This epithelium may be ciliated or cylindrical, and the contents be mucous, or epidermoid, or both forms combined. The second class consists of remains of the branchial arches, and may be due to inflammations or mechanical disturbances of the walls, becoming adenomatous, carcinomatous, etc. The third class includes teratomata. The commonest form is that of cysts, with walls covered with some form of epithelium. These are derived from the second and third branchial arches. They are situated generally on the sides of the neck, rarely in front. These cysts may become purulent. There are also rare tumors containing cartilage of the embryonal type. They are common near the ears, and are often bilateral, but are rare in the region of the sternomastoid and very superficial. The author describes three tumors operated on by him. One of these was a carcinoma, one a cyst, and the third contained cartilage.—*Archivio per le Scienze Mediche.*

Book Reviews.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE, AND TOXICOLOGY. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Toxicology in Cornell University; and TRACY C. BECKER, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. With the collaboration of AUGUST BECKER, Esq.; CHAS. A. BOSTON, Esq.; Hon. GOODWIN BROWN; W. N. BULLARD, M.D.; G. C. CAMERON, M.D.; J. CLIFTON EDGAR, M.D.; JAS. EWING, M.D.; E. D. FISHER, M.D.; J. C. JOHNSON, M.D.; D. S. LAMB, M.D.; H. P. LOOMIS, M.D.; W. B. OUTTEN, M.D.; ROSWELL PARK, M.D.; J. PARMENTER, M.D.; IRVING C. ROSSE, M.D.; E. V. STODDARD, M.D.; GEORGE WOOLSEY, M.D.; J. H. WOODWARD, M.D. Second edition. Volume One. New York: William Wood and Company, 1906.

OF the importance to the physician of the topics treated in the present work, there can be no doubt; of the general excellence of the handling of these topics there is, also, no room for two opinions. At present we can only give an outline of the contents of the volume under notice, reserving a general review till the completion of the work. The book begins with an historical introduction of twenty-five pages, into which is compressed a large amount of interesting matter, and which represents considerable research on the part of the author. This is followed by a table of the cases cited in the present volume, and this alone is of marked value to the lawyer, and is only one of the many excellent features which differentiate this work from others. The subject of Medical Jurisprudence proper contains chapters on the following subjects: 1. The legal relations of physicians and surgeons, including their duties and obligations; their right to practise medicine and surgery; their legal duties and obligations; their right to compensation; their privileges and duties when summoned as witnesses in courts of justice, and their liability for malpractice. 2. The law of evidence concerning communications between patient and physician. 3. Synopsis of the laws regulating the practice of medicine and surgery in the United States of America, Great Britain, and British North America, with an appendix and a synopsis of the subjects treated in the notes to the laws regulating the practice of medicine. This is by far the longest contribution in the volume, and occupies nearly six hundred pages; unfortunately, it is also the section most liable to get out of date, as the various States are altering these regulations pretty constantly. The section on Forensic Medicine deals with: 1. The legal status of the dead body, the disposal and obligation to dispose of the same; how and by whom it may be exhumed or removed; autopsies, by whom ordered; the rights of relatives and accused persons; including an appendix containing a synopsis of the statutes of the different States and Territories of the United States concerning the same. 2. The powers and duties of coroners and medical examiners; the coroner and his court; the jury and inquest; the effect of the evidence and verdict. 3. Medicolegal autopsies. 4. Personal identity, including the methods used for its determination in the dead and living. 5. Medicolegal determination of the time of death. 6. Death by heat and cold, including insolation, in its medicolegal aspect. 7. Death from starvation in its medicolegal aspect. The volume consists of nearly a thousand pages, and contains information (particularly in the section on Medical Jurisprudence) that every physician should be acquainted with, and with which the law will presume that he is acquainted should he find himself in any situation demanding medicolegal investigation.

SURGICAL SUGGESTIONS. Practical Brevities in Diagnosis and Treatment. By WALTER M. BRICKNER, M.D., Chief of Surgical Department, Mount Sinai Hospital Dispensary; Editor-in-Chief, *American Journal of Surgery*, New York; and ELI MOSCHOWITZ, M.D., Assistant Physician, Mount Sinai Hospital Dispensary; Editorial Assistant, *American Journal of Surgery*, New York. New York: Surgery Publishing Company, 1906.

THESE "Suggestions" are arranged and reprinted from the pages of the *American Journal of Surgery*. They are brief, direct, interesting, and useful.

AIDS TO CHEMISTRY. By T. A. HENRY, D.Sc., Lond., Chief Assistant Chemist, Scientific and Technical Department of the Imperial Institute, South Kensington; Fellow of the Chemical Societies of London and Berlin. New York: William Wood and Company, 1906.

THIS little volume contains a carefully-prepared outline of both inorganic and organic chemistry. It differs from most books of its class, in that it really contains a large amount of chemistry. As an aid to following lectures in college it will be of considerable service, though it is not written from the standpoint of the medical student. To those preparing for the various State board examinations this book will be of little or no use; for, in the first place, it contains much more chemistry than any State board requires; and, further, it omits not only the chemistry of urine, gastric juice, etc., but also a large amount of elementary matter, definitions, general principles and laws, nomenclature, etc. Though small, this work is by no means elementary, and it can be recommended to all who desire a compend that is first class and up to date.

A NON-SURGICAL TREATISE ON DISEASES OF THE PROSTATE GLAND AND ADNEXA. By GEORGE WHITFIELD OVERALL, A.B., M.D., Chicago. Rowe Publishing Co., 1906.

THIS volume contains an account of the author's conservative treatment of the diseases of the prostate gland and its adnexa. As the book is in its third edition, it is safe to infer that it has been found useful. In a future edition the occasional Latin expressions should be either corrected or omitted; such phrases as *ad nauseum*, *bacho et venere*, and *impotentis caeundi* do not appeal favorably to the educated reader.

TECHNIQUE DU TRAITEMENT DE LA LUXATION CONGÉNITALE DE LA HANCHE. Par le Dr. F. CALOT, Chirugien en chef de l'Hôpital Rothschild, de l'Hôpital Cazin-Perrochano, d l'Hôpital de l'Oise et des departements, du Dispensaire, de l'Institut orthopédique de Berck, etc. Avec 206 figures dans le texte et 5 planches (en photocollographie). Paris: Masson et Cie., 1905.

THIS manual on the treatment of congenital dislocations of the hip is the second volume of the author's work on orthopedics. The first volume dealt with hip joint disease; the third will deal with white swelling, and the fourth will cover the subjects of Pott's disease, scoliosis, infantile paralysis, club-foot, torticollis, tarsalgia, spastic paraplegia, rachitic deformities, etc. The author is of opinion that congenital dislocations of the hip can, and should, be cured up to the twelfth or fifteenth year by the bloodless method. The present volume thoroughly discusses the malady in question, and pays particular attention to the diagnosis of the trouble and its prognosis; the various methods of treatment are also given in considerable detail.

PHYSIOLOGY OF THE NERVOUS SYSTEM. By J. P. MORAT, of the University of Lyons. Authorized English Edition, translated and edited by H. W. SYERS, M.A., M.D. (Cantab.), Physician to the Great Northern Central Hospital. With 263 illustrations, 66 in colors. Chicago: W. T. Keener & Co., 1906.

THE present volume is a translation of that portion of the Treatise on Physiology, by Professors Morat and Doyon, which is devoted to the functions of innervation. The subject is a complicated one, at the same time it is one often neglected by the practitioner and inadequately handled in the text-books on general physiology; hence we can welcome the present work, which embodies the latest advances in the knowledge of the nervous system, and contains the most recent views and ideas on this intricate branch of physiology. The first part of the volume deals with elementary nervous functions, and consists of two chapters. The first chapter treats of the nervous element, and handles in turn the static conditions of the neuron; anatomical and physiological data; dynamic conditions; functions of the neuron; stimulation of the nerves; and the laws of electrical stimulation. The second chapter is on energies of the nerve, and discusses energies recognizable in the nerve; electrical energy; consecutive effects of stimulation; fatigue; electrotonus; different employment and effects of electricity; and nerve poisons. The second part of the book is on systemic functions, with chapters on sensibility and motion, with their relations; primary systematizations; consciousness and unconsciousness; and superior systematizations. The last section in the volume is on specific innervations, and contains chapters on tactile, visual, auditory, olfactory, and gustatory innervation. There is a concluding chapter on language and ideation.

ECZEMA. A Consideration of Its Course, Diagnosis, and Treatment, Embracing Many Points of Practical Importance, and Containing 146 Prescriptions, Illustrating Dosage in Local Applications. By SAMUEL HORTON BROWN, M.D., Assistant Dermatologist, Philadelphia Hospital; Dermatologist, Southern Dispensary; Assistant Dermatologist, University Hospital Dispensary, etc. Philadelphia: P. Blakiston's Son & Co., 1906.

ESPECIAL attention is paid by the author of this book to the treatment of the disease. The writer refers in his preface to the dogmatic manner in which some of the facts have been presented, and he explains his method of presenting the subject by the fact that any statement, no matter how true, loses weight when qualified. Thus, instead of the vague directions so common in books of this nature, the reader finds explicit directions for the care of different types of eczema. The treatment of the disease in various regions comprises a very helpful section. A good index completes this convenient little volume.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held October 4, 1906.

DR. CHARLES L. DANA IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Orthopedic Surgery.

Presentation of Instruments Illustrating the Historical Development of Laryngological Technique.—Dr. D. BRYSON DELAVAN made this presentation. (See page 612.)

Presentation of Portraits of Sir Thomas Watson and Sir Andrew Clark.—Dr. CHARLES L. DANA presented these portraits to the Academy.

Nontuberculous Joint Diseases, with Especial Reference to the So-Called Rheumatic Affections.—Dr. ROBERT W. LOVETT of Boston read this paper. He said that the last twenty years had seen a very decided change in our views as to the pathology and classification of joint disease, and the salient features of the change in view occurring in these twenty years were three in number. First, tuberculous joint disease had resumed a more rational position and no longer overshadowed the field, because it was not a newly-recognized, but a well-established and studied affection, and because many cases formerly classed as tuberculous disease had been recognized and placed in their proper categories. Second, the term rheumatism had been subjected to scrutiny and analysis. The adjective rheumatic had done more and was doing more to retard the rational study of joint disease than any term in use; in the past it had been a name to cover all sorts of conditions, and even to-day was to a certain extent accepted as sufficient explanation of almost all obscure cases of joint inflammation. Third, infection played a very important and prominent part not suspected years ago. It had been recognized that acute serous synovitis might be caused by infection. and it had been suspected that infection had much to do with chronic nontuberculous joint disease in general. The study and investigation of acute articular rheumatism had led to the conclusion that many, if not all, cases of so-called acute articular rheumatism were of infectious origin, and that the source of infection might be found (*a*) in some general infectious disease, such as scarlatina; (*b*) in some local infection, as the nasopharynx, mastoid, or appendix; (*c*) in the free entrance of bacteria through the tonsils, especially if they were inflamed. A serous joint inflammation of undoubtedly infectious origin was frequently identical clinically with one arising without obvious source of infection. Osler said: "In the character of the fever, the mode of involvement of the joints, the tendency to relapse, the sweats, the anemia, the leucocytosis, and above all the great liability to endocarditis and involvement of the serous membranes, acute rheumatic fever resembles very closely pyemia, and might, indeed, be taken as the very type of an acute infection." In examining the fluid of diseased joints of any kind for bacteria, it must not be assumed that the absence of organisms established the existence of non-infectious source of the joint effusion. It was assumed in these cases of undoubtedly infectious origin that toxins rather than the bacteria themselves were the direct cause of the joint inflammation. The importance of negative bacterial results should not be overestimated. Organisms of various types had been found in the joint fluid in the endocardium and in other structures in cases of so-called acute articular rheumatism, but the constant association of any type of microorganism with the disease had not been established. Staphylococci, streptococci, and organisms resembling streptococci had been found and given various names, as diplococcus rheumaticus, micrococcus rheumaticus, etc. Accepting these findings as undisputed, one of the three following assumptions must be true: First, so-called articular rheumatism was a specific infectious disease of unknown origin, the cocci being secondary; second, there was no such specific disease, and it must be regarded as a general streptococcus infection; third, it was due to a specific form of streptococcus, which from its clinical behavior must possess special characteristics. We could not at present judge whether the disease was caused by a specific microorganism, and this question was secondary to the question of the infectious origin of so-called acute articular rheumatism. The cocci found in acute articular rheumatism, when inoculated intravenously into susceptible animals, had caused myocarditis, pleuritis, pericarditis, endocarditis, iritis, chorea, and joint effusions, lesions identical with those found in so-called acute articular rheumatism. These results had not as yet been constant. At times inoculation experiments of this kind were negative, and at other times the result was suppuration. Such was the evidence preponderatingly in favor of the infectious character of so-called acute articular rheumatism. It would be better if we spoke of the articular manifestations called acute articular rheumatism as "acute synovitis, probably infectious."

The subject of chronic nontuberculous joint disease was one which was singularly obscure and confused. From the general discussion he omitted syphilitic joint disease, gonorrheal arthritis, the joint affections of organic nervous disease, gouty joints, the joint disease of hemophilia, and the joint disease resulting from malignant disease and actinomycosis. After eliminating these, there remained a group which were in general subacute or chronic, characterized by joint pain and swelling; they were nonsuppurative, generally progressive, and characterized by exacerbations and remissions, and were liable to result in disability or deformity if untreated. These cases might be polyarticular or monarticular, and they might occur at any age after infancy. In a most casual glance over current literature he had found forty-eight names for this class of cases or for parts of it, including foreign synonyms or obsolete names. We were familiar with the group or its members under the names of rheumatoid arthritis, rheumatic gout, chronic rheumatism, osteoarthritis, etc., etc. There was no agreement as to a name for the group or as to existing classification. He recalled the fact that but a few years ago there were many names describing tuberculous joint disease, while to-day one heard but the one name. On the subject of nontuberculous joint disease the medical community seemed to have gone classification-mad, and he pleaded for greater simplicity. Provisionally he would call the whole group arthritis deformans. The gross pathological changes found in these cases consisted of one or more of the following types: (1) Chronic serous synovitis, with thickening of the synovial membrane. (2) The development of synovial villi. (3) Ulcerative arthritis, with destruction of areas of the joint cartilage. (4) The formation of ankylosis. (5) The proliferation of bone around the joint margins. The fibrillation of cartilage was frequently associated with all of these conditions, and the types might be associated clinically in any combination. Certain cases of chronic arthritis deformans had their onset during the occurrence of a general infectious disease. The onset in many cases was indistinguishable from what was called acute articular rheumatism. Schüller had described a dumb-bell bacillus which he associated wholly with the form characterized by villi. They could be cultivated, and when isolated would cause similar joint affection in animals. He cited a number of investigators who had found bacilli in the synovial fluid in cases of this class. Trauma was recognized as a localizing cause of certain cases of arthritis deformans. He reviewed the nervous theory, which assumed that the pathological changes were due to reflex nervous disturbances in the spinal cord. He also spoke of the metabolic theory, which assumed a dyscrasia, or disturbance of metabolism, as the cause of changes, the symmetry of the lesions and the general

symptom complex being the basis of the theory. Examination of excreta had failed to give support to this theory. Two or more etiological causes under certain conditions were capable of producing one or more of five pathological results. The etiological sources bore no constant relation to the pathological results. The pathological results were grouped in no constant relation, either to the etiological causes or to each other. Such being our limited knowledge, it would be an advantage to have a classification which did not overrun the boundaries of our knowledge. It was well known that there were distinct clinical types frequently seen, and it was safer to assume that these were types rather than separate diseases, until the entity of each separate disease was proved. In short, he advocated the view that until proven by sufficient evidence to be separate diseases, the conditions which he had spoken of as types of arthritis deformans should be spoken of as arthritis deformans with proliferation of bone, arthritis deformans of the ankylosing type, etc., and that separate diseases should be recognized only when their entity had been established by the same class of evidence that we would accept as valid in other departments of medicine and surgery, namely, by discovery of their etiology.

Fortunately our treatment of this class of diseases was far in advance of our theoretical knowledge of their causes and relation to each other. We had ceased to impoverish the patient by irrational diet, and we realized that salicylate of sodium and iodide of potassium did not cure arthritis deformans. The cardinal points of modern treatment were now recognized as (*a*) nourishing diet of the kind best assimilated by the patient, supplemented by tonics, if necessary. (*b*) Regularity of the daily routine in the avoidance of overwork and exposure, and the establishment of proper hygienic surroundings. (*c*) Stimulation of the elimination of waste products by the skin, kidneys, and bowels. The local measures aimed at checking the process in the joint by the avoidance of undue traumatism, the restoration of the local circulation, and the stimulation of the muscle controlling the joint. (*d*) The great importance of rest as a curative factor during periods of irritation had been brought to notice by Gibney and Sayre. (*e*) The local circulation was to be stimulated and the muscular condition improved by massage, baking, douches, and electricity. (*f*) The treatment by congestion of these parts, as described by Bier, deserved especial mention. (*g*) If obstruction existed in the way of tumors or bony outgrowths to the extent of causing disability, they should be removed by surgical measures. (*h*) If any ankylosis occurred at a vicious angle, the limb might be straightened. The relation of arthritis deformans to so-called acute articular rheumatism was a question which we could not settle as yet. This was a problem to be settled in the near future. He advocated restricting our classification to our facts, subdividing only so far as data justified us in so doing, and in the meanwhile to use a fairly unobjectionable term.

Bone Syphilis, Hereditary and Acquired.—Dr. Robert W. Taylor read this paper. In speaking of early and late hereditary syphilis he said that heretofore these lesions had been summed up in two words, osteochondritis and periostitis, but that now we had to include many and varied conditions. Acquired syphilis induced in the offspring two conditions: First, a syphilitic heredity, in which the morbid processes were not specifically luetic, but were the result of a general dyscrasia which lowered the vitality and more or less impaired, retarded, or vitiated the nutritive processes, and to which the term dystrophic lesions was given; and, secondly, true virulent hereditary syphilis, in which the virus penetrated the whole body and produced its protean lesion. As instances of hereditary syphilis affecting the bones, one found affections due to backwardness of development, arrest of development, and imperfect development. In the category of hereditary syphilitic lesions one found osteochondritis, osteitis, osteoperiostitis, gummatous osteoperiostitis, and gummatous osteomyelitis. As correlated to bone lesions, one found arthropathies in the form of mild and chronic synovitis and deforming synovitis, with more or less destruction of joints and involvement of the juxtaarticular osseous tissues. Dr. Taylor confined his remarks to the study of the specific lesions of hereditary syphilis, and the earliest, most extensive, constant and notable lesions were those due to osteochondritis. The changes here seemed to be proliferative, and had not the character of gummatous infiltration. The swelling might develop slowly or rapidly; after reaching their full size, they usually remained in an indolent condition, causing little pain and interfering but slightly with the motion of the joint. Under appropriate treatment they subsided. Degenerative changes sometimes took place in these osseous lesions. The bones most commonly affected were those of the forearm, the leg, the arm, and the thigh. It was exceptional for the victims of multiple bone lesions to survive. Dactylitis syphilitica was then considered, these lesions having the same character as those of acquired syphilis, namely, an osteitis and osteomyelitis. Swellings of the metacarpal and metatarsal bones usually occurred quite early in hereditary syphilis, and might or might not exist with dactylitic enlargements. They might appear as late as the twentieth year. Dr. Taylor reported in detail a case in which the lesions were osteitis, periosteitis, gummatous periostitis, and osteomyelitis, and the sequelæ were atrophy and loss of bone, elongation of a long bone, and ankylosis of joints and eburnation. Fournier had pointed out an important diagnostic feature, that in the late forms of inherited bone disease there was a decided tendency to the involvement of the terminal extremities of the diaphyses. In most cases of hereditary syphilitic bone lesions, particularly when the shafts were attacked, there was more or less pain, some parents looking upon them as growing pains. It was a good rule to suspect hereditary syphilis in any bone lesion accompanied by pain, mild or severe, continuous or paroxysmal. Several cases of late hereditary syphilis with elongation of long bones have been described under the title of partial or local gigantism. Few cases of general gigantism were on record. Hereditary syphilis of the joints was seemingly little understood, and yet it was not of infrequent occurrence. The larger ones were usually involved. The lesion in older children seemed to be an irritative inflammation with more or less effusion, usually without bony involvement, and which subsided coincidentaly with the involution of the exciting cause in the bone structures. In later life, from the sixth to the eighth year onward, synovitis which might be called primary was observed. The affection developed in a slow and insidious manner, ran a chronic course, with little, if any, pain or redness in most cases, allowing some freedom of motion, and showing great tendency to relapse. He stated that syphilis and tuberculosis seemed to go hand in hand together in their lethal course, and many observations had been made of tissues in which this symbiosis existed. It seemed that syphilitic tissues formed a prolific culture field for the bacillus of tuberculosis. So in all cases one should be on the lookout for this second invasion. Dr. Taylor closed his paper with a consideration of the diagnosis of bone and joint hereditary syphilis.

Dr. Henry Ling Taylor said that an extremely common form of joint affection was the gonorrheal, and this might be mono- or polyarticular, and it might appear at any period, even months or years after. Many of the joint affections occurring in the young adult would be found to be due to a gonorrheal infection if the etiology was closely analyzed. He referred to one form, the painful flat-foot, or tarsalgia. This might be associated with osteophytes. Syphilitic bone lesions were not so often found when one considered the prevalence of syphilis. The antirheumatic treatment was usually harmful, and, in the care of these cases, the main indication was to improve the nutrition.

Nontuberculous joint lesions were masquerading under various designations.

Dr. Eugene Fuller said that, in gonorrheal rheumatism, for a number of years he had been draining the seminal vesicles; this seemed to be especially efficacious in those chronic cases in which there was pain and distress, and which would not yield to the ordinary forms of treatment. He looked upon the seminal vesicles as he did upon other cavities in the body. After doing this operation upon many cases and getting good results, he came across a man in the City Hospital who had had, for four months, gonorrheal rheumatism; the seminal vesicles were tumefied and the patient was in a bad condition, perfectly helpless. He drained the seminal vesicles, which resulted in the pain and distress disappearing and the toes could be moved with freedom, a thing he could not do prior to operation. In two and a half weeks the patient was up and around the ward. This case made Dr. Fuller so enthusiastic that he since had operated upon thirteen others for gonorrheal rheumatism. In these fourteen cases he got immediate relief from the rheumatic symptoms. Out of the fourteen cases there were nine cures. Of the five not cured, two left the hospital free from pain and perfectly comfortable; they sprang into alcoholic and sexual excesses, causing a recrudescence. These two cases should be placed among the cures. In the other cases drainage was not kept up long enough, although the results were encouraging.

Dr. John Rogers, Jr., said that few cases of gonorrhea ever got up any systemic infection; but when they did, the joints usually became involved. In a certain class of cases the patients appeared to be cured by some special protection given the organism, and the inference was that this protection was given by some antibody or serum. There appeared to be three classes or groups, viz., (1) those which quickly subsided; (2) those which lasted from six weeks to four months; and (3) those which continued indefinitely for years. In the first and second groups the patients recovered because of some protection given by the organism; if they recovered, it must be because of their own protection. The use of serum in these cases seemed to give encouraging results. The serum he had used was obtained from rabbits, and in this connection it should be borne in mind that rabbit's serum was poisonous to certain people. Injections were given in the back of the arm.

Mr. Torrey reported a series of cases of gonorrheal rheumatism treated with the serum during the past year, 55 in all. There were 39 acute and subacute, and 16 chronic cases. Of this number, 34 (61 per cent.) were cured by the serum. Of the remaining 21 cases, 12 were improved, and in nine there was no change. Of the acute and subacute cases, 39 in all, 31 were cured (79 per cent.); of the remaining 8, 3 were improved and there was no change in 5. The serum was of marked benefit in only a small percentage of the chronic cases, but of great benefit in the acute and subacute cases. In 28 the condition was monoarticular; in 27 polyarticular. They were of all degrees of severity and 18 had been treated before without any improvement. When the injections were given there was a rise in temperature of from one to two degrees, with slight pain in the head and back, especially in the chronic cases.

Dr. Joseph Collins said that arthropathies accompanied chronic or organic nervous diseases, and that Dr. Mitchell, Sr., had described the joint changes of tabes seventy-five years ago. All recognized in tabes and syringomyelia that from 8 to 12 per cent. of all cases developed painless enlargements of joints. Oftentimes in organic nervous disease, as of the peripheral nerves, such as a neuritis, there were changes in the joints, especially of the wrist and ankles, giving certain alterations named arthritis deformans, and such arthropathies were worthy of an adequate description in the literature. These arthropathies were not well marked in cerebral diseases. Dr. Collins also discussed arthropathies and hysteria. Of 10,000 cases on record, only two of hydrops intermittens were recorded which might be classified as chronic enlargement of the joints. Dr. Collins was loath to accept the classification as given by the reader of the paper.

Dr. Royal Whitman spoke of one minor form of joint affection, the overweighted joints. A patient weighing 200 pounds who should weigh 135 might have a so-called rheumatoid arthritis of the knees, no other joints being involved. Here the remedy was to reduce the weight.

Dr. Lovett, closing the discussion, said that the word rheumatism, as used by the general practitioner, should be avoided. All he asked for in the matter of classification was that they should have a provisional class for the unidentified cases until they were identified. The classification he presented was merely a provisional one.

SECTION ON SURGERY.

Stated Meeting, Held May 4, 1906.

Dr. John F. Erdmann, Chairman pro tem.

Bronchoscopy and Removal of a Foreign Body from the Right Bronchus.—Dr. Charles A. Elsberg presented a child who, thirty hours before admission to Mount Sinai Hospital, had swallowed a pin about one and a half inches long, its head going first. She immediately after began to retch, vomited bloody mucus, and complained of pain and discomfort in the chest. These symptoms disappeared after a few hours. She was kept on a fluid diet and the stools were carefully watched for the pin. There was no pain on swallowing, nor other symptoms. When admitted to the hospital there were some peculiar bleating sounds over the lower part of the right chest behind. The *x*-ray revealed the pin with its head downward in the fifth intercostal space, a little to the right of the middle line. Three days after admission Dr. Emil Mayer passed the bronchoscope, but could not find the foreign body. Dr. Elsberg then did a low tracheotomy, passing a moderately sized endoscopic tube through the tracheal opening and into the right bronchus. The pin was at once seen lying in the right bronchus. Its shaft could be followed upward for about one-half an inch until it became buried in the wall of the bronchus. All efforts to free the point of the pin were unsuccessful until he did as follows: The shaft of the pin was grasped with slender forceps as far away from the head as possible and the endoscopic tube then pushed down, the pin being firmly held by the forceps. Thus the head of the pin was freed from the wall and the shaft of the pin gradually bent into view, until the point was swept into the left bronchus. By repeating this procedure the pin was bent upon itself and, with the head and the point both pointing downward, could be grasped at the angle and easily extracted. A tracheotomy tube was then inserted; this was removed at the end of a week and the wound healed rapidly. Convalescence was interrupted by an attack of measles.

Dr. Elsberg presented another patient who had had a turkey bone in the right bronchus. Coughing persisted for weeks and with a mucopurulent expectoration. Very interesting signs were noted in the chest. Dr. Janeway made a positive diagnosis of foreign body. The *x*-ray examination was negative. There was a large amount of peribronchial exudation. Expiration began with an amphoric sound and ended by a hissing one. The temperature was irregular. Much flesh and strength was lost. Under chloroform anesthesia a low tracheotomy was done and the foreign body, a piece of turkey bone, was found in the middle one of the three branches of the right bronchus. There was no trouble experienced in grasping it with the forceps and removing it. Pictures were presented showing the position of the bone in the bronchus.

Laparotomy and Suture of Bleeding Duodenal Ulcer.—Dr. Elsberg presented this patient, a man, 31 years old,

who had had an operation performed for some gallbladder trouble. He came into the hospital with a long history of intestinal symptoms, tarry stools, etc. The physical examination revealed nothing. He complained of pain in the gastric region and tarry stools. Hemoglobin was 94 per cent. and dropped in four hours to 60 per cent., and by the evening of the same day it was 50 per cent. An operation was done at once for supposed duodenal ulcer. The gall-bladder and mass of intestines were bound together by adhesions and the duodenum was much infiltrated and opened into an ulcer. He attempted to bring the parts of the ulcer together, but the parts were too fragile. After operation the patient improved rapidly, but later there occurred a leakage of fecal contents. Two hours later he was again operated upon, but no ulcer was found, only a hole in the duodenum. The duodenum was immobilized according to Kocher's method and the transverse colon was then implanted upon the duodenum. The wound was closed with drainage. The wound healed well and there was no further leakage. The hemoglobin now was 85 per cent. The great fall of the hemoglobin made the operation justifiable.

Dr. JOHN A. HARTWELL reported a case of gastric ulcer occurring in a man 35 years old who was admitted to hospital the second time. He gave a history of bleeding for three or four months before coming to the hospital the first time. He remained three weeks and went out again much improved under medical treatment. After several severe hemorrhages he again entered and the hemoglobin was then 40 per cent. He was kept under observation for four or five days and was improving. After the sixth or seventh day the hemoglobin was 50 per cent. and no hemorrhages. There was no pain or other gastric symptom. That night he died, apparently from acute hemorrhage. At autopsy no ulceration or even suggestion of ulceration was found anywhere in the alimentary tract. Nothing was discovered to cause either the original bleeding or death.

Dr. JOHN F. ERDMANN said that he had had twelve or thirteen cases of perforating ulcer of the pyloric end of the stomach and in none was there any preliminary hemorrhage at all, no hemorrhagic evidences whatever.

Recurrent Sarcoma of the Outer Table of the Skull; Disappearance under X-Ray Treatment.—Dr. ASPINWALL JUDD presented this patient, a woman, with a recurrent sarcoma of the outer and beginning involvement of the inner table as well. Forty-two exposures (three a week) were made, using a high tube at a distance of nine inches. There were no burns and there followed a complete disappearance of the tumor. He did not claim a cure, only a disappearance of the sarcoma.

Dr. LEWIS GREGORY COLE discussed this case.

Tendon Implantation with Restoration of Function in the Hand.—Dr. JUDD presented a little girl who had had a suppurating wound involving the tendon of the communis. He cut down upon this tendon and found it retracted so that he could not bring the ends together. He then made an incision in the tendon of the indicis and stitched it to the communis tendon with silk, surrounding the parts with Cargyle membrane. There was complete immobility of the middle fingers of the hand; at present the movements were perfect. Passive motion was resorted to early.

Dr. REGINALD R. SAYRE congratulated the doctor upon the good results obtained.

Local Anesthesia in the Operative Treatment of Anorectal Diseases.—Dr. S. G. GANT read this paper. He said that since he had advocated local anesthesia in the operative treatment of minor affections of the lower bowel, 1,200 cases had been operated upon at the clinic, office, or home of the patient. Some of the operations were of minor importance, while others were of considerable magnitude. The conditions for which operations were performed embraced nearly all the diseases encountered about the rectum and anus. While local anesthesia could undoubtedly be successfully employed in a great many radical operations, he was convinced that it was not for the best interest of the patient to employ it to the exclusion of general anesthesia. The administration of a general anesthetic was imperative for all operative procedures in the upper rectum, and all extensive operations such as were required to remove large tumors or to relieve complete extensive prolapsus recti, complex, horseshoe, rectovesical, rectourethral, and rectovaginal fistulæ, very extensive abscesses, necrosis of the coccyx and sacrum, and strictures and congenital malformations above the internal sphincter muscle. General anesthesia was also necessary in operations for fistulæ, hemorrhoids, fissure, abscess, etc., complicated by other more serious rectal disease, when the local anesthesia did not permit the diseased tissues to be sufficiently exposed for thorough operation, when the areolar tissue was loose and allowed the solution to disseminate rapidly, and when a sufficient amount of the fluid could not be retained to cause pressure and blanching of the tissues. The above-named affections constituted but a small proportion of the total number of cases coming under the proctologist's care. The local anesthetics employed by the writer were, in the vast majority of cases, sterile water, eucaine, and cocaine. In the cases operated upon by the aid of water anesthesia, the anesthetization of the parts was produced by the injection of either a physiological saline or a plain sterile water. They were equally effective in producing anesthesia, and the pain caused by the distention was not noticeably more from one than from the other. The temperature of the water played no part so far as the anesthesia was concerned, but there was less discomfort when it was at the temperature of the body. The distention of the tissues with water had never caused sloughing in his experience. Postoperative pain was more severe and lasted longer with eucaine and cocaine than when sterile water was used. At present he employed eucaine and cocaine in strengths ranging from one-eighth to one-twentieth of 1 per cent. The technique was the same whatever the agent employed. The anesthetic should not be injected too suddenly or in a larger amount than was required, nor should the needle be made to enter one place and then another. When a linear incision was to be made the anesthetic should be slowly injected between the layers of the skin along the line to be incised, after which the needle should be pushed further in and the deeper tissues anesthetized. In divulsion of the sphincter muscle a one-tenth of one per cent. eucaine or cocaine solution was preferable to sterile water. In order to ascertain to what extent sterile water was being employed in operations about the rectum and anus, a letter was sent to members of the American Proctologic Society and a few other specialists, asking for the number and variety of cases operated upon, the results obtained, and their opinion of sterile water as a local anesthetic. A study of the letters received and a study of the statistics obtained, together with a large experience of his own, proved that plain or saline sterile water was a safe and reliable anesthetic, and that it had a wide range of usefulness.

Dr. JAMES P. TUTTLE said that his experience with this method had not been at all satisfactory and possibly he might have injected the water too fast. The pain in operating upon external hemorrhoids was very great, but not so excessive in operating upon internal ones. The injection of water or saline solution so distorted the parts that one could tell with difficulty what one was doing; the injection alone produced a tumor like a hemorrhoid. In dealing with moderate degrees of hemorrhoids, prolapsus, or fissures, he believed that local anesthesia was a very useful addition to surgical practices. But he could not indorse this method in operating upon fistulæ; all fistulæ, even of the simplest type, he believed, should be operated upon only under general anesthesia. It was safer to operate upon a patient at his home or in the hospital than to attempt to do so in the office.

Dr. Hill said that two years ago he started this method of local anesthesia at the Boston dispensary. There was no great choice between eucaine or cocaine solutions.

Dr. A. Ernest Gallant said that the differences of opinion regarding the effects produced by these various solutions might be attributed to the manner of introducing these drugs. If one got the solution under the skin, so raising the epidermis, anesthesia would result.

Excision of the Rectum for Cancer with Preservation of Normal Anus.—Dr. William C. Lusk showed twenty-five charts illustrating the anatomy of the pelvis relating to excision of the rectum, uterus, and part of the vagina. The studies were made with a view of determining the possibilities of a wider removal of the pelvic tissues in cancer of the rectum. The writer stated that though uncertain about the practical applicability of the proposed operation, anyway he felt he was making no mistake in furnishing this contribution to the anatomy of the pelvis, and the work might stimulate a train of thought for an improved operative technique in the removal of the rectum. The case reported had an anteriorly situated colloid carcinoma, its lowest palpable limit being one and one-half inches above the internal sphincter. The approach for the removal of the disease was both through the coccygeoperineal region and by a median celiotomy wound. The coccyx was removed, but the sacrum was not resected. The muscular coats of the bowel were sectioned below, just above the internal sphincter, and the inner coat, after having been shelled out of the anal canal, was cut off at about the pecten. The proximal end of the sigmoid was brought through the sphincters and sewed to the divided anal margin, a clamp being left on the bowel and retained there for thirty hours. The peritoneal reflection onto the uterus and the tissues attached laterally to the rectum were invaded, but below, the bowel was severed in healthy tissue above the internal sphincter. The bowel end sloughed, a vaginal fistula resulted, and the patient recovered with a stricture of the anal canal. The contractility of the external sphincter was not impaired, and the patient was comfortable up to the end of April, when, through neglect on her part, the stricture contracted. Dilatation relieved the immediate symptoms. All of the cancerous tissue was not removed. Statistics would seem to show that in about one-half the cases of rectal cancer the sphincter was not invaded. The contention for saving it where possible was mainly for the preservation of the pelvic floor. The importance of using clamps and cautery for the avoidance of infection in resecting the bowel was emphasized. An absolute necessity in operating in the pelvis through the abdominal incision was the Trendelenburg position. As a matter of operative technique, so far as a single trial on the cadaver had shown, it would seem quite feasible to commence the operation from above through a median abdominal operation, and complete the operation through the lower wound, either primarily or at a subsequent séance. In connection with the abdominal incision there arose the question of preliminary colostomy. If this was practised a subsequent abdominal incision would of course be interdicted. Illustrations were shown demonstrating how the middle hemorrhoidal (when present) and vaginal arteries, together with the branches from the third and fourth sacral nerves which joined the inferior hypogastric plexus of the sympathetic, could be tied close to the pelvic wall through the coccygeoperineal wound. The latter approach was laid open by a horseshoe-shaped flap over this region, followed by the removal of the coccyx and splitting of the levator ani in the median line. Illustrations also showed a method of separating the ureters from the sides of the vagina, which was done through the abdominal incision. It seemed that a systematic plan of tying the vessels of the mesosigmoid, when it was to be divided and mobilized, would improve the technique of the treatment of this portion of the bowel. There were two structures of the mesosigmoid which limited the distance to which the proximal end of the severed sigmoid could be carried. One of these was the entering vessels, and the other was the peritoneum. The chart showed how the intact sigmoid artery could prevent carrying the end of the divided sigmoid to a distance greater than the length of the vessel. Therefore to mobilize the end of the sigmoid this vessel must be divided. The restraining peritoneum should be cut on either side near the root of the mesosigmoid independently of the vessels, and should not be included within the grasp of any of the ligatures. In order to preserve the nutrition of the portion of the sigmoid to be mobilized it seemed that the principle could be laid down both that the entering trunks of the vessels should be tied, and that the peritoneum should be severed at the root of the mesosigmoid, so as to leave the vascular arches which should receive collateral circulation from above, attached to the freed portion of the bowel.

Wyeth's Amputation for Sarcoma of the Femur.—Dr. A. Ernest Gallant showed a specimen which was removed from a woman 23 years old. She fell and bruised her knee and later a diagnosis was made of either sarcoma or gumma. The radiograph indicated a fracture of the femur, and the limb was splinted. At the end of one month an incision was made and examination proved the tumor to be a mixed celled variety of sarcoma. Amputation was then performed by Wyeth's method. The case was of particular interest because the *x*-ray failed to show anything.

Dr. Lewis Gregory Cole showed an *x*-ray plate of the limb after removal which showed very distinctly where the normal tissue ended and the diseased tissue began. Dr. Cole also showed an *x*-ray picture of a benign sarcoma which was very clear and distinct, the lesion being readily detected.

Mastitis in the Aged.—Dr. A. Ernest Gallant showed two specimens, one removed from a patient 59 years old, the other from one 71 years old. Inflammation in both cases started in the region of the nipple. One consisted of an intracanalicular fibroma; the other was reported to be an intracanalicular fibroma with a general mastitis. Dr. Gallant said that cases of intracanalicular fibroma were rare.

AMERICAN ASSOCIATION OF GENITOURINARY SURGEONS.

Twentieth Annual Meeting, Held in New York City, June 1 and 2, 1906.

The President, Dr. F. Tilden Brown of New York, in the Chair.

(Special Report to the Medical Record.)

First Day—Friday, June 1.

An Apparently Healthy Child Born to Parents, Both of Whom Were in the Active Stage of Syphilis.—Dr. Alfred C. Wood of Philadelphia reported this case. Mrs. X., aged 28, housemaid, married three weeks, had a syphilitic lesion on the right half of the upper lip. There was general glandular enlargement and roseola. She left the hospital on June 24, after having been there for nearly two months, and at that time was taking pills of protiodide of mercury. The following May the patient was delivered of a perfectly healthy male child, weighing about eight pounds. The child had never shown the slightest evidence of anything but the most perfect health. He had been fed from the mother's breast, slept well, and had thrived as well as any child could. As this child had completed his thirteenth month without mishap, the likelihood of specific manifestations might be considered very remote. The husband suffered from syphilitic dactylitis. The only history that could be elicited from him was that about two years before he had had a sore on the left side of his lower lip, "inside and out." The sore was cauterized, after which it healed.

No history of secondary manifestations could be obtained.

Dr. L. Bolton Bangs of New York said that Dr. Wood had taken it for granted that the sore in the mouth of the man was the initial lesion. If that was the case, was the bone lesion not a rather early one, following the initial lesion in the mouth? He raised the question whether it was not possible that the woman acquired the syphilis from some other source.

Dr. George K. Swinburne of New York knew of no preparation of mercury which gave such a large proportion of bad results in the long run as protiodide of mercury. He thought mercury should not be given by way of the stomach. He cited an instance in which a mother was infected with syphilis at the seventh month of pregnancy and showed all the manifestations of the disease before the birth of the child, and yet that child never showed any syphilitic lesions at any time.

Dr. John Van der Poel of New York said that his experience with the protiodide corresponded with that of Dr. Swinburne. He had seen instances in which, after the administration of large doses of protiodide, secondary, and even tertiary lesions, had appeared. He advised injections of mercury, or else its use by way of the skin. For injection he preferred the biniodide to the cyanide of mercury.

Dr. E. C. Burnett of St. Louis said that, in regard to the case cited, he thought the father gave a clear history of syphilis. So far as the child was concerned, he thought it difficult to make a prognosis. Syphilitic lesions in the tertiary form were often developed during adolescence in which there was no history of infection.

Dr. Wood said that one point in regard to the husband's having infected the wife was that his lesion was on the left side of the mouth, while that of the wife was on the right side. He expressed surprise at the general condemnation of the protiodide of mercury. He stated that one of the most prominent syphilographers in this country claimed that he cured 95 per cent. of these cases with this salt of mercury.

The Antigonococcus Serum of Rogers and Terry in Epididymitis.—Dr. George K. Swinburne of New York read this paper, in which he said he had been led to experiment with this serum in the case of a man, 34 years of age, whom he had been treating for a primary acute attack of gonorrhea. The right knee became affected, and the patient, being unable to remain at home, was sent to Gouverneur Hospital. A week later he was completely cured so far as the knee was concerned. A little later the author saw this case reported in a current periodical, and learned that the rapid recovery was due to the use of antigonococcus serum. He had heard several who had used the serum in gonorrheal rheumatism express themselves as not being favorably impressed, and he had also heard that it was a failure in epididymitis. These failures were to be expected until further experiments had been made. Thirteen cases were reported in detail. To be effective the serum ought to be administered early in the course of the disease. Seven of his cases were treated within twenty-four hours of the beginning of the epididymitis. The trouble had lasted for from three to four days in four of the cases. Three of the patients received two injections, 24 and 48 hours apart. These made an apparently complete recovery within a few days, but, suffering a slight relapse, another injection was made. Two received two injections, four received three injections, three received four, and two received five. He had tried the injections in the abdomen, as was done at first, but preferred the back of the arm, which was previously scrubbed with bichloride and alcohol. Of course, the needles and syringe were carefully sterilized. In no case was the local reaction attended with any disagreeable sequelæ. There was no trace of the disease in three cases. In two there was a rather long, soft mass left about the epididymis. He concluded that the serum had exerted a distinct effect in all the cases, and that the disease was distinctly modified and the duration shortened. In several instances the recovery was remarkable.

Dr. L. Bolton Bangs of New York said he was somewhat skeptical in regard to the use of the serum. Even without the serum one could assure a patient that he would probably have but four days of pain, but one could not promise that the swelling would subside in that time.

Dr. Edward Martin of Philadelphia said that he could not tell from the paper what effect was occasioned by the injection of the serum. He did not think very favorably of sera, and said antidiphtheritic serum was the only one productive of much good.

Dr. Swinburne said that patients were free from pain in four days, and sometimes earlier if kept in bed, but his cases were all ambulatory.

Dr. Hugh H. Young of Baltimore said that it was probable that too little of the serum had been given. He suggested that larger doses should be given at once. The infection must be overpowered in the beginning to prevent further infection. He hoped that expectations regarding the efficacy of the serum would be fulfilled.

Dr. W. K. Otis thought these experiments a step in the right direction. He agreed with Dr. Young that larger and more frequent doses should be given at once.

Dr. Bransford Lewis of St. Louis took issue with Dr. Martin in regard to the inefficacy of sera in the treatment of disease. He had understood that the antitetanic serum had reduced the frequency of tetanus as well as its bad effects tremendously.

The Use of Ointments in the Urethra in the Treatment of Chronic Urethritis.—Dr. Hugh H. Young of Baltimore, after giving a brief history of the suggestions made during the past fifty years as to the value of medicated ointments in the treatment of chronic urethritis, showed an instrument which he had devised for depositing ointments in the urethra. The instrument which he had devised consisted of an outer tubular sheath somewhat more than a semicircle in extent. It was provided with a solid removable obturator corresponding to it in size. This was rotated in the outer sheath, and, when in a certain position, furnished a large trough to be filled with ointment. After filling the trough, rotation was continued until it furnished a closed, round instrument, the ointment being inside. After the instrument was inserted into the urethra, the obturator was rotated backward to its first position and the ointment was pushed out into the urethra. When the instrument was withdrawn the operator made pressure upon the glans and the meatus to prevent the ointment from escaping. The rapidity with which a large amount of sterile ointment could be introduced into the urethra, as well as the simplicity of the instrument, made it very satisfactory. It was a great convenience to have various ointments put up in collapsible tubes provided with long, nozzle-like attachments of metal, through which the ointment was deposited in a rope in the cavity of the instrument. The ointment could be sterilized by simply heating the nozzle.

Dr. Charles H. Chetwood of New York thought that there was no question but that there was a considerable number of cases of chronic urethritis that could be efficiently treated by the use of ointments and bougies. The objection to fluid applications was their uncertainty, but if they could be retained for a sufficient length of time their disadvantages were overcome. He had a little clutch, which fitted on the end of the penis, and this enabled the fluid to be retained two hours at a time, if necessary.

Dr. Bransford Lewis of St. Louis related his experience in making investigations regarding the use of ointment in these cases. He had used a hard rubber applicator, with a screw piston and soft rubber catheters, to make the introduction as easy as possible, and allow it to be retained.

He had experimented with lanolin and the other different bases as detailed. After two years his experience was so disappointing that he discontinued their use. He made use of an apparatus, a kind of sound which produced a massaging effect, with the application of the ointment.

Dr. Arthur T. Cabot of Boston thought the ointment treatment had been discarded long ago. He had used iodoform suppositories in certain cases, with an applicator left in the prostatic urethra. He had secured better results with aqueous solutions.

Dr. F. Tilden Brown of New York said that he was satisfied that there were certain cases of urethral disease that were benefited by medicaments with an ointment base. He related the various means that he had used in introducing the ointments. Finally he had used a preparation of a silver salt in lanolin ointment, from which he got firm adhesion to the sound of the ointment, which was not swept away by introduction into the meatus. He used some lubricant around the meatus. He was well impressed with the efficiency of this medication if it could be properly done. In chronic cases he thought a resolution of the strictures and a dissipation of the chronic discharges was brought about by a desquamation of the flat epithelium and a regenerative process.

The Surgical Treatment of Sterility in the Male.—Dr. Edward Martin of Philadelphia said that while sterility was sometimes the result of double epididymitis, this was the exception rather than the rule. However, there were a sufficient number of cases of sterility from this cause to justify an investigation and an effort to relieve the condition. It was with the general belief that the obliteration lay in the tail of the epididymis in conjunction with Drs. Carnet, Levi, and Pennington he had conducted experiments in order to determine the question as to whether or not by short-circuiting the vas and the head of the epididymis in cases of obliterating inflammation it might not be possible to provide a route by which the spermatozoa might escape. Dogs were used in the experiments, the vasa being ligated and cut on both sides a short distance from their epididymal origin. The proximal end was then split and sutured into an opening made into the head of the epididymis. A normal number of motile and seemingly healthy spermatozoa were observed. There seemed little tendency toward ultimate closure through cicatricial contraction. He did not have reliable evidence that these spermatozoa were fertile in dogs, and it might be that they underwent some developmental change in their passage through the epididymis. He related in detail the history of the first case operated upon.

Dr. Arthur Cabot of Boston considered Dr. Martin's paper an application of good common sense and good surgery.

Dr. Robert H. Greene of New York had seen a surgeon attempt to perform an operation of that type, and the difficulty was the small caliber of the vas. An attempt to inject fluid through the vas brought out the same difficulty.

Dr. Hugh H. Young of Baltimore had two cases of chronic prostatitis and seminal vesiculitis, with an obstruction at the epididymis, but they refused operation. He made pressure upon the seminal vesicles, and if the expressed fluid under the microscope showed large whorls of mucin, it could come from no other portion of the genitourinary tract except the seminal vesicles, and he felt certain that he had patent ejaculatory ducts. This would show that the obstruction was at the epididymis. The obstruction might be at the ampullæ, or higher up. He considered Dr. Martin's operation an advance in surgery.

Dr. Bransford Lewis of St. Louis said he did not consider himself a urethroscopist, but he had had two cases in which he could pass a soft, flexible sound, and catheterize the ejaculatory ducts and inject fluid into them as well, and that without any trouble and without inflammatory reaction. He used Swinburne's posterior urethroscope.

Dr. F. Tilden Brown of New York expressed himself as impressed with the value of this operation. In spite of Dr. Martin's statement that the operation was simple, he thought that it would be easy to make a failure of it. He had seen Dr. Martin perform the operation, and he felt that his timidity in undertaking it was fully justified. There were details in the technique, the bloodless approach to the vas, the necessity for special instruments, the placing of sutures for anastomoses, the snipping out of a piece of the epididymis, etc., which made him think that the operation could easily be bungled unless one had seen Dr. Martin do it. He thought it most desirable to find the point of occlusion, whether of the globus major or minor, or higher up.

Dr. Martin, in closing the discussion, said that he had not sounded the vas, because the operation being well started, this would only cause needless trauma, as there was no instrument small enough to go through the vas without traumatism. A proper diagnosis as to the cases suitable for the operation was important. It was possible that one might get some benefit from catheterizing the ejaculatory ducts.

Impressions of Genitourinary Work in Berlin.—Dr. H. H. Morton of New York related his experience of two months spent in the clinics of Berlin. He thought cases were more thoroughly studied, and reports and statistics more carefully kept, there than here. There were no snap diagnoses.

Second Day—Saturday, June 2.

Treatment of Prostatic Enlargement.—Dr. James Pedersen of New York said that his purpose in presenting this paper was to discuss what led up to prostatectomy, and what away from it. He considered the question as to when surgical intervention was advisable, and the operation of choice in a given case. In his opinion it was not possible to say categorically when surgical intervention should be advised until we had more detailed and searching statistics on both the radical and conservative sides of the question. He agreed with recent writers, who had entered a timely protest against excessive enthusiasm for operating, and there was a lack of anteoperation details. Whiteside, in 238 mixed cases, found really good results in only 30 per cent., a mortality in perineal prostatectomy of 20 per cent. in 36 cases reported by nine operators, a mortality of 8 per cent. in Murphy's 51 cases, of 5 per cent. in Young's 75 cases, and of 3 per cent. in Goodfellow's 75 cases. Five cases were reported in detail, as illustrative of points he wished to make.

Conservative Prostatectomy with Minimum Hazard.—Dr. Charles H. Chetwood of New York said that in presenting this communication it was not his object to set forth any novel technique, but simply to give the results of personal observation during the past year on a class of prostatic cases that were usually described as bad risks. As his results had been so strikingly satisfactory, he related the histories of these eight cases. He believed that had he not operated in two stages, most, if not all, would have succumbed. A summary of the cases showed that the ages of the patients were 80, 53, 79, 67, 69, 65, 70. The two in the neighborhood of 80 were very feeble, and were bad risks. There was evidence of advanced renal implication in one case. Three others were emergencies, having suffered for several days with acute retention. One of these had infiltration of urine into the prevesical region and two had intravesical hemorrhage. Three were more or less broken in health and neurotic. Complete radical removal of the prostate was done in all cases. Preliminary drainage was instituted in all but one case, where, on account of serious kidney complication, the galvanocautery technique was used. All up to the present time had done remarkably well. He laid particular stress upon the great value of formaldehyde gelatin as a local hemostatic. He had had

no serious hemorrhage since he had used it, and thought the postoperative conditions more comfortable. In employing the secondary operation, the parts, owing to circulatory decongestion and granulation, were much more accessible and the line of cleavage between the prostatic tissue and the capsular surroundings more easily separated. Hemorrhage was unimportant, shock trifling, the operative period minimized to a few minutes, and postoperative toxemia was almost entirely eliminated, as the patient during the postoperative period had become inured to his own secretions and his normal resistance fortified.

A Case of Stone in the Ureter, with Remarks on the Methods of Operating in Such Cases.—Dr. Paul Thorndike of Boston reported the case of a man who had had several mild attacks of renal colic within a period of two years, the pain on the right side extending from the kidney region to the penis. Physical examination revealed nothing. The *x*-ray revealed a stone, which was supposed to be in the bladder, but the searcher could not find it. A suprapubic operation was done, and a long probe was passed into the ureteral orifice on the right side and a stone contact was made. The stone was dislodged and the patient made an uneventful recovery. Seldom was stone found in this situation, the lower end of the ureter, without making known its presence by symptoms referable to the bladder.

Dr. Arthur T. Cabot of Boston said that he had always regarded the perineal route of performing prostatectomy as the safer, and was surprised at the statistics given. The death rate after perineal prostatectomy was 4 or 5 per cent. at the outside, while for suprapubic prostatectomy it was about 10 per cent. He considered the relief of small prostates through the perineal route a great triumph. He said that he understood that in the case of prostatism reported the patient was passing uric acid crystals, and that might account for the prostatic irritation. The preparation of the patient for prostatectomy was of the greatest importance. He mentioned several cases where preliminary drainage had brought about marked improvement and put the patient in condition for operation.

Dr. Hugh H. Young agreed with the reader of the paper that we were in need of carefully worked up statistics. He had just finished an analysis of 150 cases of prostatectomy, which would be published in the next volume of the Johns Hopkins Hospital reports, and these analyses were very voluminous. Last year's work showed only one death in a large number of cases, and that man had a badly infected kidney before operation, so that he had had practically no bad results from perineal prostatectomy so far as fatalities were concerned. Out of 164 patients that were using the catheter when they entered the hospital, only one was using it after operation. In 64 cases with complete retention of urine, there was not now one case of complete retention. He did not believe in paralysis of the bladder; he had seen so many cases with residual urine of over 1,000 c.c. that now had tonic bladders that he had dropped the term "paralysis of the bladder" from his vocabulary. Of 145 cases of hypertrophy of the prostate that could be called benign, only 5 could be said to have given imperfect results. Most of these had the small cirrhotic fibrous prostate. The bad results were because he did not appreciate enough the cicatricial contraction at the prostatic obstruction. The claim could be made that through the perineal route all of the obstruction could be removed absolutely. He did not consider it just to blame perineal fistula on the perineal prostatectomy. In the past two years he had 102 cases, and only four cases of perineal fistula followed, and two of those were quite recent, and would probably heal.

Dr. Edward Martin of Philadelphia said that he had had some success in using dilators in the case of small prostates with contracted ring. He had obtained complete relief by dilating this contracture. There was but little bleeding, and the relief lasted for months.

Dr. George K. Swinburne of New York said that in considering the statistics of the results of operation it should be borne in mind that there were a large number of cases which could not, or would not, be operated upon. He had a patient who had used a catheter for twenty years. The history of this case was given, showing how prostatectomy had been avoided and the man kept comfortable by draining the bladder and performing a suprapubic cystotomy.

Dr. Bransford Lewis of St. Louis thought the conservatism of both papers was highly commendable. He referred to the use of the retained catheter instead of the boutonnière; in his experience this had been of great value. Bladder drainage would not suffice in cases of calculi. Here it was proper to give some preparatory treatment; then, under local anesthesia, the bladder could be opened and the calculi taken out. He cited two cases in which he had followed this plan.

Dr. L. Bolton Bangs of New York thought the important question was not what operation to choose, but whether to operate or not. We should not decide to operate because a man had retention of urine, with possibly a slight enlargement of the prostate. Of late a great many people had been preserved from radical operation, and he thought the desire of the laity to be operated upon was less than formerly. He was a believer in the preparatory care of patients before operation. He had resorted to perineal drainage only in exceptional cases. In opening the bladder, where obstructive symptoms were present, he had made it a rule to place his finger in to determine whether there was any fibrous exudate that produced obstruction. He sometimes dilated these with the forceps, and sometimes with the fingers, and this occasionally gave relief.

Dr. Pedersen said that in regard to Dr. Cabot's criticism of the death rate, as he had reported it, he would say that his paper had aimed to take an analysis of the average results as found in reports coming in to him. Therefore, the death rate of certain operators was better than the average. It was important that we should know definitely the end results of these operations; we should know about the sexual function, the bladder function, etc. It was undoubtedly true that crystals in the urine would account for symptoms of prostatism. In regard to the question of rectal fistula, he said that the reports were those of Albarran; that in this country we saw few fistulas due to prostatectomy in the hands of competent men.

Dr. Chetwood said that he did not want to be understood as favoring long drainage or as recommending proceeding with enucleation and other procedures without using the catheter. He did not think the catheter was able to do what perineal drainage would.

Does Syphilis in Some Cases Spontaneously Abort in the Primary Stage?—Dr. R. W. Taylor of New York said that he had for a number of years been making a study of this question. It was one of the canons of medical belief that a chancre was always followed by general syphilis. A review of statistics showed that out of 1,291 cases of general syphilis a chancre had preceded in all but 22. He had become convinced that spontaneous abortion of syphilis in the primary state did sometimes occur. He reported four cases in detail which had occurred in his experience, in which the patients had undoubtedly Hunterian chancres, and yet who never developed general syphilis. In these cases he was very sure that there was no previous history of acquired or hereditary syphilis. He had noted altogether ten cases reported by seven observers. Burnett thought it altogether possible that these sores were typical chancres, and through some influence modifying the virus the disease was checked in the primary stage. He was of the opinion that some of the cases reported as successful excision of chancres were instances where the disease had aborted in the first stage. In the study of such cases we should acquaint ourselves

as far as possible with the patient's history and with that of his immediate progenitors. An antecedent-acquired syphilis might be followed by chancriform-relapsing lesions which might mislead the observer. While hereditary syphilis might confer, and usually did confer, immunity on its bearer, it was possible for the hereditary disease to wane, and immunity to be lost.

A Case of Hereditary Syphilis.—Dr. Taylor also reported this case. He said that a man of thirty years had presented himself with syphilis, and when told what ailed him, said that no doubt his wife was also infected, as she had a sore on the vulva and a generalized rash. She was in the eighth month of her first pregnancy, and had probably been infected when about five and one-half months pregnant. Neither parties took any true antisyphilitic treatment. An apparently healthy male child was born at term, and was scrupulously watched for months, but nothing abnormal was found. The child had but little antisyphilitic treatment, as the parents were not particularly careful on this point. The child grew apparently normally, but the second teeth were of the Hutchinson type. At the age of four years periostitis of the right humerus and synovitis of the right knee developed. Under mixed treatment and the local use of mercurial ointment the pains ceased, the articular lesions subsided, and the child entered into very satisfactory health. This case, though unusual, was explicable in the light of the fact that it was now conceded that there was a virulent form of hereditary syphilis, in which the old-time classic features were marked, and there was a dystrophic form, in which there was slight ill health at times, scarcely appreciable, and yet dystrophic changes in the bones, teeth, ears, eyes, brain, etc., might occur.

Dr. Wood Ruggles of Rochester, N. Y., related the instance of a man forty-five years old, who had had as characteristic a chancre as he had ever seen. He had pronounced adenopathy in both groins. No roseola had appeared up to four and one-half months after the infection occurred.

Dr. Edwin C. Burnett of St. Louis, whose patient Dr. Taylor referred to in his paper, said he had been able to hear from him for the past seventeen years, and he was hale and hearty and the father of perfectly healthy children.

Dr. N. B. Carson of St. Louis thought that before arriving at definite conclusions we should investigate the source of infection, and see if the case really was one of syphilis, as sores upon and about the genitals often closely resembled chancres.

Dr. George K. Swinburne of New York said that when he had been interne at St. Luke's Hospital he had seen many cases that passed as true chancres which were followed by no secondary sequelæ except the adenopathy. He knew of a case where chancre was apparently not followed by secondary symptoms. Seven years later one side of this man's body became paralyzed, and he was placed under mercurial treatment. He partially recovered, and six months later the same thing occurred to the other side of his body, and he partially recovered from that also. This man evidently had syphilitic lesions late.

Dr. James Pedersen of New York cited two cases, in which Dr. Bangs had concurred with him in diagnosis, and which seemed to have developed no secondaries. He agreed with Dr. Taylor that there was a spontaneous resolution or cure in each case.

Dr. A. C. Wood of Philadelphia said the question arose whether or not the child was refractory to the poison of syphilis, and also had these patients inherited sufficient of the poison to render them immune, and yet not enough to show during life.

Cyst of the Prostate.—Dr. Arthur Tracy Cabot of Boston presented this paper. He classified this rare condition as follows: (1) Echinococcus cysts, of which Belfield had found but three authentic instances originating in the prostate. (2) Retention cysts due to distention of the occluded prostatic glands. (3) Cystic dilatation of the utricle, a condition occasionally found in children. (4) Cysts or cystic cavities might form in connection with cancer of the prostate. He reported a case belonging to class 4. An operation was performed through the rectum for a prostatic swelling simulating an abscess. As the patient succumbed to a pyelonephritis, an autopsy was possible, which revealed a cancer of the prostate in an early stage. The second case reported was probably one of retention cyst. The patient recovered, so the pathology could not be studied. In this case cystoscopic examination showed projections from the prostate to the left and behind the urethral orifice. A projecting tumor on the left side of the internal meatus had a translucent appearance, with few vessels on its surface. On opening the bladder this tumor was found to be about the size of a cherry, projecting well into the bladder and against the urethra, which it tightly closed. When it was seized by the forceps it collapsed. The wall of the cyst was cut away and the interior seared with the paquelin cautery. The fluid was lost. This patient made a good recovery. He thought this case could have been dealt with through the urethra with a Bottini cautery. Such cysts were extremely rare, though cystic dilatations of these glands of insignificant size were of common occurrence in old prostates.

Dr. Robert H. Greene of New York referred to the extensive pathological work done by Dr. Harlow Brooks and himself in their endeavors to find a cause for prostatic hypertrophy; in this work they ran across several cases of retention cysts, and he believed the same process was at work in these various conditions met with clinically in the prostate.

Some Remarks on Litholapaxy.—Dr. W. K. Otis of New York made this contribution, illustrating his remarks with blackboard demonstrations. He also presented many instruments.

A Case of Litholapaxy.—Dr. Edward L. Keyes reported this case. The man, forty-five years of age, gave a history of syphilis twenty years before. Dr. Van Buren had diagnosed the case as locomotor ataxia, and Dr. E. L. Keyes, Sr., had confirmed the diagnosis. Mixed treatment was pushed for a while. He used a catheter once a week, but did not irrigate or inject anything into the bladder. The urine gave no evidence of neoplasm. It was acid purulent brothy, and had a specific gravity of 1022. The pneumaturia ceased, and there was some grit passed from the urethra. He began to have pain in the region of the left kidney. In 1895, when he reached complete retention, a litholapaxy was performed, and a uric acid stone, with a phosphatic covering, about the size of a pigeon's egg, was removed. More phosphates were crushed six months later. In 1897 eight more phosphatic stones were crushed and washed out, and in 1898, six more. In 1900 a one and-a-half dram stone was washed away. In 1904 the *x*-ray showed tuberculosis of the body of the last dorsal vertebra. This was the cause of the so-called ataxia. In 1905 he passed a small stone through his catheter, and in March, 1906, 158 stones were washed away in twenty minutes without crushing. Their total weight was two drams. At the end of twenty-four hours the patient was apparently as well as ever. This case was the third in which he had known a competent *x*-ray man to overlook stones in the bladder.

Dr. Arthur T. Cabot of Boston reported a case of multiple calculi occurring in a man upon whom he operated several times, removing a large number of stones. On account of this tendency to stone formation or reproduction, he was advised to have his bladder washed out once a fortnight with good results.

Dr. F. Tilden Brown of New York said that with the knowledge that the stones were urate of soda or urates mixed, it was fair to presume the *x*-ray would show

nothing. He reported the case of a patient with a pure uric acid stone; excellent plates were obtained by Mr. Caldwell, but they portrayed nothing.

Some Cases of Kidney and Ureteral Stone.—Dr. George K. Swinburne of New York reported these cases. In Case I. he suspected stone of the right kidney. Cystoscopic examinations revealed nothing, and an *x*-ray picture was likewise negative. At operation a small, irregular calculus of lime was found in the extreme upper pole of the kidney and removed. Several attacks of oxaluria followed, which were always cleared up by dilute nitrohydrochloric acid. In Case II. examination showed a perfectly normal bladder and the mouths of both ureters perfectly normal in appearance. The posterior urethra was somewhat congested, and there was a slight nodule in the epididymis on the right side. About a year later this case was operated upon for stone in the kidney, and some time later cystoscopic examination showed involvement of the mouth of the right ureter. The calculus was removed extraperitoneally, and was a large oxylate of lime stone. This patient also had several postoperative attacks, probably due to oxyuria. Case III. was one of stone of the kidney, as shown by the *x*-ray. Case IV. was also one of renal calculus, revealed by the *x*-ray. In Case V. the patient had been under treatment for some time; the *x*-ray and cystoscope failed to reveal anything. Finally, after an exceedingly acute attack of pain, cystoscopic examination under ether showed the right uretheral orifice contracted on the face of a projection as if it were pushed forward, there being a pocket to the inner lower side formed by the projecting bladder wall with the intramural portion of the ureter. He thought there was a stone lodged in the lower end of the ureter; the *x*-ray picture showed three small shadows in the region of the left ureter. An unusually difficult exploratory suprapubic cystotomy was performed. The conditions were found exactly as in the cystoscopic examination, but no calculus could be found. The ureteral orifice was so contracted that nothing could be made to enter. A fine probe always impinged at the orifice, the bladder wall would yield, and the urine could be seen welling up from the orifice. There was a pouch to the inner side of the ureteral orifice fully an inch deep, running under the ureter as it passed through the wall. A thick cicatricial band could be felt curving upward and inward, due to inflammatory infiltration or to continued muscular spasm. As there seemed no prospect of accomplishing anything, the wound was closed, leaving a suprapubic tube for drainage.

The Diagnosis of Renal Colic.—Dr. Edward L. Keyes, Jr., of New York did not discuss the familiar phenomena of renal colic, but endeavored to show that, though renal colic was the cardinal symptom of renal stone, severe and typical colic might occur from other causes. These causes might usually be distinguished by the means ordinarily at hand. The locality of the pain usually pointed to that of the stone. It also occurred on the same side as the affected kidney. He had known cases where the presence of frequent and painful urination was the only symptom of renal stone. During the past few years he had come in contact with a number of patients in whom other conditions—genital, urinary, intestinal, etc., produced symptoms suggestive of renal colic. He related the history of one case, in which the renal colic was evidently due to gouty disposition, while in some cases it seemed that showers of crystals were caused by digestive crises. He cited a case where proper diet and hygienic conditions had relieved a patient of attacks that had persisted from childhood. There were some cases entirely due to intestinal derangement without any disorder of the urinary organs. He reported a case in which the renal colic was due to prostatitis and vesiculitis, and one neurotic case which began as a pyelonephritis and wound up in a series of neurotic disturbances. No attempt had been made to cover every possible condition that might cause renal colic. As the gall-bladder cases were not confusing he had not spoken of them.

Dr. Bransford Lewis of St. Louis said that he had learned not to depend upon the *x*-ray for diagnosis, whether the results were positive or negative. He reported a case in which there were three ureters, giving three urines; the ureter on the right side was normally situated, while the two ureters on the left side ran to the two poles of one kidney. One ureter was infected with gonorrhea, while, strange as it may seem, the others were not.

Dr. Francis R. Hagner of Washington reported the case of a young man who relieved his colicky pain by placing his buttocks on the bed and his head on the floor, and then taking deep inspirations. Following this relief there would be a copious flow of urine. This patient had a chronic seminal vesiculitis on both sides, a chronic prostatitis, with the prostatic fluid filled with pus. An oxalic stone was revealed by the *x*-ray and removed successfully. Ureteral catheterization was tried in this case, but failed to reveal the stone.

Dr. Arthur T. Cabot of Boston reported two cases in which the diagnosis rested between ureteral stone, ureteral hemorrhage, and appendicitis. He also presented the largest stone he ever saw removed from the lower end of the ureter; it weighed 190 grains, and was found from one to one and a half inches above the bladder in a woman. He said he had ten cases of ureteral stone, and eight of them were operated upon, some per vaginam.

Dr. George K. Swinburne of New York reported cases showing that external manipulation would often cause contraction of the ureters and the passage of ureteral stones. Firm manipulation over the loins and side, if a reasonable amount of delay was permitted, would often cause the passage of ureteral stones.

Dr. Bransford Lewis of St. Louis said that when calculi were situated at the lower end of the ureter he could, through the operative cystoscope, introduce a dilator, dilate the lower end to two or three times its caliber, and remove the stone with a specially devised forceps.

Officers Elected.— *President*, Dr. W. K. Otis of New York; *Vice-President*, Dr. Harvey G. Mudd of St. Louis; *Secretary*, Dr. John Van der Poel of New York; *Member of Council*, Dr. Hugh H. Young of Baltimore.

Habitual Constipation in Children.—Luigi Concetti divides the forms of constipation into three groups according to their etiology, the alimentary, functional, and anatomical, and says that the proper treatment is the finding and removal of the cause, using at the same time whatever palliative treatment is indicated by the symptoms. Enemata he uses only temporarily, with glycerine or soap, to soften deposits in the rectum and lower bowel. Massage and laxatives, with proper diet, are most useful. The alimentary form may arise from deficiency in quantity or quality of nutrition, from vomiting, or from too rich food. The remedy is the change of nurse, or such treatment of the mother as to make her milk suitable, or the addition of mixed feeding. Vomiting may be combated by change of food or of nurse. When resulting from spasmodic stricture of the pylorus, vomiting must be treated by relieving the intestinal catarrh that causes the spasm. If the stenosis is organic treatment is of little avail. Functional constipation results from atony of the intestine, and follows inflammation of intestine or peritoneum, cerebral disease, or bad nervous condition. Easily assimilable food should be used, massage and electricity, enzymes to increase digestive activity, and regular habit of defecation be encouraged. The anatomical form arises from congenital malformation, stricture, tumor, too long, or abnormally large intestine, or colon, or fissure of the rectum. Such forms may require surgical interference.—*Rivista Critica di Clinica Pediatrica.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Nov. 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	January 7
Arkansas*	J. P. Runyan, Little Rock	Little Rock	January 7
California	Chas. L. Tisdale, Alameda	San Francisco	Dec. 18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	January 1
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Nov. 13
Delaware	P. W. Tomlinson, Wilmington	Dover	Dec. 11
Dis. of Col'bia	W. C. Woodward, Washington	Washington	January 10
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	
Georgia	E. R. Anthony, Griffin	Atlanta	
Idaho	J. L. Conant, Jr., Genesee	Lewiston	April 2
Illinois	J. A. Egan, Springfield	Chicago	
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October 23
Iowa	J. F. Kennedy, Des Moines	Des Moines	December 11
Kansas	T. E. Raines, Concordia	Topeka	February 12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	
Maine	Wm. J. Maybury, Saco	Portland	Nov. 13
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec. 12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	November 13
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	January 7
Mississippi	J. F. Hunter, Jackson	Jackson	May 14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov. 26
Montana*	Wm. C. Riddell, Helena	Helena	
Nebraska	Geo. H. Brash, Beatrice	Lincoln	Nov. 7
Nevada	S. L. Lee, Carson City	Carson City	Nov. 5
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January —
New Jersey	J. W. Bennett, Long Branch	Trenton	June 18
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec. 3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January 29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May 1907
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	January 1
Ohio	Geo. H. Matson Columbus	Columbus	Dec. 11
Oklahoma*	J. W. Baker, Enid	Guthrie	
Oregon	B. E. Miller, [illegible]	Portland	January 1
Pennsylvania	N. C. Schae[illegible] H[illegible]	Philadelphia, Pittsburg	Dec. —
Rhode Island	G. T. Swarts, Providence	Providence	January 3
S. Carolina	W. M. Lester, Columbia	Columbia	June 1907
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	January 9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May, 1907
Texas	T. T. Jackson, San Antonio	Houston	
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	January 7
Vermont	W. Scott Nay, Underhill	Montpelier	January 8
Virginia	R. S. Martin, Stuart	Richmond	Dec. 11
Washington*	C. W. Sharples, Seattle	Spokane	January 2
W. Virginia*	H. A. Barbee, Point Pleasant	Clarksburg	Nov. 13
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January 8
Wyoming	S. B. Miller, Laramie	Cheyenne	December 5

*No reciprocity recognized by these States.
†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Virginia.—At the June examination there were one hundred and seventy-nine applicants. Of this number one hundred and four passed the examination, twenty-four failed, forty-seven took only a partial examination, and four withdrew from the contest. At this meeting it was agreed by the Medical Examining Board of Virginia to enter into reciprocity with the Regular State Board of Examiners of Georgia.

North Dakota.—Upon licenses upon examination, and bearing date of July 1, 1905, or later, North Dakota reciprocates with the following States: Maine, Vermont, Michigan, Illinois, Wisconsin, Iowa, and Wyoming.

Indiana.—The Supreme Court of this State holds that the State Board of Medical Examiners is within its rights in revoking a license for gross immorality.

California.—Among the rules adopted by the State Board of Medical Examiners, in August, provision is made for other than the ordinary test by printed questions. Thus there may be identification of microscopical or gross pathological preparations, clinical examination of patients, or any other practical work. But in all such cases the questions must be answered in writing, in order that the identity of the applicant may not be revealed to the examiner. In order to pass, in the State of California, applicants must obtain an average of at least 75 per cent., and must not fall below 60 per cent. on any one subject.

New York.—In an article on "Reciprocity in Medical Licensure" in the *New York Medical Journal* of October 13, 1906, Dr. Albert Vander Veer claims that "it can be said without fear of successful contradiction that to-day the New York statutory requirement for admission to the practice of medicine is clearly equal to the highest required by any State or Government in the civilized world."

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending October 13, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	390	160
Diphtheria	205	22
Measles	50	2
Scarlet Fever	73	1
Smallpox	—	—
Varicella	9	—
Typhoid Fever	113	15
Whooping Cough	33	11
Cerebrospinal Meningitis	5	4
Malarial Fever	.....	.....
Totals	878	224

Intermittent Claudication, with Report of a Case.—Johann Flinterman presents the history of this interesting case. The patient is a married man forty-one years old, a native of Polish Russia. For years he has complained of weakness and pain in the lower extremities, first in the left and then in the right. These symptoms were not constant, but were most marked after overexertion, either standing or walking. After rest they would disappear for quite a while, only to appear again after overexertion. Finally, however, the intervals between them having become shorter and shorter, the pain and weakness became constant, even when the patient was resting. There were signs of imperfect nutrition of the parts, the foot becoming stiff and cold. Signs of insufficient blood supply were manifested. Impairment of motion and sensation became very intense. Finally gangrene appeared at the most peripheral parts. A condition developed showing a change in the blood vessels, such that pulsation could not be felt in some of the main arteries of the extremities. The patient at an early age was exposed to changes in temperature and to overexertion. He had early begun the use of alcoholic stimulants and tobacco. After amputation, examination of the blood-vessels showed an endarteritis obliterans. The writer believes that the disease is after all not so very rare.—*Detroit Medical Journal*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 13, 1906:

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
Colorado, General	Aug. 1–31	30	..
Kansas, General	Aug. 1–31	29	..
Louisiana, New Orleans	Sept. 22–29	3	..
New York, New York	Sept. 22–29	1	..
North Carolina, General	Aug. 1–31	12	..
Ohio, Cincinnati	Sept. 29–Oct. 5	1	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Aug. 18–25	3	..
Canada, Winnipeg	Sept. 22–29	2	..
Chile, Iquique	Aug. 18–Sept. 1		Present
India, Calcutta	Aug. 11–18	..	2
Italy, General	Sept. 13–20	3	..
Russia, Odessa	Sept. 8–15	1	..

YELLOW FEVER.

Costa Rica, Limon	Sept. 25	1	..
Cuba, Habana	Oct. 5–10	1	1
Santa Clara Province	Oct. 5–11	2	1
Mexico, Merida	Sept. 23–29	4	4
Tuxtepec	Sept. 23–29	1	..
Vera Cruz	Sept. 23–29	..	1

CHOLERA.

China, Shanghai	Sept. 24–Oct. 7	..	87
India, Calcutta	Aug. 11–25	..	29

PLAGUE.

Egypt, Alexandria	Sept. 14–19	3	1
Suez	Sept. 14–19	7	4
India, General	Aug. 11–18	1937	2113
Calcutta	Aug. 11–25	1	25
Japan, Osaka	Oct. 10		Present
Persia, Seistan Province	June 23–July 27	23	37

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HOSPITAL REFORM IN A NEW LIGHT.*

BY HENRY S. STARK, A.M., M.D.,

NEW YORK.

THE trend of current medical events indicates very plainly that the next few years will witness a new era in hospital management through the introduction of certain innovations which will make the old régime look like ancient history. The illuminating papers read last winter at the medical societies, and the lively discussion they elicited, which later found its way into the columns of the lay press, bore eloquent testimony to the dissatisfaction that exists in the profession and among the laity with the management and the administration of our hospitals. These articles foreshadowed certain changes, which are now in their incipient stage, but which are bound to be inaugurated in the near future.

The wastefulness, the yearly deficits exhibited in the financial statements, the extravagant architecture which drains the sinking funds, the cry of "no room," the tendency on the part of a few men in the profession to arrogate to themselves so many prerogatives connected with their positions, as virtually to make these institutions their branch offices, so to speak, and thus to create a "medical trust." These were some of the facts brought to light in the discussions of last winter.

Already the medical and lay boards have certain reforms under serious consideration by virtue of which old traditions will be wiped out and be replaced by methods inspired by the modern spirit of research, and which are intended to adapt themselves to the constantly varying phases of modern society, and to this age of progress and broader thought. And I am not treading on doubtful ground when I venture the prediction that if the pace set be maintained there is no telling to what bounds this radicalism is destined to reach, nor can we predict how far-reaching its influence will be on medical education and medical schools.

Although, unfortunately, this movement for hospital reform has been allowed to smolder, nevertheless public sentiment is overwhelmingly in its favor to-day; it is a vital issue in medical thought and is bound to bear results once the public becomes acquainted with the different phases of hospital management, and with the weak points of the system.

At the outset I wish it to be understood that I am not arraigning our hospital system, nor do I wish to convey the impression that neither progress nor improvement has been made within recent years. I frankly acknowledge that many reforms have been instituted lately, and I know of still others that are in contemplation or in progress. What I allude to is the fact that under existing conditions the greatest efficiency of service is not assured, nor are the many services that a hospital can render to the public, and to the medical profession, available as matters stand to-day.

In many respects hospitals are conducted on the medieval lines laid out when they first were created, and thus their sphere of usefulness has not continuously improved in order to meet exigencies of modern industrial and social life. For convenience of this paper, I have made the following classification of hospitals: Firstly, a class having formal denominational connections, or which require their governing bodies to belong to a specified denomination or nationality; secondly, hospitals controlled and supported by the state or municipality; thirdly, hospitals connected with medical seats of learning; fourthly, hospitals whose governing bodies are non-sectarian and are supported by voluntary contributions, and fifthly, a number of institutions of an eleemosynary character, which fall below the modern standard of what hospitals should be and are therefore not considered in this paper.

A word concerning the third class, namely, hospitals connected with medical schools. It is very apparent that such institutions are to all intents not primarily places for the healing of the sick, but are subsidiary instruments for medical education and clinical instruction. One of the functions of such a hospital is to furnish material and subject for study both for the matriculants and the members of the faculty. Of necessity such hospitals must first consult the interests of the student-body rather than that of the indigent sick, for it is upon the revenue derived from the former that the life of the institution depends. Thus we have a type of hospital which savors more of commercialism than of humanitarianism, and therefore it becomes a question of economic and civic interest whether such hospitals are properly entitled to municipal support. In this city we have several notable examples of such institutions, and it is a well-known fact that for a number of years, whenever the city's budget was made up, they found it necessary to have representatives appear before the Board of Estimate and Apportionment to oppose the sentiment against their securing a share of the city's bounty.

On the part of these "college hospitals" it was claimed that they provided and cared for a quota of the indigent sick of this city, and consequently were entitled to a certain appropriation. On the other side, it was argued that while these hospitals did treat some of the city's poor, it was done not from purely charitable motives, or from an unselfish disinterestedness, but it was a question of personal gain and aggrandizement. These institutions furnish facilities for the reception of

*Read at the September meeting of the Metropolitan Medical Society.

a limited number of patients who are able to make compensation for the treatment they receive; but the revenue thus derived is not appropriated, as far as I know, for the general uses of the hospital, that is for the relief of the sufferings of that class which is admitted free, but it finds its way into private channels. Such hospitals partake, in this respect at least, more of the nature of private or pay hospitals for the physicians connected with them, who contribute nothing of the incomes derived from them towards the maintenance of the hospital. Here we have the unique spectacle of a private hospital, which yields a handsome revenue to the members of the faculty, asking for an annual appropriation to help maintain it, when in reality its main purpose is intended as a clinical feeder for the students and to furnish material for operating and demonstrating.

Regarding hospitals supported by the city or State, it is to be noted that these institutions may be made more useful in many ways. The treatment of the sick poor should not claim their attentions alone. They should become centers for the medical education of the masses, where the people could receive instruction in the rules which govern health and prevent disease. The hospital should be made an auxiliary to the schoolhouse; in the former the care of the body should receive attention just as in the latter the training of the mind, does. The services rendered to the public by an up-to-date hospital should no longer be summed up in the mere statement that it administers to the sick of the community; the modern hospital can be made to have a larger range of usefulness, and thus render a greater service by providing opportunities for instructing the masses in the laws governing health, in sanitary living and in the prophylaxis of disease. I therefore make the suggestion to the metropolitan hospital boards and to our municipal authorities that a modest beginning be made on the lines here indicated; that provision be made for delivering lectures at one of our larger hospitals during the winter months on questions relating to the prevention of disease, and conducted in such wise as not to interfere with the general routine work of the hospital. I am confident that this innovation would be hailed with such satisfaction as to rival in popularity the lectures held under the auspices of the Board of Education. In our own city and elsewhere there are no opportunities offered to the people for such a practical and necessary education, although the need of it is nowhere so imperative as it is among the members of the younger generation, who are growing into manhood and womanhood, ignorant of the dangers that menace their future health and happiness. As an object lesson in the prevention of communicable diseases this feature would prove a great blessing. It certainly is a misfortune that our schools and universities should be so woefully incompetent to supply such a need. Such lectures might be delivered under the auspices of a hospital by selected members of the medical staff, but not necessarily within the hospital itself.

The utilization of hospital facilities for purposes of instruction could be advantageously extended by appointing to the house staffs a larger proportion of graduates than is now the rule. A study made by me of the number of graduates in 1906 of the leading medical schools in New York shows that about 30 per cent. secured hospital appointments in large general hospitals. Of the remainder about 50 per cent. secured positions in minor institutions in which, however, the facilities for obtaining a practical knowledge are so inferior as scarcely to compensate a beginner accepting an interneship of a few years. It appears, therefore, that about 50 per cent. of medical graduates are not sufficiently equipped to practise their calling conscientiously and with justice to their clientele. And yet the clinical facilities in this city are well-nigh inexhaustible.

There are in the Boroughs of Manhattan and the Bronx, all told, about sixty hospitals, of which about one-half are devoted to the treatment of general diseases, the other half to the treatment of special diseases and conditions. Of the general hospitals, about seventeen have a capacity of over one hundred beds, and approximately there are about six thousand free beds in these institutions. A study of these figures in connection with the number of semi-annual appointments made on the house staffs, makes it very evident that in many of the general hospitals, the number on these staffs could be materially and profitably increased, and thus suitable provision could be made for a larger number of our medical graduates. My figures make it evident that this increase could be carried out without impairing the service. All that is required is to make suitable house provision for such an augmented staff and to reapportion the inmates accordingly. True the economies of the hospital would suffer, but then retrenchments could be easily enforced in other directions whereby the balance sheet would not show a deficit. A hospital with a capacity of two hundred beds, could be made to accommodate a house staff of eight to ten, one with a capacity of three hundred beds could accommodate ten or twelve graduates. A fair ratio would be about one physician to twenty-five patients.

Arguing in the same vein, the staff of visiting physicians could be likewise augmented without detriment to the hospital management or service. The antiquated policy to which our hospitals so religiously adhere, of centralizing the medical and surgical work in the hands of a few should be brushed aside. There is no justification in theory or in practice of restricting the services of a hospital to a selected few to the detriment of the many who are in need and deserving of such appointments and who represent the highest type of physician. Bearing in mind that these positions are numerically limited, while the aggregate of practitioners is an increasing quantity, it would, it seems to me, appear to be the part of wisdom to regulate the number of visiting physicians according to the number of patients. Thus in a hospital whose capacity is two hundred beds, in place of a visiting staff of three physicians, the number could well be increased to five. Such a change would mean that a larger proportion of practising physicians would enjoy the prerogatives and emoluments that are a natural condition of such positions, and it would be a severe blow to the present tendency of centralizing hospital appointments in the hands of a few. The economic principle involved would be that of the greatest good to the greatest many.

According to the latest edition of the Medical Directory there are about forty-four hundred practising physicians in the Borough of Manhattan and the Bronx. Of this number about five hundred (500) hold hospital positions. These

positions are scattered among sixty hospitals of a capacity of seventy-five beds and over; in other words only about 10 per cent. of practising physicians hold appointments on the staffs of large hospitals. The rest are entirely excluded without rhyme or reason from hospital practice, and cannot enjoy even a share of the benefits derived from such a connection. If you will take the trouble to look through the pages of the Medical Directory you will also note that a number of physicians are credited with appointments in four or five hospitals and that still others hold two different positions in one hospital, to the exclusion of reputable and deserving physicians who are clamoring for hospital appointments. The system which tolerates such an unjust discrimination certainly needs modification, and a more equitable adjustment, especially when we take into consideration that without a hospital connection, a physician is seriously handicapped in the pursuit of his calling in a city where people flock to the hospitals for treatment.

In place, therefore, of an exclusive and restricted attending staff, appointments should be made on a more liberal scale, so that the vast majority of physicians would feel that they were not discriminated against by a small but influential minority of their own brethren. In order to carry out more effectively the plan I have outlined the suggestion might be also adopted of retiring from active service all such members of an attending staff who have served continuously in one capacity a specified number of years, say twenty or twenty-five years. The practice of enforced retirement after a long service or for advancing age, is not unfamiliar to you in other walks of life and in other professions. It is based on sound judgment, while the wisdom of it is unquestioned. It is not unreasonable to be required to sever an active connection from a hospital if for no other reason than that of allowing another the same opportunities. Such retirement from active participation of the service would not necessarily mean that the retired attending physician should be deprived of certain well-deserved privileges. On the contrary, such physicians should be retained in an advisory or consulting capacity, with authority to treat pay patients.

In entering on a campaign for improvement in hospital management, the necessity for reforms other than those suggested soon manifest themselves; but the one which overshadows all others in its significance to the public and to the profession is the practice that prevails in our hospitals by which only the appointed visiting staff is permitted to make use of the operating room and of the beds in the pay wards for their private patients, and which arbitrarily denies such privileges to all other unassociated physicians. This deplorable state of affairs with but few exceptions exists in every hospital in New York where there are pay wards. No matter how capable and reputable a physician may be, and no matter how desirous a patient may be to retain the services of his own physician, directly the latter is admitted to a hospital, his own physician's connection with the case is brought abruptly to an end, while the patient is forced to accept the services of the attached physician, and in many instances one not of his own choice, or else be denied admission. This is a fact with which the public is not generally acquainted; most people being under the impression that any physician in good standing is authorized to take his private patients into the pay wards, but are chagrined on learning that the doors of the hospital are closed to their family physician, because he is not fortunate enough to be officially connected with the institution. Considering that hospital positions are few and far between, and that in not a few instances they are the result of influence rather than of individual worth or personal merit, it is not difficult to understand that it is only a question of time when there will be developed a "system" as baneful to the mass of physicians as it is profitable to the elect of the profession. The tendency to the creation of such a system is greatly promoted nowadays by the desire of patients to seek hospital treatment in preference to being treated at their homes in severe or prolonged illness. It is matter of everyday experience with physicians to see more and more of their cases enter hospital wards. Private rooms and pay wards are a comparatively new feature of hospital life, and it is a moot question whether the founders of our great institutions of healing ever contemplated any such innovation or misapprehension of their original plans.

It would seem that a hospital which was designed to meet the want of the indigent sick would enlist every inch of ground and every bed to the charitable purposes for which it was created, instead, as now obtains, of entering the commercial arena and making a bid for patients. But conditions of life are such to-day that private rooms seem to be a public necessity. The medical and surgical requirements in these advanced days of the medical sciences for ministering to the sick are on such a prodigal scale that home treatment is unfeasible in many cases and in others impossible of being properly carried out. The elaborate paraphernalia of the operating room, the array of surgical appurtenances, the need for trained assistance, all combine to give an impetus to this method of handling patients. These circumstances have given rise to a "system," the importance of which cannot be dismissed without serious consideration of the consequences involved. A grave problem has arisen of far-reaching interest to the medical man, which he must approach with deep concern. On the one hand we have a public educated to avail itself of the facilities of a hospital in severe illness, and on the other hand a cast-iron regulation which closes the doors of the hospital to the majority of practitioners. This "system" has made such striking inroads on the earning capacity of physicians in cities where it flourishes as to entail enormous pecuniary losses. It seems like an unfair and anomalous proposition that a minority of physicians should claim, as though it were a property right, the privileges that rightfully belong to the whole community of physicians.

To give you an idea to what extent this system prevails, I submit the following table of figures collected by myself. The institutions cited are among the largest general hospitals in this city:

Hospital.	Free beds.	Pay beds.
Presbyterian	197	23
St. Vincent's	250	125
St. Luke's (new pavilion)	250	65
Mount Sinai	350	73
German	200	45

Roosevelt	205	39
New York....	Seventy per cent. of patients treated were free patients; new pavilion for pay patients is soon to be opened.	

A study of these figures makes it appear that in the aggregate about 25 per cent. of the beds in our large hospitals are at the disposal only of pay patients for whose purposes large pavilions are maintained, and from which unattached physicians are barred. Notable exceptions to this rule are the following:

In the German Hospital, ex-internes and members of the dispensary staff of ten years' standing may treat pay patients. In Mount Sinai Hospital chiefs of the dispensary staffs of ten years' standing may treat pay patients. In the New York Hospital, a specially selected list of thirty physicians not attached to the regular staff may operate at the hospital.

The private pavilion is partly designed to produce an income which is employed to make up the yearly deficit incurred in the maintenance of the free beds. Now it would seem from a purely business viewpoint that it should make little difference to the managing boards from what class of physicians that revenue is derived, providing the latter are men of acknowledged standing in the community. This much is morally sure, the gross receipts would be materially enhanced while there would be fewer vacant beds.

This very matter was advocated by me as long as ten years ago, in an article which appeared in the MEDICAL RECORD January 25, 1896, entitled "Should Our Hospitals Extend Their Facilities for Operating to Physicians Generally?" I then took the ground that the managers of our hospitals should grant certain physicians who are known to them to be capable and well qualified, the privilege of operating upon their pay patients in the hospital under certain restrictions and limitations. What these restrictions and limitations were, each hospital must determine for itself and work out according to the character of the institution, and the nature of the cases that are eligible for admission. It was not contemplated that all physicians, promiscuously, would come within the scope of this concession, but only a certain quota selected according to rules, which each hospital would make for the protection of its own interests. I argued that physicians were greatly hampered in the practice of their calling by the oppressive and archaic rule which closes the doors against them. It was shown that on account of this drawback, physicians were constantly losing their most lucrative cases. I recommended that one or more of our more liberal institutions should take the initiative of abolishing this practice. It was not long after the publication of my paper that the question was favorably taken up by several institutions in this city with satisfactory results. Among the remoter results, auxiliary operating rooms became the vogue, and today no hospital is considered fully equipped without them; the number on the house staffs was of necessity increased, and this increase has proven a great boon to our young graduates. To-day hospitals are conducted in many cities along the lines here suggested, with great satisfaction to all concerned. Thus the patient has the choice of hospital or home treatment; the well-grounded feeling of hostility of the profession against hospitals gave way to one of friendly disposition; further, there were found to be fewer empty beds in the pay wards, and in consequence appeals for financial support became less peremptory, and finally, there was not that tendency to pauperize a susceptible public by crowding the free wards with patients who could pay for medical services.

I believe some of the measures recommended in this paper will be adopted in the near future, and that in a certain sense the superiority of one hospital over another as a public benefaction will be determined by its disposition to follow the spirit of the times, and submit graciously to the popular demand for an "Open door."

1309 MADISON AVENUE.

CHOICE OF COW'S MILK.

BY J. ALLEN GILBERT, PH.D., M.D.,

PORTLAND, OREGON.

No article of diet is so universally used by man and beast as milk, and any information which will in any way aid in the intelligent choice and use of so useful a commodity must necessarily appeal to the interest of one and all.

I shall deal with the subject in two general heads, viz., first, a consideration of fifteen qualities considered by the writer to be desirable in a milk to be used as human food—infants and invalids being specially in mind—and, second, a comparison of the main breeds of dairy cows with a view to selecting the breed best adapted to fill these requirements. No attempt will be made to deal with rules governing the modification of cow's milk for the purpose of infant and invalid feeding. The sole purpose will be a choice of milk.

QUALITIES OF A GOOD MILK.

(1) *High Percentage of Solids.*—To the average individual milk is milk, and the consumer receives and pays for his milk by the quart with practically no knowledge of the food content of the milk he purchases. The milk of all animals, as well as of individuals of a certain species, varies markedly in the quantity of the respective ingredients contained therein. In stating the composition of "cow's milk" considerable variation must be allowed, depending upon the breed, individual cow, environment, exercise, food, etc., as will be shown by the following table:

TABLE I.[16]

	Maximum	American Average	Minimum
Water	90.69	87.17	80.32
Fat	6.47	3.69	1.67
Casein	4.23	3.02	1.79
Albumin	1.44	.53	.25
Sugar	6.03	4.88	2.11
Ash	1.21	.71	.35

Thus it would be possible for one man to pay two or three times as much for food content in milk as some more fortunate consumer whose milk contained a large percentage of solids. However, in such calculations quantity of solids is not the only desideratum. Milk has quality as well as quantity of solids, and often for purposes of food for invalids and children the former is the more important, as we shall see later.

The quantity of fat is perhaps the most important from the standpoint of total solids, in that it is most variable of all the solid ingredients of milk. With an increase in the total solids, fat increases and ash

decreases, whereas casein and albumin remain practically the same, as is shown in the following table, compiled from 2,400 American analyses at the Vermont Experiment Station:

TABLE II.[5]

AMOUNT OF INGREDIENTS IN 100 POUNDS OF TOTAL SOLIDS.

Quality of Milk as to Total Solids	Fat	Casein and Albumin	Milk sugar and Ash
Per Cent	*Lbs.*	*Lbs.*	*Lbs.*
11	27.9	29.5	45.5
12	29.1	25.6	45.2
13	30.7	25.4	43.9
14	33.4	25.5	41.2
15	35.8	26.6	37.4
16	37.5	26.8	35.6

When buying by the quart for general use, those who are looking for "rich milk" are entirely right in judging their milk by the percentage of fat shown by analysis or by the cream gauge. The cream gauge is, however, an inaccurate method of judging fat, for a milk showing a relatively small percentage of cream by the gauge may make more butter, *i.e.* produce more butter fat than one showing a relatively large percentage of cream. Professor Caldwell reports that Baumhauer in Amsterdam examined 20 different samples of milk. Nos. 1 and 2 were found by chemical analysis to have respectively 2.7 and 3.5 per cent. of fat, while Nos. 5, 10, 15, 18, and 20 were found by accurate chemical method to contain 3.3, 3.0, 3.9, 2.3, and 2.7 per cent. of fat, and yet the thickness of the layer of cream formed by all of them was the same.[6] There is not, then, any close connection between the cream percentage and the butter yield or true fat percentage.

Being a liquid, we are prone to look upon milk as a mere drink rather than a food, whereas in it are contained all the elements necessary to the maintenance of the human body, and evidence is to be had in abundance showing that milk is in no sense a luxury, but is an economical article of diet. Meats and milk are both rich in protein and are, in a sense, interchangeable as regards food value. Consequently the amount of solids in the milk becomes of great importance.

We are told that a quart of milk, twelve ounces of beef, and six ounces of bread all represent about the same amount of nutriment, and yet only that can be considered as true nutriment to the body which is digested and assimilated, and under different circumstances these three substances may have entirely different food values.

Where mere food content, without respect to the personal equation of the animal to be fed with it, is the main point of consideration, that milk is a good milk which has a high percentage of solids, and since variation in percentage of solids depends largely upon that of fat, that milk is, as a rule, the best milk which gives the largest percentage of fat. However, food content and food value are not always equivalent, due to variation in the powers of digestion and assimilation in the individual to be fed. But, where commercial value, either for butter or for other by-products, is the only point at issue, a milk must have a high percentage of solids in order to be "good." Where weak digestion is to be dealt with this is not true.

(2) *Good Skim Milk.*—Certain breeds of cows always head the list in percentage of butter fat, but when the quantity of fat per cow is taken or when the value of the whole milk is calculated, giving each ingredient its respective value, the order of standing shifts itself entirely.

To those who have seen the country milkmaid skim off the cream and set aside crock after crock of skim milk to be, as it seemed, "thrown out" to the pigs and chickens, it is hard to give any adequate conception of the value of skim milk until by analysis and by the still more important test of results in feeding it, we are brought to realize that butter fat is not the only element worthy of consideration in our estimate of milk and cows. Cream is valuable chiefly for its heat-giving properties, and the skim milk contains the valuable protein. The following table shows what we have left in skim milk according as the cream has been removed by skimming or by centrifugalization:

TABLE III.[12]

	Gravity	Separator
Fat	.9	.1
Casein and albumin	3.2	3.6
Sugar	4.7	5.
Ash	.7	.8
Water	90.5	90.5
	100.0	100.0

Of what value is this? To answer this question I can do no better than to draw extensively from the article cited on "Milk as a Food" and from the article by C. L. Beach which gives the results of experiments conducted for the purpose of showing the relative food value of solids from milk poor and rich in fat content when fed to young growing animals. Even after milk is skimmed it still contains nearly 10 per cent. of its own weight of solids or nutritive ingredient, and the value of skim milk as a food is not generally appreciated. In an exclusive milk diet one has to drink a large quantity to get the needed nourishment, but when taken with bread or used in cooking it forms a very nutritious addition to the food. A pound of lean beef (round steak, for example) contains about 0.18 pound of protein and has a fuel value of 870 calories. Two and a half quarts, or 5 pounds, of skim milk will furnish nearly the same amount of protein and have almost the same fuel value as the pound of round steak. Two quarts of skim milk have a greater nutritive value than a quart of oysters, and the nutriment in the form of oysters would cost from 30 to 50 cents, while the two quarts of skim milk would have a market value of from 4 to 6 cents and a value on the farm of from 2 to 4 cents. An oyster stew made of one part oysters and two parts skim milk would owe its nutriment more to the milk than to the oysters. A lunch or meal of bread and skim milk is very nutritious, as the following computation shows:

TABLE IV.[8]

COMPOSITION AND COST OF A LUNCH OR MEAL OF BREAD AND SKIM MILK.

Food Materials	Amount	Estimated Cost	Protein	Fuel Value
		Cents	*Pound*	*Calories*
Bread	10 oz.	3	0.06	755
Skim milk	1 pt.	1	[illegible]	170
Total	.....	4	[illegible]	[illegible]

The following lunch, such as might be obtained

in a restaurant or lunch room, will serve for the purpose of comparison:

TABLE V.[8]

ESTIMATED COST AND NUTRIENTS OF A RESTAURANT LUNCH.

Food Materials	Amount	Estimated Cost	Protein	Fuel Value
	Ounces	*Cents*	*Pound*	*Calories*
Soup	8	.....	0.01	75
Beef	2	.....	.02	275
Potatoes	2	.....	.....	100
Turnips	1	.....	.....	15
Bread	4	.....	.02	300
Butter	½	.....	.....	100
Coffee:				
Milk	1	.....	.....	20
Sugar	½	.....	.....	55
Total	.....	15 to 20	.05	940

FIG. 1.—Pig fed on skim milk.

It will thus be seen that the 15-cent lunch containing nine different food materials did not have any greater nutritive value than the 4-cent lunch of bread and milk.

The ingredient of our food which costs the most, which has the greatest physiological value, and which is most apt to be lacking in ordinary dietaries

FIG. 2.—Pig fed on milk poor in fat

is protein. Skim milk has nearly all the protein of the whole milk. By the removal of the fat in the cream it loses half its fuel value, but practically none of the protein. What is left has all the value of the whole milk for building and repair of tissue, for the making of blood, muscle and bone, and half the value of the whole milk for supplying heat and muscular power. When the facts are fully understood, skim milk will doubtless be more wisely utilized.

The fact comes home to us even more forcibly in the presence of such experimental demonstration of the value of skim milk as is found in the excellent work of C. L. Beach. When separate lots of pigs were fed skim milk, milk poor in fat and milk rich in fat respectively, for the first forty days the pair receiving skim milk gained 62 pounds; the pair receiving milk poor in fat, 54.8 pounds, and the pair receiving milk rich in fat, 42.2 pounds. For the next ten days the gain for each pair was 22 pounds, 20 1-2 pounds, and 3 1-2 pounds, respectively. From 50 to 60 days the results were 20 pounds gain, 21 pounds gain, and 6 pounds loss, respectively. After 40 days' feeding the pair receiving the milk rich in fat were affected with loss of appetite and diarrhea, and finally did not consume enough to sustain life. The pair receiving skim milk maintained good appetite until the close of the trial. The pigs fed milk rich in fat also consumed more solids for a pound of gain, showing that the excess was not assimilated but only acted to cause a diarrhea and eventually loss of weight rather than gain.

The results of slaughter showed also that the pigs fed skim milk gave better meat and better bone than

FIG. 3.—Pig fed on milk rich in fat.

those fed milk rich in fat. Fig. 4 shows the result in graphic form.

The same principle was demonstrated by him on other animals, as is shown in the following tables:

TABLE VI.[5]

SOLIDS FOR ONE POUND OF GAIN WITH CALVES.

	Milk Poor in Fat 3.27%		Milk Rich in Fat 5.1% 4.6%	
	Calf No. 1	Calf No. 2	Calf No. 3	Calf No. 4
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*
Solids for one pound of gain	1.16	.91	1.33	1.03
Solids for one pound gain, average of each pair, lbs.	1.03		1.08	

TABLE VII.[5]

MILK SOLIDS REQUIRED FOR ONE POUND OF GAIN, AVERAGE OF SIXTEEN ANIMALS.

	Milk Poor in Fat	Milk Rich in Fat
	Lbs.	*Lbs.*
Average of 2 pair calves, 45 days	1.03	1.18
Average of first trial, 2 pair pigs, 40 days	1.36	1.77
Average of second trial, 2 pair pigs, 30 days	1.40	1.56
Average of 2 pair lambs, 60 days	1.08	1.37
Average of 8 pair animals	1.22	1.47

Table VII. shows in each case that the pair receiving the milk poor in fat required less food for a

pound of gain than the pair receiving the milk rich in fat; and the average for the former was 20 per cent. less.

The failure of a pound of milk solids in rich milk to make equal or better gain than a pound of solids in poor milk was not due, apparently, to lack of nitrogenous material, but rather to the excess of fat or to the character of the fat. Larger fat globules were found in the richer milk, and this fact in connection with the digestive disturbances would seem to indicate the reason for the larger gain from a pound of solids with the poorer milk.

Another element of value for the skim milk is the fact that from it are made the different forms of cheese.

The average composition of buttermilk, which is practically sour skim milk, is quite similar to that of skim milk, though it contains slightly less protein and sugar and a very little more fat. The fuel value is about the same, about 165 calories per pint. An ordinary glass of buttermilk contains as much nourishment as half a pint of oysters or 2 ounces of bread, or a good-sized potato.

(3) *Large Quantity.*—A large quantity of whole milk affords a large quantity of skim milk, and, if

Fig. 4.—Showing the difference in the meat of pigs fed on skim milk and on milk rich in fat

a milk can be found from which an equal quantity of fat can be extracted daily and still have a large residue of skim milk for feeding young growing stock or other consumers, the advantage is only too evident, especially when experiment has shown conclusively that the young growing animal thrives better on skim milk or milk poor in fat than on milk rich in fat. Other things being equal, the milk of a cow giving a large quantity is more desirable than that of a cow giving a small quantity, for reasons other than mere quantity as such. In a cow producing a large quantity of milk one is sure to find a rugged constitution, good powers of digestion and secretion, depth of respiration, and good physiological traits in general. Such a cow is also more liable to be free from tendencies to disease.

(4) *Slow Creaming.*—This quality would necessarily indicate a good emulsion. Rapid rising of the cream shows that the fat globule is for some reason or other unable to maintain its original relation to the menstruum in which it is suspended. Usually the immediate cause of the rapid rising of cream is the large size of the fat globules. The specific gravity of fat being less than the remaining constituents, the larger the fat globules, the faster it rises. Viscosity and other elements of the milk may be instrumental in modifying the process, but, whatever the cause, rapid rising of the cream shows poor stability of the emulsion. Hence, for numerous reasons slow creaming can be looked upon as a decided advantage in any milk. After the cream has risen by the gravity method there still is retained in the skim milk a goodly proportion of fat which is made up of the finer globules whose specific gravity did not differ sufficiently from that of the milk to carry them to the surface in the allotted time. A certain proportion of fat is also necessary to a good cheese, which is the chief by-product of skim milk.

Certain forms of cod liver oil give great trouble in digestion on account of their irritability to the gastrointestinal tract, due to the difficulty of obtaining the requisite emulsion of the fat necessary to assimilation. That artificial preparation of it which retains its purity and most completely breaks up the fat globules, and thus forms the most stable emulsion, will most nearly fulfil the requirement for which it is prescribed. The intimate analogy with the case in hand would admit the statement in regard to milk that the more complete and stable the emulsion, other things being equal, the more digestible the milk.

Another point under this head is worthy of attention. In the retail delivery of milk that milk will be most just for all consumers which divides the solid constituents equally among all. This is impossible in a milk in which fat, *i.e.* cream, rises rapidly, for in such case the larger proportion of fat goes to those served early from the can.

(5) *Easy Remiscibility.*—After cream has once separated from the milk it so adheres as to make it practically impossible to again reduce the milk to its former condition by shaking. That the difficulty of remixing the fat with the remaining constituents varies markedly with different milks is easy of demonstration. With some specimens the fat globules are broken up and butter produced without obtaining the thorough emulsion which existed before separation. This element is very important in such cases in artificial feeding of infants when one mixes enough to last for twenty-four hours and allows it to stand between the different feeding periods. As a general rule a milk with globules of large size mixes poorly after separation of the cream, and the milk which is originally the most perfect and stable emulsion returns most readily to its original condition on shaking.

(6) *Slow Churning.*—The smaller the fat globules, the longer the time required for churning. This was demonstrated experimentally by Dr. Sturtevant. Butter churned from a milk of large fat globules gives a butter of coarser grain than one of small globules. In the churning process the first molecules to form in a milk with small globules are very small. A slow-churning milk is also as a rule one in which the cream rises slowly and hence has this advantage also, as shown above. Furthermore, in a milk which churns easily one is frequently able to find small particles of butter churned during the ride necessitated by delivery of the same in a retail business. This is specially undesirable with infants and invalids.

(7) *Small Fat Globules.*—This quality insures slow creaming, good emulsion, easy remiscibility, ease in digestion and assimilation, and better skim milk with its by-products. There is an element of extreme importance in the examination of milk which chemical analysis will not reveal, viz., the size of the fat globules. Milk is an emulsion of fat in a menstruum composed of substances in solution and suspension in water. Various milks differ ma-

terially in the size of their fat globules. In the experiment on pigs cited above, in which milk rich in fat, milk poor in fat, and skim milk were fed to separate sets of pigs with the advantage so overwhelmingly in favor of the skim milk, the size of the fat globules was measured in the milk rich in fat and poor in fat respectively, and it was found that the average diameter of the fat globules in the poor milk as compared with those in the rich was as 2 to 3.5 and their volume as 1 to 5. This was probably the basis of the trouble with digestion in the pigs, as I shall show later.

It is a well-known fact that certain Jersey cows give milk so rich in fat that they cannot suckle their own young. It is at least to be suspected that the trouble is not so much in the "richness" of the milk as in the large size of the fat globules. The smaller the globules of fat, the more permanent the emulsion, and also the less irritation to the gastrointestinal tract. Also, the finer the emulsion, the easier the process of digestion and assimilation, as will be shown under another head.

Wing gives the size of fat globules in cow's milk as varying between 1-1500 and 1-25000 of an inch in diameter, the extremes of which I consider too small and too large respectively, when all milks are considered. Foster gives the size of the human fat globules to be from 1-5,000 to 1-2,500 of an inch. By accepting these measurements, made by different investigators under different circumstances, some writers have held that fat globules in human milk are smaller than those of cows' milk. This, however, is not the case. Nowhere have I been able to find any comparative estimates of the relative size of the globules in human and various dairy cows' milk in which all samples investigated were submitted to the same methods. Being informed by the Department of Agriculture at Washington that no such investigation had been made in which accurate comparison of the various breeds of milk had been stated, I measured the fat globules of human milk and of the milk of four of the chief breeds of dairy cows, viz., Jersey, Guernsey, Ayrshire, and Holstein. The samples used were taken from a mixture of the milk of the pure-bred cows of the respective herds, and all submitted to the following conditions: In order to facilitate ease of measurement by getting the globules separated more widely in the field than could be done with whole milk, one part milk and two parts water were mixed. To this mixture was added a small amount of liquid rennet, so as to coagulate the casein and thus help hold the fat globules stationary under the microscope. Before coagulation took place one drop of the mixture was mounted on a slide and under a cover glass. The process of coagulation of the casein helps to remove the slight quivering and motion of the globules which otherwise hamper one in the measurement. In subsequent investigations a thick solution of gum acacia was used and was even preferable to the rennin method. A 1-12 inch objective was used, the correction to microns having been calculated for the micrometer scale. One thousand globules were then measured, taking them as they came. This was done by measuring all that fell between two of the large divisions of the scale on the micrometer disc, and then as the field was shifted by means of the mechanical stage all falling within the space thus covered were measured and the average for the 1,000 taken and the results subsequently reduced to microns, *i.e.* 1-25,000 of an inch, generally designated by μ. The human milk was a mixture of specimens from five women whose babies were respectively 7, 4, 3, 2, and 1 months old.

In order to determine how large a variation there was from the average, the average variation was also calculated for the respective samples of milk.

TABLE III.

SIZE OF FAT GLOBULES IN DIFFERENT KINDS OF MILK.

	Human	Jersey	Guernsey	Ayrshire	Holstein
Average diameter in microns or μ	2.9	2.8	2.6	2.1	2.0
Average variation in microns μ	1.2	.9	.85	.76	.69

There being such variation in diameter, the variation in volume is all the more striking when the relative size is represented graphically, as in Fig. 5.

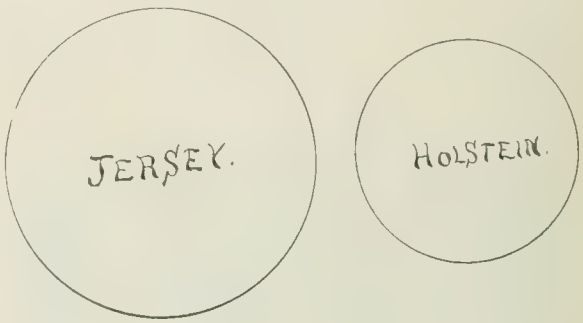

FIG. 5.

Thus the average Jersey globule has 2.7 times the volume of the Holstein globule. The human is still greater than the Jersey.

Sturtevant in his excellent work showed conclusively that the larger the globule, the shorter the time required for churning, as is shown in the following table:

TABLE IX [1]

AVERAGE SIZE OF GLOBULE*	Time Churned. Minutes	Butter First Showed
5680″	3	.....
5940″	8	5 min.
6768″	25	15 min.
8252″	50	36 min.
8320″	60	.....

The milk, then, with a large globule is at a decided disadvantage where transportation of the milk is a necessity.

(8) *Uniformity of Size of Fat Globules.* — This quality insures more stability to the emulsion, and hence such milk is more easily assimilated, as explained above and verified below by experiment. Table VIII. gives the variation in size of globules for the various breeds.

(9) *Slow Coagulation.*—It has long been known that the curd of cow's milk gives trouble when fed to infants, and in modification of the same sufficient water is added to reduce the quantity of the casein approximately to that in human milk. This still leaves a curd which is at times troublesome, and lime

*Sturtevant's measurements were all in fractions of an inch, and all globules smaller than one unit of his micrometer were not counted or measured and were designated as granules. He used lower magnifying power. The so-called granules having been omitted in his average, direct comparison of results is impossible except relatively.

The sign ″ signifies fractions of an inch, *e.g.* these figures are to be read 1-5680th, 1-5940th of an inch, etc.

water is added to help dissolve it. Aside from these facts there are other differences between the coagulum of human and cows' milk.

To test coagulation I heated to 100° F. a water bath containing a 15-c.c. test tube, in which was placed 10 c.c. of milk, in which one drop of liquid rennet was well mixed. The water bath was then allowed to stand and gradually cool at the rate of about 1 degree in five minutes, with the test tube remaining in the bath until coagulation of the milk took place. The time was noted when the milk began to solidify, which occurs rather abruptly. This could be detected by tilting the test tube occasionally. Jersey milk coagulated in 29 minutes, Guernsey in 31 minutes, Holstein in 34 minutes, and human milk failed entirely to solidify after standing for days, though an increased thickness was manifest after standing a considerable length of time. Repeated tests gave practically the same relative results except in one instance. On this day when I called for milk at the Jersey and Guernsey dairy I was told that the cows had bloated on pasture that day so badly that one Jersey cow died. This day the milk coagulated in 17 and 23 minutes for Jersey and Guernsey, respectively. On mixing cow's milk with water in the ratio of 1 of milk to 2 of water, so as to reduce the casein to approximately that of human milk, then cow's milk also failed to solidify even after standing 48 hours. It, however, took on a thickened aspect also. There was a marked cohesion of the particles as compared with the human specimen.

There was also this marked difference in the coagulum of human and diluted cow's milk. As human milk coagulated, after standing some time the casein floated, the whey clearing gradually from the bottom. The casein of cow's milk sank and the clear whey appeared at the top instead of at the bottom as in human milk. In the test tube containing human milk a slight sediment also formed in the bottom of the tube which on examination under the microscope proved to be fat globules. With the data at my disposal any attempt at explanation of this by me at present would be ill-advised.

One more distinction might be noted. After shaking the coagulum of human milk it became very fine, whereas the coagulum of cow's milk could be seen clinging to the tube.

It would seem evident that for purposes of digestion a slow, fine coagulation would be preferable to the coarser, more rapid one. This subject presents a valuable field for further investigation, which unavoidable circumstances render impossible at present.

(10) *Easy Absorption and Assimilation.*—To test whether a milk with small fat globules would be absorbed from the intestine more easily than one with large ones, I isolated a cat and fed him on milk and water exclusively for four days, feeding him once in 24 hours. This was done to clear the intestine of food previously eaten. On the fourth day he was given a meal of separator cream (Jersey being used because of its large fat globules) and killed an hour and twenty minutes afterward by illuminating gas asphyxiation. Chyle was then taken from the ducts of the mesentery and also the upper half of the intestine was emptied. The fat globules of each specimen were measured to get the size of those in the intestine and mesentery, respectively, to see if in absorption there was preference for globules of small size. The difference under the microscope was very marked. The specimen from the mesentery contained globules that were very small and so exceedingly uniform in size that only 350 were measured and an average taken. The average and average variation for both specimens were calculated. The results were as follows:

TABLE X.

SIZE OF FAT GLOBULES IN INTESTINE AND MESENTERY.

	In Intestine	In Mesentery
Average diameter in microns.	2.2	1.6
Average variation in microns	[illegible]	.31

The results show very plainly that small globules have the preference in absorption and the average variation in size of those absorbed is so small that there can be no doubt that large globules are absorbed with relative difficulty. It will be noted also that the average globule in the intestine is also smaller than that of the Jersey globules as fed, showing the emulsification or at least selection of the fat in process of digestion. During asphyxiation the cat vomited a large amount of white fluid, apparently but little changed, judging from gross appearance.

(11) *Good Keeping Qualities.*—This bespeaks purity and freedom from destructive agencies. It is a well-known fact that milk which is drawn under surgical cleanliness and asepsis and immediately sealed hermetically and brought to a temperature of 60°F. will keep for weeks. Hence keeping qualities are dependent in part at least upon cleanliness, which, however, is not the only element.

(12) *Cleanliness and Purity.*—This goes without saying. The normal product of the udder is all that should be found in an ideal milk.

(13) *Phlegmatic Temperament in the Cow.*—Inasmuch as fright, worry, shock, or other derangements of the nervous system show themselves in the quality and quantity of the milk, that cow which is least affected by the disturbances necessarily incumbent on surrounding conditions will, other things being equal, give the best milk. Instances are not infrequent in which calves have died shortly after taking the milk of the cow which had been previously subjected to severe shock or long-continued nervous strain. That worry or fright will affect the quantity of milk is a matter of common observation.

(14) *Healthy, Rugged Cow.*—Good milk production presupposes good digestion, healthy secretion, vigorous respiration, and active circulation. In short, the chief end of the cow is milk production, and when the latter is at its best the cow producing it must be of such a nature as to respond to the unusual demands made upon her by such process of secretion. Some cows are under continual strain and never go dry, usually performing the function of reproduction simultaneously with the performance of their most useful function, viz., the production of milk.

(15) *Freedom from Disease in the Cow.*—Disease such as tuberculosis can be transmitted through the milk, and hence that cow or breed of cows which is least susceptible to the inroads of disease is to be preferred to one whose methods of breeding have rendered them more or less subject to infection with the diseases to which cattle are subject.

COMPARISON OF DAIRY BREEDS.

The great mass of people know but little of breeds beyond the fact that "Jerseys give rich milk." Being desirous of comparing only the chief dairy breeds, the following will be dealt with, viz., Jersey, Guernsey, Ayrshire, and Holstein-Friesian.

Fat is the most variable quantity in milk. The percentage of solids not fat is practically a stable quantity in various milks, and hence the commercial value of a milk is estimated by its percentage of fat. In percentage of fat, Jersey cows lead the list, but not so in the daily quantity of fat per cow, if we are to accept the following report of the United States Department of Agriculture, by Lane, in 1905:

TABLE XI[6]

SUMMARY OF AMERICAN ANALYSIS OF SAMPLES OF MILK FROM PURE-BRED COWS

BREED	No. of Cows	Fat in Milk Per Cent.	No. of Cows	Average Daily Milk Yield in Lbs.	Average Daily Fat Yield in Lbs.
Jersey.....	164	5.13	153	24.5	1.26
Guernsey...	67	4.87	53	28.9	1.41
Ayrshire...	33	3.85	18	27.7	1.07
Holstein-Friesian..	502	3.30	493	48.9	1.61

It will be seen from this table that in percentage of fat the respective breeds would stand in the following order: Jersey, Guernsey, Ayrshire, Holstein; but when quantity of fat is considered, the order shifts as follows: Holstein, Guernsey, Jersey, Ayrshire. The cause for this difference is to be found in the quantity of milk yield of the various breeds. While the Jersey yielded only 24.5 pounds of milk a day, the Holstein yielded within one-tenth of a pound of twice that quantity, viz., 48.9 pounds. Remembering the exceedingly high value of skim milk as a food, and remembering also that the percentage of solids not fat is practically the same in various milks, in the light of her milk production the Holstein would seem to be the preferable cow to own. One not only gets more fat per cow, but nearly double the amount of skim milk, which contains the valuable protein.

On the other hand, those buying milk by the quart, sold at a uniform price for all breeds, will receive more commercial value by purchasing Jersey milk, for in so doing they get a milk with a higher percentage of solids. Where good digestion, adults eating a mixed diet, and highest commercial value per quart are the only elements to be dealt with in choice of a milk, the Jersey is undoubtedly the preferable milk. Where infants, weak digestion, and large quantity of milk are at stake, the Holstein leads the list and the Jersey becomes the least desirable for numerous reasons indicated by the qualities enumerated in the discussion of qualities desirable in a milk.

Jerseys have been bred with butter mainly in view. Alvord gives the annual milk product per cow as 5,157 pounds, yielding 293 pounds of butter, which includes the average of 140 cows for 6 years. The characteristic of the milk of this breed is a high percentage of total solids, especially fat; 4 to 5 per cent. of fat is a usual rate, and in many instances it is still higher. Jersey butter records based upon percentage of fat are correspondingly large. The butter fat is in globules of uneven size and large on the average—larger than in other breeds—and hence cream is easily separated and comparatively hard to remix. The quantity of milk is small in accord with the general rule that a high percentage of fat is usually accompanied by a small milk yield. Jersey milk coagulates quickly and, having large globules, would be relatively hard to absorb from the intestine.

Jerseys are the smallest of the noted breeds in average size, the cows ranging from 700 to 1,000 pounds and the bulls from 1,200 to 1,800 pounds. With this light weight is to be found frequently a tendency to delicacy of constitution. In no sense are they a beef breed. They do not fatten readily, and hence have a poor showing at the block. In good animals all extra food is converted into milk. It is interesting to note that originally the Jerseys, because of their resemblance to deer, were bred to adorn the lawns and parks of the English aristocracy.

Typical Jerseys generally have a high-strung, nervous temperament, and in order to do their best must receive good care and dare not be abused as to food or treatment, without injury. Bulls are hard to handle. In one local dairy (now changed to Ayrshire) two valuable imported bulls had to be shot because they were so vicious that handling was fraught with too much danger.

The breeding qualities seem impaired when compared with other breeds. Under extreme care and nursing it is difficult to raise as high as 90 per cent. of the calves. One local breeder gave up the breed and changed to Ayrshire because, as he expressed it, "In spite of all I could do, my Jersey herd just faded away from me." He lost 50 per cent. of his calves with Jerseys, and since the change to Ayrshire, on the same farm and under the same conditions, he has lost but one calf out of 107. When asked as to the cause of death in the Jerseys, no apparent cause was known. He said, "They were just weak. They lay around as limp as a rag and died." The manager of the local Jersey herd (one of the finest in the country) is by extreme care able to raise 90 per cent., which is far above the average.

Jerseys are alert and suspicious of the stranger, and frequently will not give down their milk in the presence of a stranger, to say nothing of a strange milker. A glance into their stall is generally met by a quick look as if of surprise and inquiry.

Guernseys.—The cows of this breed produce liberal quantities of milk, and it is of uncommon richness in butter fat and in natural color. They are to be recommended for butter cows as well as for market milk where quality secures a relatively high price, and they are noted for rich production combined with especial economy in feeding. The annual milk yield of good herds of Jerseys and Guernseys of the same number is just about the same. They are markedly a butter cow; the fat globule is next to the Jersey in size, and hence a rich yellow cream rises quickly and in goodly quantity. The fat globule being large, it suffers the same handicap as Jersey milk in the relative ease of absorption. Like the Jersey, the cream mixes rather slowly after separation.

Guernseys are a size larger than Jerseys, stronger boned, and a little coarser in appearance. They possess great power of assimilating food and converting

it into milk, yet are delicate feeders rather than gross, and will not generally bear much forcing. The Guernseys possess a nervous temperament, and yet the cows are extremely quiet and gentle when properly handled, and less trouble is reported in the management of aged bulls than with Jerseys of like age. They also fatten better than the Jerseys.

Ayrshires.—The average annual product of milk per cow is 5,412 pounds. The milk of the Ayrshire is not exceptionally rich, but somewhat above the average. Herd records show 3 1-2 to 4 per cent. of butter fat in the mixed milk throughout the year. The milk of this breed is very uniform in its physical character, the fat globules being small, even in size, and free to separate from the milk. Cream rises slowly and has comparatively little color. The Ayrshire, therefore, is not a first-class butter cow, but its milk is admirably suited for town and city supply, being safely above legal standards, uniform, and capable of long journeys and rough handling without injury. In its slow churning and easy absorption it has the advantage of the two breeds mentioned above.

The breed is among the youngest of well-established type, having been built up within the nineteenth century by a liberal use of blood from the cattle of England, Holland, and the Channel Islands. The Ayrshire of the present day bears strong resemblance to the Jersey in certain features and to the wild white cattle of Chillingham Park, from which they are probably descended. It is practically certain that they are descendants of the original wild cattle of Great Britain.

The Ayrshire excels in obtaining subsistence and doing well on a wide range of scanty pasture or in thriving and giving a dairy profit upon the coarsest forage. They are of medium size, probably averaging 1,000 pounds, and bulls from 1,400 to 1,800 pounds. Being of a highly nervous temperament, the cow has superabundance of nerves and is willing to employ them upon instant demand for self-defense or self-support. The bulls, if properly handled, are not fractious, but the cows are rather inclined to be quarrelsome. They are always active and energetic, stop only for a purpose, move off with a brisk walk, and often trot without special provocation—points of both interest and value.

Although these cattle can lay no claim to being specially adapted to beef production, the calves are thrifty and full-fleshed, and steers and dry cows fatten readily on suitable feeding. All in all, the Ayrshire is a good cow.

Holstein-Friesians.—These large black and white cows yield milk in proportion to their size. The breed is famous as enormous milk producers. Records are abundant of cows giving an average above their own live weight in milk monthly for ten or twelve consecutive months; 7,500 to 8,000 pounds per year is depended upon as a herd average. Holstein milk is characterized by fat globules of small and uniform size, separating slowly by the gravity method, churning slowly, and carrying very little color. Set side by side with milk of no richer quality but of larger fat globules, in a given time less depth of cream will rise.

The peculiar structure of this milk renders it specially valuable for cheese making, as the fat globules are more readily retained in the curd. It also adds to the value for marketing, as the cream rises very slowly and remixes easily. The color of the butter is a lemon yellow rather than an orange, and its keeping qualities are unexcelled, as is shown by Dr. Sturtevant, an advocate of the Ayrshire breed.

"One sample of Dutch (Holstein) butter, one of Guernsey butter, and seven of Jersey butters were placed in a cupboard adjoining a steam heater. A few days later another part of Ayrshire butter was added. The Guernsey butter was very high colored, melting point 99°, had an oily rather than a waxy look, but was very attractive. It moulded in spots in about a month. In seven weeks the Jersey butters were all rancid and one had lost its color in spots, the white spots reminding of tallow—no butter flavor. The Ayrshire butters were not rancid, but had lost flavor and were poor. The last specimen placed in the same cupboard, but on an upper shelf, was forgotten. When examined three and one-half months later it still retained its butter flavor, but was not first class. The Dutch butter was well preserved, being neither rancid nor flavorless."

Assuming that all specimens were subjected to the same conditions in preparation, this testimony, coming from an advocate of the Ayrshire breed, becomes exceedingly important.

Because of the low percentage of fat, Holsteins have been looked upon by some as poor butter yielders, an error arising out of a confusion of percentage of fat and quantity of fat per day. One author states that "allowing to the Jersey breed the standard yield of 200 pounds of butter per annum, the Friesian (*i.e.* Holstein) and Swiss cows would produce 239 pounds." In further confirmation of the incorrectness of the claim, let me give a table from Bulletin No. 102 of the Wisconsin Experiment Station on "Studies in Milk Production."

TABLE XII.

	Holstein	Guernsey	Jersey	Short Horn
Average annual yield of milk	9987.3	6530.7	5700.2	7121.4
" " " " fat	351 6	319 4	301 1	281.7
" " value of product	$94 63	$82.31	$77 10	$74.26
" " cost of food	45 46	37 37	35.22	38.15
" " net profit	48.17	44.94	41.80	36 09

This table, if accurate, leaves but little room for argument from the commercial standpoint.

Holstein milk coagulates the most slowly of any, and on account of its small globules and their evenness in size it has a decided advantage in ease of absorption.

This breed can be traced back for two thousand years and was always famous for dairy purposes. In breeding, the object of the breeders has always been to produce as much milk and beef as possible from the same animal, and the results bespeak their success. The large frame, strong bone, abundance of flesh, silken coat, extreme docility, and enormous milk yield make a combination truly to be desired. In size the Holsteins are the largest of all dairy breeds. It is difficult to prevent the males from becoming too fleshy for breeding animals, and the females when not in milk take on flesh rapidly. The cows average about 1,200 pounds. The bulls at maturity are very large and heavy, often above 2,500 pounds in weight.

This element of size is a very important one, for "it may be stated as a general law that the food of support decreases proportionately with the increase of size in animals; . . . size, all other things being equal, is favorable to the economical yielding of milk. It actually takes less food to produce a hundred pounds of milk with a cow of equal merit weighing 1,000 pounds than with one weighing 800 pounds." In a comparison of breeds the Wisconsin

station decided in favor of the larger, hardier, more vigorous cows.

In temperament these animals are quiet and docile, bulls as well as cows, the bulls exceptionally so. Instead of being held at bay with a long stick hooked in the nose-ring, they can usually be led out for exhibition at the end of a loose rope. Among the cows, instead of a fretful suspicion of strangers one frequently has to guard his clothes against their too friendly curiosity, while calves of other breeds are likely to put the longest distance possible between themselves and a newcomer.

No breed excels them in great constitutional vigor, and the calves are large at birth, almost always strong and thrifty, growing fast, and fattening easily. This vigor of constitution is shown not only in the large, healthy physique and great resistance, but also in the regular and persistent breeding characteristics. A grade Holstein almost invariably shows the predominance of the Holstein, no difference how or with what other breed it is crossed. Not only color, but other characteristics are transferred.

Their robustness makes them specially resistant to disease, whereas the more delicate breeds, such as the Jersey, have sad tales to record from the ravages of such diseases as tuberculosis. They are easy of acclimation, having penetrated successfully to within 3 1-2° of the arctic circle.

All in all, if one were choosing a human wet nurse he would look for just the characteristics in her that we find presented in a Holstein cow, viz., vigorous constitution, quiet, easy-going temperament, uninfluenced by external disturbances, good glandular development, abundance of good milk, freedom from disease or tendency to disease, a good healthy child of her own, and good family history.

In reviewing the qualities of a good milk as enumerated in the first part of this article, it will be seen that the Holstein cow fulfils most completely all the requirements except the one demanding a high percentage of solids, and even here when quantity of fat instead of percentage is considered she more than holds her own. Also in the face of the fact that a milk poor in fat is better for the young growing animal than milk rich in fat, the advantage of high percentage of fat in a small quantity of milk can readily be sacrificed to a low percentage of fat in a large quantity of milk when human food for infants and invalids is under consideration.

Whether we are to grant any such thing as a vitality peculiar to a milk or not is a disputed question. However, Professor Carlyle of the Wisconsin Experiment Station is quoted as saying that the Physicians and Surgeons' Association of Chicago recommends the milk of a certain Holstein dairyman receiving 12 cents a quart because for some reason not understood it has more vitalizing power than any other milk they can get. If such be the case it is highly probable that closer chemical and microscopical analysis would reveal the physical qualities which render the milk more digestible and assimilable, which qualities are covered by this vague expression, "vitalizing power."

Inasmuch as the milk of a Holstein cow most nearly fills all the requirements for a good milk, it will not seem amiss to go a little further into detail regarding this trade mark of Holland, if I may so call her.

For 2,000 years the Holstein cattle have been bred in the confines of Holland as milk, butter, and beef producers, and the results obtained have shown the remarkable success of these quiet, unassuming Dutch. The average American would balk at the prospects of paying a land rent of $15 to $20 an acre, and yet "here are people occupying lands which seldom are sold for less than five hundred dollars per acre, more frequently for a thousand and upwards, producing butter and cheese and placing it upon the European market in successful competition with that produced on lands less than a tenth of their value." To those of us who associate foul odors and disgusting slime with the idea of a cow stable it seems repulsive to think of human beings living under the same roof with their cows. Yet this is what the Dutch did for centuries and still are doing with extreme cleanliness and purity of life. "It is no exaggeration that the cattle every day during the winter are washed off with warm soapsuds, dried, rubbed, coddled, and talked to as if they were children, that the air in the stable is as pure as the atmosphere outside, and that no pains are spared to keep them healthy and comfortable. Under such kind treatment they become such plump, glossy, and gentle animals that they repay their owners by an enormous quantity of milk." Is it any wonder that 2,000 years of such life should produce the quiet, docile, friendly animal that we know the Holstein to be? "Their milch cows are never driven by dogs. They are rarely beaten or subjected to other rough treatment. Not that these Holland dairymen are marvelously good tempered, but they recognize the fact that such treatment is poor economy. They have learned that all nervous excitement of whatever nature lessens milk production. Hence, not only in management but in breeding they seek to perpetuate quietness of disposition. The uneasy, fighting temperament that a class of American dairymen is trying to exalt into a bovine virtue they regard as a great vice in a milch cow. Their cows are rarely seen uneasily ranging their fields. They seldom have conflicts with one another or display any disposition for mastery. They display social tendencies. They love to be petted. Children caress them without fear, and strange persons entering a herd are regarded with friendly curiosity rather than with terror or belligerency."

"It is found in more countries than any other breed, occupying more territory, and is probably producing more milk, cheese, and butter than all others combined."

Says an advocate of the Holstein: "It is hard to be compelled to bear the taunts of those who are continually throwing the 'skim milk' characteristics of the Holsteins into their owners' faces, but as long as these despised cows produce over 10 per cent. more butter and over 100 per cent. more milk than the Jerseys or Guernseys, their breeders will probably continue in their foolish ways and stick to the Holsteins."

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REMARKS ON CESAREAN SECTION, WITH REPORT OF A CASE.

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In no other field has modern surgery shown more progress than in the evolution of cesarean section, for which no greater testimony can be offered, and no better evidence shown, than by the glorious results accomplished to-day. It is no longer regarded as an operation of hazard with a most frightful mortality, but, on the contrary, possesses advantages even superior to other obstetrical procedures which are in common practice. Some salient points bearing on this phase might not be deemed amiss.

Craniotomy, with a maternal mortality ranging from 6.6 to 11 per cent., subjects the mother to greater danger, and sacrifices the life of her babe. The child, though unborn, has inherent rights to life, which demand respectful consideration. While symphyseotomy judiciously regards the rights of the child, and possibly spares his life, it assures an added risk from infection to the mother, and materially reduces her chance of recovery. The maternal death rate from this operation, according to the latest statistics, reaches as high as 14.4 per cent. With due respect for life, and with full benefit to both mother and child, cesarean section crowns the efforts of the modern surgeon, reducing the maternal mortality to 5.4 per cent., and the infant mortality to almost *nil* (Sloane Maternity Hospital, New York City).

It may be mentioned that expectancy has no place in the category of alternatives in treatment, and should be discarded as such. It has served its day, concealing with the cloak of wisdom the lamentable ignorance of the accoucheur. Facing certain death of mother or child, or both, he waited, utterly helpless to avert the bitter end; for did he not also fear the threatening warning against surgical interference in the pregnant woman? The advent of surgical asepsis and improved hospital equipment, together with the efforts of the progressive and skillful abdominal operator, stand alone responsible for the complete revolution of this supposedly established obstetrical principle.

Williams says spontaneous delivery of an ordinary full-term child cannot take place in pelves of 7 cm., that the absolute indication of cesarean section should be fixed at that point, and that the relative indications should be extended in cases with a conjugate vera of 8.5 cm. in flat pelves, and 9 cm. in generally contracted pelves. He furthermore states that if the head fails to engage in an hour after completion of the first stage, under favorable circumstances cesarean section is indicated, and that by it nearly all children will be saved, and quite as many mothers as after difficult forceps operation, or version, or craniotomy.

During the past six years five cases have come under my personal attention or treatment, four of which occurred during my service on the surgical house staff of the German and Sloane Maternity Hospitals in New York City. In the latter institution occurred the only death, which was not due to the operation, but a result of the disease from which the patient was suffering. She was brought to the hospital moribund from pulmonary tuberculosis, besides having a large fibroid, firmly adherent, and completely obstructing the parturient canal. Succumbing in the first stage of anesthesia, an instantaneous incision and a marvelously quick delivery by Dr. Edwin Cragin, gave birth to a well-nourished babe, soon lustily crying. Two other cases at the same institution, and one at the German Hospital, operated upon for contracted pelves, made uneventful recoveries. The last of the number, which furnished the incentive for this paper, occurred at the Indianapolis City Hospital during my incumbency as superintendent of that institution.

A report was made and read before the Indianapolis Medical Society, November 7, 1905, of which I beg to submit a brief summary:

On the morning of July 24, 1905, about four o'clock, the writer was called to the delivery room of the obstetric ward at the City Hospital. The patient was in the second stage of labor. The following history was given:

H. G., 17 years old, white; housewife; primipara. Mother died of pulmonary tuberculosis; father died of pneumonia; no brothers or sisters.

Personal History: Of the diseases of childhood, patient had measles and scarlet fever; no history of rickets; after puberty frequent attacks of bronchitis and of indigestion; history of slight leucorrhea; doubtful history of gonorrhea; that of syphilis, rheumatism, malaria, pelvic diseases, and injury, negative. Menstrual history, negative. No pregnancy until the present one; the first day of the last menstruation was September 15 (doubtful); three days in duration and large in amount; no pain; quickening felt at sixth month; no history of vomiting, but severe headaches and swelling of lower limbs during gestation. The late period of quickening felt by the mother dispels the thought of possible prolonged gestation, which the doubtful data of the patient's last menstruation might lead one to suspect.

The patient had complained of a sensation of giddiness since eleven o'clock on the previous morning, of uncertain vision, and of intervals of temporary blindness and repeated and frequent emesis. She had had ten eclamptic convulsions of varying intensity since noon. The convulsive attacks were accompanied by complete unconsciousness, during the intervals the patient remained only semiconscious. The pulse was tense and hard, varying in rapidity from 92 to 112; respiration from 18 to 36; temperature from 101.2° to 100.8°. The laboratory report of the uranalysis upon admission showed sp. gr. of 1012, acid in reaction, amber in color, no albumin, no casts. Labor pains had started early in the afternoon, and at 7:30 P.M., during the convulsion, the membranes ruptured spontaneously. With complete dilatation forceps application was undertaken, and at the time of my arrival a second unsuccessful attempt was in progress, the patient being under the influence of chloroform. Abdominal examination elicited clear fetal heart sounds situated posteriorly in upper left quadrant, frequency 150; uterine souffle absent. Vaginal examination revealed some edema of the vulva, a narrow parturi-

ent canal, a correspondingly small pelvis, edematous cervix and a large caput succedaneum, markedly interfering with the localization of the sutures and fontanelles. The vertex was found firmly imbedded in the left oblique diameter, occiput posterior, obstinately resisting any attempt at dislodgment. The pelvimeter recorded the following measurements: Distance between spines, 20 cm.; between crests, 25 cm.; left oblique, 20 cm.; right oblique, 19 cm.; external conjugate, 17 cm., and true conjugate, 7.50 cm. The combined conditions of eclampsia with a justominor flat pelvis, a living child, and the mother in fair condition, offered but one indication—cesarean section, for which preparations were at once instituted.

The distended bladder had reached a line midway between the pubic crest and the umbilicus, catheterization by the nurse having proved unsuccessful, on account of both the bruised and edematous parts obliterating the normal relationships, and the obstructing head of the child, which was firmly wedged in the pelvis. Further attempts to empty this viscus were thought inadvisable.

Operation was performed with the assistance of Drs. John Wallace, Larue Carter, Charles Sudranski, and Fred Dickson. A five-inch median incision through the skin and down to the peritoneum was made, carefully avoiding the full bladder, and extending upwards to two inches above the umbilicus. The peritoneum was opened and the posterior attachment of the placenta determined. Two quick longitudinal incisions four inches in length opened through the uterine wall and into the uterus, followed by immediate podalic delivery of the child with membranes, and aftercoming placenta, with simultaneous grasping of the cervix by the first assistant, which checked the bleeding admirably. The hemorrhage on incising the uterus was surprisingly small, due to the instantaneous forceful contractions of the uterine wall, distinctly blanching the muscle fibers as they receded from the cutting edge of the knife. In like manner the placenta was freed from its posterior attachment, but the fetal head was extricated with some difficulty from the bony pelvis. The child, almost black from deep asphyxia, was resuscitated by means of Schultz's method of artificial respiration, blowing into the mouth, slapping, and alternately immersing in hot and cold water until it was crying lustily.

The uterine cavity was closed without irrigation or drainage. The uterine sutures employed were a double row of muscular interrupted chromic gut, and a continuous chromicized gut suture for the serous coat, inverting the edges, and covering the whole line of suture with the omentum. The peritoneal wound of the abdominal incision was closed with a continuous catgut suture, the muscle with interrupted chromic gut, fascia with continuous chromicized gut, and the skin with interrupted silk sutures. On the eleventh day the abdominal sutures were removed; primary union had occurred. On the twenty-third day the breasts were dry; fundus not felt; lochia absent; patient out of bed.

Examination of child at birth: Sex, male; temperature, 99°; weight, 6 14-16 pounds; length, 50 cm.; caput succedaneum marked.

Diameters: Suboccipito-bregmatic, 8 cm.; suboccipito-frontal, 11 cm.; occipito-frontal, 11.5 cm.; occipito-mental, 13.5 cm.; biparietal, 10 cm.; bisacromial, 12 cm. Circumferences: Occipito-frontal, 35.5 cm.; suboccipito-frontal, 33.5 cm.; bisacromial, 35 cm.

Placenta and cord normal. No anomalies found on child except a mark, resembling an entirely healed scar, on the anterior aspect of the left leg, extending about 8 cm. above the ankle. The mother presents a similar scar above her left ankle, which she claims is a birth mark. The baby was put to the breast of another woman having an abundance of good milk, and thrived. On the twenty-eighth day after the operation the mother and child were discharged from the hospital, both in good health.

This case is reported by reason of its rather unusual nature, in that it presents a case of eclampsia in a patient with a markedly contracted pelvis. It was obvious that there was only one course to pursue, the complicating toxemia only emphasizing the urgent need of immediate action. This eclamptic attack is noteworthy, because of the absence of the usual accompanying renal elements, and exemplifies that type of toxemia resulting from fecal intoxication. There was no evidence of organic lesion other than increased tension of the pulse, with accentuated second aortic sound, a low excretion of urea, and a slight rise of temperature.

The respective pelvic and fetal measurements demonstrate that a natural termination of labor was impossible, and, furthermore, that the extrication of the living child could have been accomplished only with the aid of surgical interference. The conservative operation, viz., without castration, was done by reason of the age of the patient, assuming that with development into mature womanhood the pelvis would naturally broaden, and possibly permit of a succeeding pregnancy terminating in a natural labor.

Naturally, the first impulse was to evacuate the obstructing full bladder. However, the danger from abdominal paracentesis, preliminary to the operation, I considered much greater than the risk of hemorrhage from opening the uterine sinuses before gaining their control, by means of uterine delivery into the wound and compression of the uterine arteries. The course pursued resulted in a surprisingly small flow of blood, and in practically no escape of uterine contents into the abdominal cavity.

It is not my province to advocate the broadening of the field for cesarean section, yet it is obvious that the brilliant successes and the superior possibilities offered by this method of delivery must necessarily narrow the indications for other obstetrical procedures, which, if not primarily destructive in character, tend to increase the death-rate of the principals.

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THE JOINT AFFECTIONS OF HEMOPHILIA

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Acute affections of the bones and joints, especially in children, are so important from the standpoint of treatment, and are so serious when they have not been properly dealt with, or when proper treatment has been unduly delayed, that an occasional rehearsal of the essential points of these diseases is excusable. To those of us who at some time have neglected to recognize a beginning acute osteomyelitis in a child, and to those who have unknowingly opened hemophilic joints, repetitions of the important diagnostic features of joint diseases are not without interest. For these reasons I offer, without apology, that which is generally well known concerning a rare, but exceedingly important, joint affection.

The joint manifestations of hemophilia have been studied for years, but on account of the condition being rare, it took time to learn the truth. The

earlier writers—Elsasser, Lange (1851), Grandidier, and others—thought that these patients suffered from a combination of diseases. They contended that these peculiar cases were examples of gout and rheumatism in hemophiliacs. In 1868 Volkmann showed that slight trauma was frequently followed by hemorrhage into a joint in bleeders. Later Legg, Charcot, Lossen, Poncet, König, Redfern, Reinert, Paul Wagner, and others, showed that these joint affections were in no way associated with rheumatism or gout, but were the result of bleeding into the joint. A primary hemorrhage resulted in little permanent change in the joint, while repeated hemorrhages were followed by marked and permanent changes in both the soft and bony structures. Some of the specimens described by Legg closely resembled arthritis deformans.

The symptoms of these cases have been divided into three stages by König: (1) in which intraarticular hemorrhage is the only change; (2) after repeated hemorrhages have resulted in marked articular and periarticular changes, and have limited joint motion, and (3) when the process has resulted in ankylosis. Although the joint may pass through all of these stages, the early symptoms are the most important, and should be carefully studied. As a rule, the primary joint involvement comes at the age of four or five years (Legg). It may, however, occur shortly after birth, or be postponed until the patient is well grown. In Case 2 in this report, and in a case reported by Brigstocke, the symptoms developed a few days after birth, while Wagner (*Deutsche Zeitschrift für Chirurgie*, December 18, 1884) reports a case in which the first joint involvement occurred during the twenty-first year.

In the primary attack, the joint, with or without the history of a slight injury, suddenly becomes painful, swollen, hyperemic, and tender. The pain is extreme, while the tenderness is not marked. Evidences of fluid in the joint cavity are present. A rise of temperature is the rule. A chill is not to be expected. The symptoms subside in about a week, only to be repeated by future involvements. Every attack leaves its evidences of having done permanent injury to the joint. The swelling and limitation of motion remain; or deformity and even ankylosis may be present.

The importance of diagnosing these joint affections cannot be overestimated. The history of the case is most important. In the primary attack, a leucocyte count may aid in excluding infections, but aspiration of the joint, followed by examination of the withdrawn fluid, should be resorted to in doubtful cases. In diagnosing old cases the history of previous attacks is most important. An infection sufficiently severe to disorganize a joint would not get well in a week.

In treating acute cases, the joint should be aspirated by using a small needle. This diminishes the pain and at the same time doubtless assists in preventing the occurrence of permanent joint changes. Nothing can be done for the old cases. König opened two of these joints by mistake. An Omaha surgeon has opened another. Another was cut into in Göttingen. All of these patients died from bleeding from the operation wounds.

Case I.—M. W., a girl, six years of age, received a slight blow on her left knee by being struck by a small gate swinging in the wind. The injury did not cause much pain at the time it occurred, but four hours later the joint began to swell and was extremely painful. The pain was so severe that the family physician was obliged to give morphine to control the patient. I saw the child fourteen hours after the knee became involved and found the joint markedly swollen, the skin over the knee hyperemic, and evidences of fluid in the joint cavity. There was a marked disproportion between the pain and the tenderness. The pain was extreme, but the tenderness was not marked, while passive motion did not increase the suffering as much as would have been expected if the condition had been an acute inflammatory one. The temperature was 103° F., the pulse was 110. No chill had occurred. Leucocytes, 7,800. The child had had no previous illness of moment, but had bled from the nose repeatedly and sometimes seriously. An uncle gave a plain history of being a bleeder. On account of the elevation of temperature, it was feared that an infection was present, so the joint cavity was aspirated. About three and one-half drams of blood was removed. Cultures from this blood were found to be negative. The removal of the blood from the joint gave considerable relief. In forty-eight hours the temperature was normal and the pain gone. The knee appeared to be normal after five days. The patient was kept in bed for two weeks, after which time she became active and did not complain of the knee. Six months later she again injured the knee slightly by falling. The symptoms of the previous attack were repeated, except that convalescence was more prolonged and the swelling did not entirely disappear. Three months after this second attack the joint is occasionally painful, seems larger than its fellow, and it is clearly noticeable that the girl favors the left knee in walking or running.

Case II.—During my service as an interne in Cook County Hospital, Chicago, a male infant, otherwise apparently normal, developed, on the fourth day after birth, a condition that to all appearances was an acute arthritis of the right ankle joint. It was thought at first that in some unaccountable manner the joint had been injured. But the appearance of the joint did not suggest an injury as the cause. The character and extent of the redness and swelling, together with a temperature of 102.8° F., looked like an infective process. On the sixth day after birth the child began to bleed from the bowels. The next day blood was vomited and a few small hemorrhages appeared under the skin. There was no bleeding at the umbilicus. Death occurred on the ninth day after birth—five days after the appearance of the joint involvement. Two hundred c.c. of a 2 per cent. solution of gelatin was injected under the skin, with no noticeable effect. A post-mortem examination showed blood in the right ankle joint, but revealed no definite cause of death. This was thought to be a case of hemophilia, although the mother, on account of knowing little of her relatives, could give no history of hemophilia in the family. Bacteriologically this case was negative. Examination of the contents of the involved ankle joint showed no microorganisms. As soon as the child was dead blood was aspirated from the right auricle. This failed to produce any growth on the ordinary culture media.

Case III.—I am indebted to Dr. J. N. Goodson for the report of this case. A boy twelve years of age, who gave a history of repeated nose-bleed and excessive loss of blood following slight wounds, rapidly developed a condition that closely resembled an acute arthritis of the left knee. The pain was extreme and the swelling and redness marked. The temperature was elevated from one to three degrees and the pulse rate was correspondingly quickened. A "Spanish fly blister" was applied. In a week the acute symptoms had subsided. Previous to the illness the boy had suffered from a similar, but less severe, attack. At the age of eleven years the knee

had suffered from its first involvement. No history of traumatism preceded either attack. After the illness which has been described the left knee remained swollen and tender and its motion was somewhat limited. About six months after the second involvement of the knee occurred the boy developed, quite suddenly, a hemorrhage from the bowels. The hemorrhages continued and resulted in death after three days.

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THE MORTALITY FROM LOBAR PNEUMONIA IN HIGH ALTITUDES.

A SUMMARY OF THE STATISTICS AT THREE MILITARY HOSPITALS IN ARIZONA AND NEW MEXICO.

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Although the text-books on the practice of medicine are silent about the relation of altitude to the mortality from lobar pneumonia, many of the members of the profession who practise in such localities, and a large portion of the general public, are of the opinion that the disease is very much more fatal than at places near sea level.

The question has been studied by a number of physicians, and their opinions are by no means unanimous.

In 1882 Dr. E. Sanders,[1] in a paper on the geographical and climatological relations of the disease, based upon the returns of the eighth and ninth census, and other data, comes to the conclusion that "With increase in elevation above the level of the sea, there is a steady diminution in the death rate from pneumonia."

Hoagland[2] found that the mortality for hospitals in Colorado, in cities that varied from 4,700 to 10,000 feet above the sea, was less by 5 per cent. than the rates for hospitals in Philadelphia and other cities near sea level.

Van Zant believes that at Denver the disease runs a more rapid course.

Swan thinks that in the Rocky Mountain region the disease is more curable than at lower levels.

Connell[2] comes to the conclusion that altitude has very little to do with the mortality from pneumonia.

Major C. F. Kieffer[3] of the Medical Department of the Army has recently studied the disease at Fort D. A. Russell, Wyoming, elevation 6,195 feet, for the 36 years ending with 1903, and finds that the rate at that station was 1 per cent. less than that for the army as a whole during the same period.

Dr. A. R. Goodman[4] from the City of Mexico, elevation 7,348 feet, reported 101 cases, with a mortality of 37 per cent.

Galbraith from Cananea, Mexico, elevation something over 5,000 feet, recently reported 50 cases without a death.

The first case that came under my observation in this region was in the person of a rather dissipated rancher, who was admitted to the hospital in a critical condition with a right-sided pneumonia. Naturally, after hearing that the disease was very fatal at this altitude, I expected him to die, but, on the contrary, he made an uneventful recovery, as did all of the cases treated in the hospital that winter. These results caused me to look up the cases that had been treated in the post hospital. During the following year I was temporarily at Forts Grant and Wingate, and collected the data from those posts.

Fort Huachuca is situated in the southeastern portion of Arizona, at an elevation of 5,042 feet above the sea. Its annual mean temperature is 60°, the highest temperature recorded was 104° in July, and the lowest 7° in December and January. The winter nights are cool and at times quite cold, but the days are generally warm. The annual precipitation averages about 16 inches.

Fort Grant is about sixty miles north of Fort Huachuca, and has practically the same climate.

Fort Wingate is situated in the western portion of New Mexico, at an elevation of 6,822 feet. The mean annual temperature is 61° and the average precipitation about 14 inches.

All of these posts are west of the continental divide, and, excepting for the high winds that prevail in the spring and early summer, the climate is delightful.

The records of these posts cover the period from 1884 to 1904, and in all there were 61 cases of lobar pneumonia treated, with a mortality of 18 per cent., while for the army at large for the same period the mortality was 17.4 per cent.

The mortality varied from year to year. From 1884 to 1888 it was 37 per cent.; from 1889 to 1903 it was 10.5 per cent.; from 1894 to 1898 it was 40 per cent., and from 1899 to 1903 it was 5.5 per cent.

The distribution of the lesions was as follows: Right lung, 44 per cent., mortality, 7.4 per cent.; left lung, 30 per cent., mortality, 22.2 per cent.; both lungs, 13 per cent., mortality, 37.5 per cent.; not specified, 13 per cent., mortality, 37.5 per cent.

Thirty-three per cent. of the cases occurred in the spring, with a mortality of 19 per cent. Seven per cent. of the cases occurred in the summer, with a mortality of 25 per cent. In the winter 44 per cent. of the cases occurred, the mortality being 18 per cent., while in the fall the percentage of cases was 16 and the mortality 20 per cent.

At Fort Wingate, the most elevated of the stations, there were but eight cases, and the mortality was 12.5 per cent. At Fort Huachuca, the next lower station, there were 28 cases, with a mortality of 18 per cent., and at Fort Grant, the lowest station, there were 25 cases, with a mortality of 20 per cent.

Of the 61 cases reported herein, 54 were amongst the whites, with a mortality of 25.4 per cent; 15 cases were amongst the colored soldiers, with a mortality of 26.6 per cent., and the remaining 2 cases were in Apache Indian Scouts, neither of whom died.

The statistics here presented are too few for generalization, but, compared with the Army at large, they seem to show that elevation has little to do with the mortality from lobar pneumonia. Comparing the stations themselves, we find that the mortality varies inversely with the altitude.

REFERENCES.

1. *American Journal of the Medical Sciences,* Vol. 84, 1882, p. 101.
2. Quoted by Kieffer, *American Medicine,* March 4, 1905, p. 356.
3. *American Medicine,* March 4, 1905, p. 358.
4. Medical Record, Vol. 67, 1905, p. 56.

Fort Huachuca, Arizona.

Cost of Medical Education in England.—The student, on entering one of the London medical schools, pays £20 entrance fee, in addition to an annual charge of £30; that is to say, £170 ($850) for the five-year course. The extras for special courses amount to about £15, and books, instruments, etc., say, £30 more. When examination fees, say 40 guineas, are added, and the official register fee, £5, we get, roughly, £280 ($1,400). Clothing, board, and other necessary expenses bring the total for the five years to about £900 ($4,500).

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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CHOLELITHIASIS.

IN almost no other abdominal disorder is a thoroughgoing study of the underlying pathological conditions more essential to a proper therapeutic attitude than is the case in dealing with what may comprehensively be termed gallstone disease. In view of their greater facilities for actually inspecting many different phases of the morbid processes involved, it is not unreasonable to look to the surgeons rather than to the internists for advances in this field, and accordingly one finds that of late there appears to be something of a change in the manner of regarding the therapeutic indications in cases of this sort. The tendency now is to relegate the gallstone itself to a rather subordinate position, and to regard cholelithiasis as an infectious disease in which an inflammatory process of the gall-bladder and biliary passages is the most important feature. Kehr has but crystallized the opinion of many others in saying that "the stone in the gall-bladder is *per se* a fairly innocent formation. I am unable to recognize a cholecystitis without infection." In other words, the significance of gallstone disease lies not in the gallstone, but in the coexistent infectious cholecystitis, and in the severity of this infection and its spread through the larger and smaller bile ducts. Thus, Körte obtained positive results in seventy-six operative cases that were examined bacteriologically, and Riedel has estimated that although in Germany there are about two millions of gallstone carriers, only about one in twenty suffers any discomfort from the condition.

Aldor of Karlsbad, writing in the *Berliner klinische Wochenschrift* of September 17, 1906, not only upholds the importance of the infectious element, but expresses his belief that the origin of the disease is closely associated with catarrhal conditions in the intestine. An examination of the stools in one hundred cases of cholelithiasis examined while free from jaundice in every instance revealed evidences of intestinal disorders. Chronic constipation is held to be an especially frequent precursor of cholelithiasis, but acute catarrhal disorders are comparatively rare in this connection. Aldor also asserts that more conservatism in operating is necessary, and that prominent surgeons like Kehr as they gain in experience restrict more and more the indications for surgical intervention. These are said to comprise acute and chronic empyema of the gall-bladder, frequently recurring attacks of cholecystitis that are not amenable to internal treatment, and blocking of the common duct accompanied by chills and jaundice. The standpoint of those who would place early operation on the gall-bladder in the same category with early operation on the inflamed appendix is criticised severely, on the ground that the conditions are fundamentally different, and greater perseverance and thoroughness in medical treatment, particularly the Karlsbad cure in one form or another, are urged.

This reasoning is in sharp contravention to the opinions of many operators, particularly in this country, who see in the gall-bladder only a vestigial organ embodying grave possibilities for harm to its bearer and to be dispensed with without detriment. The question is one that will probably for some time remain a matter of individual opinion, at least until the advocates of early operation have amassed sufficient statistical material to enable comparisons to be made on very large numbers of cases.

THE KINDERGARTEN.

THERE is a certain period which may be described as extending from the fifth to the seventh year, when the young hopefuls have formulated demands as regards their occupation which can no longer be satisfied by the nursery or its methods. Yet their age is such that they cannot be subjected to the restraints of the primary school grades and the acquirement of the elementary knowledge of the three "R's." The advent of that institution which manifests its German origin in the appellation of "kindergarten" was regarded by educators and mothers as a means whereby the young child could be properly guided by the use of eyes, ears, and fingers to be prepared for later mental efforts, and so the little toddlers were gathered into a room for several hours daily and taught to weave pretty little mats with colored strips of paper, to make pretty little mud pies, to sit in a circle and sing pretty little songs with a pretty little teacher in the center of the group. All of these things appealed to the mother, who, in many instances, may have been animated by the desire to get rid for a few hours daily of the youngsters, who were at an age when getting into mischief and asking embarrassing questions was apparently their main desire. And so Froebel's idea grew in popularity, and even the public school authorities were in time compelled to listen to the clamor, establish kindergartens, and provide specially trained teachers.

To careful observers among educators the objections to restraining young children in this manner soon became evident, but their only reward was to be called "old-fashioned." This epithet will also probably be applied to N. L. North, who voices his objection to the method in a communication in the *Brooklyn Medical Journal* for June, 1906. He calls attention to the severe strain to which the eyes, only partially developed at this age, are subjected in making the various paper mats and other useless articles of which the kindergartner is so fond. It has been actually proved, moreover, that the average child who is free from care and kindergarten obligation until the seventh year will do better work than his classmate who has been occupied for two or more years in the manner described. What growing

children need is plenty of fresh air, sunshine, and exercise, and their physical rather than their mental faculties should be cultivated. The restraints imposed by confinement in a schoolroom are irksome enough after the seventh year, when it has become necessary to acquire the knowledge which our civilization has deemed it fit that we possess. Before that period the cultivation may better be extended to the body, so that the vegetative processes may be developed and perfected to such an extent that disease may be resisted and the mind prepared for the demands to be made upon it in later years.

THE FETICH OF THE OVARY.

Under the above suggestive title Van de Warker has published a timely and interesting paper in the *American Journal of Obstetrics* for September, 1906. There are still a great many gaps in our knowledge of the physiology of the ovaries, and these two little organs which play such an important part in the life history of woman have been forced to assume the burden of many responsibilities which may be said to be largely based on this lack of information. If they apparently failed to fulfill the demanded requirements, it was a simple matter to remove them; but the unfortunate outcome in many cases finally prompted a reaction to an opposite extreme, and the ovary, instead of being ablated, was punctured, burned, resected, replaced, and otherwise maltreated.

Pelvic pain in women has been almost universally referred to inflammation of the ovaries rather than to a limited peritoneal process in the same region which is known to be very frequent. Ovaritis is rare and when uncomplicated is not a painful condition. Inflammatory processes may extend all around the ovary without involving its stroma, and the painful symptoms which are ascribed to this organ are due largely to adjacent adhesions and old abscess cavities, yet, as Van de Warker points out, "inflammation of the ovary" is still the explanation offered for these symptoms. The presence of small multiple cysts has likewise afforded an excuse in many instances for an oophorectomy when none was needed. Displacement of the ovaries has been considered a factor in the production of menstrual and intermenstrual pain, although it has been shown repeatedly that an organ might be displaced to a considerable degree by adhesions or new growths, without its migration having caused any discomfort to the patient.

This continuous clamor about the ovaries has, according to the writer, its sociological reflex, for the wholesale castration which has, unfortunately, been practised by many well-meaning but misguided operators, has resulted in direct increase of the percentage of sterility. Women have had their attention drawn to this alleged ovarian disease and are thus led to give undue importance to the organs in the presence of any pelvic disturbance. Then, again, the operation from which so much was expected by the victim has only too often been without results other than unfavorable ones. It is not improbable that in many instances the patient needs more ovarian substance rather than none at all, and the removal of what remains only makes the condition worse; from all of which it appears that the author of this paper is justified in pleading for a more careful consideration of the existing condition in any case of supposed ovarian disease so that operators may be led to refrain from the indiscriminate ablation and mutilation of these organs.

Glandular Fever in Children.

Among the complaints of obscure origin prevalent in children is an acute swelling of the lymphatic glands, which, with its accompanying symptoms, was described by Pfeiffer almost twenty years ago and is now again attracting attention on account of its frequent occurrence. Abroad it also constitutes a topic of interest, and among the most important of recent articles is one by Cheinnisse in *La Semaine Médicale,* No. 26, 1906, which, however, adds very little to Pfeiffer's description of the disease, nor are we any better informed as to its etiology. The affection usually begins with a sudden rise of temperature to 103° or 104° F., pains in the joints, vomiting, and general malaise. A swelling of the lymphatic glands is soon noted, those along the posterior border of the sternomastoid muscle usually being first involved. The fever may subside in a few days, together with the glandular swelling. But there are cases in which the fever lasts for eight to ten days, other glands become affected, and the mucous membrane of the pharynx shows a marked hyperemia. Difficulty in swallowing and cough are believed to point to an involvement of the retro-esophageal and retrotracheal groups, hypogastric pain to that of the mesenteric glands. The disease often assumes an epidemic character, but the outcome is usually favorable, and only in exceptional instances do we meet with suppuration in the affected glands. There is another, a subacute form, in which the glandular swelling is accompanied by diarrhea, slight albuminuria, and other evidences of an involvement of the abdominal glands. It has become a quite generally accepted opinion that the condition is not a local process limited to the lymphatic glands, but an infectious disease which must be distinguished from acute idiopathic inflammation of the cervical lymph nodes. Strepto-, staphylo-, and pneumococci, as well as the influenza bacillus, have all been described in connection with this condition, but this fact does not constitute a factor against the disease as a clinical entity. It has been claimed that this form of adenitis is merely secondary to an infection of the pharyngeal mucous membrane. Such an argument is apparently contradicted, however, by the complications, such as an acute nephritis, and by the epidemic character of the disease. The fact that, despite the high fever and the marked swelling of the glands, there is rarely suppuration present also seems to speak for a virulent general infection rather than a localized process. The condition has been particularly prevalent in New York during the past year, and it would appear to be the part of wisdom, in view of the apparently infectious character of the complaint, to isolate these children as a matter of precaution.

A Test of Purity of Hypodermic Solutions.

The value of subcutaneous administration of medicaments is quite generally recognized, but the method has its limitations and objections, chief among which is the possibility of carrying infection into the system through the medium of the injected material. Suppuration in the form of an abscess not due to the needle puncture is not uncommon, and tetanus has even been reported in a number of cases in which gelatin has been used. Unexpected and undesirable sequelæ of similar nature have likewise followed preventive inoculations and the therapeutic employment of diphtheritic and other sera. It has thus far been a difficult matter to test satisfactorily the sterility of a serum or other material

intended for subcutaneous injection. Cloudiness is an uncertain evidence because it may be due to an ordinary precipitation of the globulins, and yet this is one of the commonly accepted signs. An Italian, Prof. Gosis, and his assistant, Giorgi, have, however, recently found that the salts of tellurium and selenium are thrown down in the form of a dense precipitate in the presence of bacterial growth (*Medico-Technologisches Journal,* No. 17, 1906). The addition of these salts to sera or other fluids intended for subcutaneous injection is said in no way to interfere with the action of the latter, as shown by numerous experiments with lymphs, sera, solutions of strychnine, morphine, citrate of iron, arsenite of sodium, and gelatin. It is essential that the fluid used should have an alkaline reaction. Details of the process are not at hand, because the discoverer, as is quite customary abroad, has patented the method.

Tuberculosis and Bronchial Asthma.

Among the very many etiological factors which have been adduced to account for the production of asthmatic attacks, it is quite commonly believed that affections of the respiratory passages occupy an important position. The influence of lesions in the upper portions of the respiratory tract has been much disputed, but the frequent coincidence of asthma and pulmonary tuberculosis in the same individual or among members of the same family makes it very probable that there exists an intimate connection between these two conditions. An investigation of this subject has recently been conducted by Soca (*Archives générales de Médecine,* No. 26, 1906), who examined seven hundred cases of bronchial asthma and found an apparently tuberculous basis in about five hundred. In some instances the tuberculous process and the asthma appeared at the same time, but in the greater number the asthma came on first, to be followed by the symptoms of the other after varying periods. Another group of cases includes those in which the patient affected with tuberculosis became asthmatic at some later period of the disease. In about two hundred cases there does not seem to have been any evident connection between the two diseases, although the writer acknowledges that in most of these the period of observation was not sufficiently extensive. There seems to be evidence enough, however, to warrant the assumption that in many instances there is present an intimate connection between the two affections, and in every case of asthma it would therefore be the part of prudence to make a careful examination for the signs of tuberculous disease of the lungs.

Twenty-four-hour Pneumonia.

A characteristic form of pneumonia to which the above title has been applied is marked by a rapid elevation of temperature with complete defervescence within a period of from twenty-four to forty-eight hours. The general symptoms and the local signs are like those of ordinary pneumonia, but they last only for the brief period stated. Nordmann, in the *Gazette des Hôpitaux,* No. 69, 1906, presents some recent statistics which show that among 1,057 cases of pneumonia this form was found ten times. A case is described which is typical of the condition. The patient was seized with a chill, vomited, and complained of intense pain in the side. The fever which followed subsided suddenly within two days, accompanied by profuse sweating and polyuria. The physical signs were those of an ordinary pneumonia, and even the sputum was typical. The convalescence was uneventful. This form of pneumonia is found to attack young, healthy individuals and the prognosis is favorable. The course of the disease and its occurrence in groups seems to point to a type of infection which, for some reason or other, has become weakened. If such a type of pneumonic infection really exists, it is quite probable that in most instances it will be overlooked, as the brief period involved would lead the physician to believe that some condition other than a pneumonia had been present.

News of the Week.

International Association of Medical Museums.—Under the auspices of the United States Army Medical Museum at Washington, through its curator, First Lieutenant James Carroll, Assistant Surgeon, U. S. A., steps are being taken for the formation of an organization having the above title. At a preliminary meeting held in Washington at the time of the session of the Association of American Physicians a committee on organization was appointed, consisting of Dr. Carroll as chairman, Dr. W. G. McCallum of the Johns Hopkins Medical School, and Dr. Maud E. Abbott of McGill University, Montreal. At the session of the Section on Bacteriology and Pathology of the British Medical Association in Toronto, on August 24, Dr. Carroll made an official announcement of the aims and objects of the proposed association. At this meeting it was proposed that there should be two grades of membership in order to include museum workers as well as those who represented institutions. It is designed that the association be essentially one of institutions rather than of individuals, each institution being entitled to a single vote through its representative, the museum representatives being the active members. The auxiliary membership is to comprise persons who are actively engaged in museum work, but these will have no vote. It is also proposed that there be an honorary membership, to be conferred upon members of the profession eminent in the field of pathology but who are not engaged in museum work. For the present it is designed that meetings shall be held triennially in Washington, at the time of the meeting of the Congress of American Physicians. The meetings are to be devoted to addresses and discussions of matters of general interest, and the publication of an *index pathologicus* is also projected to facilitate the interchange of specimens.

Hospital Conference.—A meeting of this organization of hospital superintendents will be held at the Academy of Medicine on Tuesday afternoon, October 30, 1906. The regular order of business will be supplemented by a discussion of the recently promulgated system of uniform hospital accounting. The conference will be invited to consider, also, a plan for collecting and preparing, in suitable form, the facts upon which its collective reasoning and its joint action for the "promotion of economy and efficiency" in hospital management should be based. The President is Rev. George F. Clover of St. Luke's Hospital, and the Secretary is Dr. S. S. Goldwater of Mount Sinai Hospital.

Meeting of the Illinois State Board of Charities.—At this meeting, held at Springfield, October 18 and 19, Dr. Daniel R. Brower of Chicago

intimated that politics is allowed to interfere with the efficiency of the management of the State charitable institutions, and declared that for years the interference of politicians with the officers of the State institutions had nullified efforts at good management. Governor Deneen retorted with much feeling, giving a flat denial to such intimations or charges so far as his own administration was concerned. Dr. William A. Evans of Chicago spoke on "Care of Consumptives in the State Institutions." On this point Dr. Evans said that all occupants of jails, prisons, and insane asylums should be examined by physical examination and with tuberculin for consumption. Persons with consumption should be segregated and treated by the open-air method as adapted for such cases. In view of the general acceptance of the danger of mixing the tuberculous and non-tuberculous, he asked whether, if a State did not so segregate its criminals, would it not be liable for damages to those contracting consumption? Dr. George W. Webster of Chicago presented a paper urging that the State should authorize the State Board of Health to manufacture and furnish free of cost to citizens of Illinois all the antitoxin needed for the treatment or prevention of diphtheria. He argued that this was a public health measure, designed primarily for the protection of the well. He quoted from reports of Chicago, New York, and other cities to show that antitoxin would not only prevent diphtheria, but would cure the disease, and declared that it would prove a paying investment for the people of the State by prolonging life, and also in dollars and cents, citing the experience of Massachusetts, where the annual cost of supplying free antitoxin is $10,000, while the amount used would otherwise cost the people $135,000. The main recommendations of the Board, which will necessitate several legislative enactments for their fulfillment, are as follows: The establishment of a State psychopathic institute for the education of institution physicians and the scientific study of diseases of the brain and nervous system; the establishment of compulsory training schools for nurses and attendants; the establishment of bath treatments for hopeful cases of insanity; industrial reeducation for chronic types; physical improvements to place the buildings and equipment in better condition; the establishment of a State village for epileptics; the establishment of a State sanatorium for consumptives; a second hospital for the feeble-minded.

Vermont State Tuberculosis Commission.—The members of the Vermont State Tuberculosis Commission, believing that their work is now well organized and that it can best be continued under the auspices of the State Board of Health, in their biennial report, soon to be submitted to the Legislature, will recommend the abolishment of the commission. They will also recommend that the work of the commission be transferred to the State Board of Health, and that a bill be passed by the Legislature for an annual appropriation of $2,000, the sum which the commission has expended annually in its work, to be used by the Health Board for the same purpose.

A Magazine for the Sightless.—The first magazine for the blind to be published in this country, and the second of its kind in the world, is being planned for and will probably soon be issued. The funds for the enterprise are being supplied by Mrs. William Ziegler, and it is intended to supply the periodical free of charge to all blind persons. Owing to the high cost of books printed for the blind, very many of those who have learned to read in institutions are unable to put this knowledge to use after returning to their homes. The new magazine will contain stories of the news of the day, fiction, special articles designed to interest blind people particularly, an industrial department wherein blind people may find information as to the lines of work in which they are engaged, and a correspondence department. Both the Braille and the New York point systems will be used, so that those who have learned either one will be able to read the magazine. It is desired that the addresses of as many blind persons as possible be sent to Mr. Walter G. Holmes of 1931 Broadway, New York, who is organizing the plant.

New York Infirmary for Women and Children.—This institution, which has just celebrated its fifty-third anniversary, during the last year treated 1,043 patients in the hospital, 10,809 in the dispensary, and 8,968 at their homes by visits paid by the infirmary staff. Efforts are being made to raise the sum of $30,000, which is needed to complete the total of $124,000 required for the new buildings at 2 and 3 Livingston place.

Sanatorium for Hebrew Children.—Mr. Jacob H. Schiff has presented the sum of $4,200 to this institution for the purchase of a tract of land at Rockaway Park adjacent to the present sanatorium property.

A New Disease of Cattle.—A "strange and unknown" disease with rapidly fatal results is announced to have appeared among the cattle of Kern county, California, especially among those feeding near swamps recently under water north of Buena Vista lake. A bacteriological investigation has not yet been made.

Compulsory Vaccination at Los Angeles.—Although the State law requiring all school children to be vaccinated as a qualification for admission has been neglected in many parts of the State, it has been rigidly enforced in this city during the past month. From 500 to 1,100 children have been vaccinated daily, free of charge. Unfortunately, more than 1,000 primary vaccinations have failed as a result of the hot weather and the additional exposure of the virus to high temperature en route from the East.

Septic Beards.—It is stated that a movement is contemplated to compel the dairymen of Los Angeles to remove their whiskers. Possibly the report is only the result of an effort to emphasize the fact that the very efficient and energetic bacteriologist of the Health Department is a woman.

Yellow Fever in Cuba.—Owing to the continued appearance of new cases of yellow fever, Governor Magoon has declared the districts of Cruces, Vanchula, Palmira, and Lajos, near Cienfuegos, to be an infected zone. Passenger trains running between Cruces and the other three towns will carry physicians, who will make inspections of the passengers en route. A detention camp will be established at Cruces, where nonimmunes will be subjected to five days' observation before they will be permitted to leave the infected zone.

The Fish Diet Theory of Leprosy.—Mr. Jonathan Hutchinson claims to have found, in the course of a recent trip of investigation through the Rhone valley, additional support of his theory that leprosy originates in districts in which badly cured fish forms an article of food. Cases of the disease occurring in this region were at first thought to be in contravention to this view, but on inquiry into

the habits of the peasants it was found that even in the remote regions imported fish of poor quality was used during the winter and spring.

Death of Rashid, the Leper.—It is reported that George Rashid, the Syrian leper who several months ago was driven from various cities in the East because of the dread of his disease inspired in the populace, has died in a shanty near Clarksburg, W. Va., where he had been living under the care of a nurse.

Margaret J. Plant Pavilion Dedicated.—The new Margaret J. Plant Pavilion, occupying the southeast corner of the St. Luke's Hospital property, was dedicated on October 18 by Bishop Coadjutor David H. Greer, in the presence of the Medical Board and a distinguished company of clergy and laity. The new building, which is devoted entirely to the care of private patients, comprises all the most recent features of hospital construction and was erected at a cost of $500,000, presented by Mrs. Margaret J. Plant.

Berne Conference.—The international conference recently held at Berne for the purpose of regulating the employment of women at night and the use of white phosphorus in the manufacture of matches was attended by delegates from fourteen countries. A convention to prohibit the use, importation or sale of matches made with white phosphorus was signed by the representatives of the following seven States: Denmark, France, Germany, Holland, Italy, Luxembourg, and Switzerland. A convention was also signed whereby a minimum period of eleven hours' repose for women is insured. This period includes the time from 10 P.M. to 5 A.M. to women employed in all industrial enterprises where there are more than ten workers of both sexes. The convention will take effect in two years' time.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga and amounting to about $180, will be made on July 14, 1907, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published. They must be typewritten and must be received by the Secretary of the college, Dr. Thomas R. Neilson, on or before May 1, 1907. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

A Crowded Havana Asylum.—Governor Magoon, in a visit paid to the National Insane Asylum at Havana on Sunday last, found 1,660 persons of both sexes crowded into filthy and dilapidated buildings with a capacity for 400 persons only. They were sleeping on broken cots, relics of the last American occupation. The Cuban Congress made an appropriation to enlarge the asylum, but the money was never expended, and the conditions today are very little better than under Spanish control. Governor Magoon will take steps to erect additional buildings and remedy the abuses.

To Chess Players.—The Tri-State Chess Association, an association of over four hundred chess players, most of whom reside in the Mississippi Valley, is arranging a correspondence match at chess, the Doctors *vs.* the Laity. It is desired to have physicians from every section of the United States engage in this match, and every chess-loving physician is urged to become a consultant. The match will begin early in November, entries being accepted until January 1. There is no fee attached to the match. All who will play are urged to send name and address to the president, Dr. Van Nuys, Lorain, Ohio.

A Baby of Unusual Size.—The birth was reported last week, from the lower East Side, of an infant weighing twenty-two pounds. This was the fifth arrival of a family whose previous members are said to have weighed at birth, respectively, in order, ten, fifteen, sixteen, and eighteen pounds.

The Wesley M. Carpenter Lecture.—Dr. Harvey Cushing of Baltimore delivered this lecture before the New York Academy of Medicine at its stated meeting, held October 18. The lecture was entitled "A Discussion of Some Early and Some Late Complications of Cranial Injuries and Their Treatment; Based on the Histories of Three Illustrative Cases." The cases were illustrated by lantern-slide projections.

Portrait of the Late Dr. Paul F. Munde.—At a meeting of the Academy of Medicine on October 18, Dr. A. Jacobi presented to the academy on behalf of Mrs. Mundé a portrait of the late Dr. Paul F. Mundé painted by herself. The gift was accepted with appropriate remarks in behalf of the academy by the President, Dr. Charles L. Dana.

Medical Society of the County of New York.—At the one hundred and first annual meeting of this society, held at the Academy of Medicine on October 22, the following were elected as officers: *President,* Dr. Walter Lester Carr; *First Vice-President,* Dr. H. Seymour Houghton; *Second Vice-President,* Dr. William Hallock Park; *Secretary,* Dr. John Van Doren Young; *Assistant Secretary,* Dr. J. Milton Mabbott; *Treasurer,* Dr. Charles H. Richardson.

Obituary Notes.—Dr. Alphonse B. Brown of Newburyport, Mass., died suddenly on October 18. He was operated upon for appendicitis two weeks ago and was apparently recovering his strength. He was born in Dover, N. H., was graduated from Yale College and from the Harvard Medical School. After graduating from Yale Dr. Brown joined the Peary relief expedition to the Arctic.

Dr. Charles Samuel Williamson of Brooklyn died at Rainbow Lake, in the Adirondacks, after a short illness, on October 20. He was born in Brooklyn thirty-seven years ago and was a graduate of the College of Physicians and Surgeons of New York and the University of Berlin. He had practised medicine in Brooklyn for about twelve years.

Dr. P. W. Allen of Hebron, Va., died on October 8, in his sixty-sixth year. After serving with distinction in the Civil War he entered the Medical College of Virginia, from which he was graduated in 1868. He then returned to his native county and for twenty years practised, together with his father, Dr. E. H. Allen. Since the latter's death he had a very extensive practice in Nottoway, Dinwiddie, and Amelia counties.

Dr. Max Hempel of St. Louis died on October 9, at the age of forty-three years. He was born in Dresden, and after coming to this country he in 1882 and 1883 attended the St. Louis Medical School, and the medical department of Washington University from 1898 to 1901. He was a member of the St. Louis Medical Association, the American Medical Association, and numerous German societies.

The First Harvey Society Lecture.

The first of this winter's lectures of the Harvey Society was delivered at the New York Academy of Medicine on Saturday evening last in the presence of a very large audience. The lecturer was Prof. A. E. Wright of England, who took for his subject "Therapeutic Inoculations with Bacterial Vaccines." The speaker began by enumerating the different methods used in combating bacterial infections.

There was no denying the value of the expectant method in the treatment of many bacterial infections. And yet this method had its limitations. In plague and in Malta fever, for example, it did little or nothing. The expectant method did nothing, furthermore, in localized bacterial diseases such as lupus, tuberculous glands, etc. Treatment by means of chemical antiseptics had had its vogue. It was often forgotten that any agent strong enough to kill the invading microorganisms was very liable to injure or destroy the defensive mechanism of the body. Treatment by extirpation was formerly the great remedy proposed by the surgeon. But it was found that operations on tuberculous glands or on an infected joint were sometimes followed by acute general infections, or by acute recurrences. Treatment by the determination of lymph and blood to the infected region was still widely employed, though this also was of limited application. The Finsen light probably acted by determining a flow of lymph to the part, and Bier's passive congestion treatment would come under this head. In order that treatment along these lines be effective it had been found that the body fluids, the blood and lymph, must be rich in protective substances, *i.e.* in antibodies. Treatment by Koch's old tuberculin along the principles first laid down by Koch had also been discarded because of the many failures. Finally there was treatment by antisera, inaugurated by von Behring.

Professor Wright then discussed briefly the antibacterial substances occurring in the blood, namely the agglutinins, bactericidal substances, bacteriolytic substances, and opsonins. He described the latter as substances acting on the bacteria and changing them in some way so that the bacteria were more readily taken up by the phagocytic leucocytes than were bacteria not so treated. The change in the blood of a patient following the inoculation with bacteria was illustrated by the following example: A patient who for years had suffered from a severe form of acne, *i.e.* infection with staphylococcus, was inoculated several times with dead cultures of staphylococci. After a time the acne was completely cured. When the patient was almost well his blood was examined by mixing one volume of his blood serum with one volume of fresh washed human leucocytes and one volume of an emulsion of staphylococci. On making smears of this mixture it was found that each leucocyte had engulfed on an average 26 cocci. The same test, when a normal person's serum was used, showed only 13 cocci per leucocyte. The inoculations of staphylococci had therefore raised the opsonic power of the patient's blood. Compared with the normal individual, and regarding that as 1, the patient's opsonic index was 2. The researches of Wright and his pupils had shown that the change was one of the serum, and not of the leucocytes.

"It has been found that the inoculation of a bacterial culture is followed at first by a decrease in the opsonic power of the inoculated person's blood. This decrease is then succeeded by an increase to a point greater than the original. The drop is called the 'negative phase' and the rise is the 'positive phase.' If too large a dose of culture is inoculated the negative phase is very marked and the positive phase is insufficient to restore the opsonic strength to the original point. If there are several such inoculations or if the inoculations are given at improper intervals of time there is an accumulation in the direction of the negative phase. The end result is a lower opsonic index than was present originally. If the inoculations are well planned as to dosage and intervals of time there is an accumulation in the positive phase. The end result is a higher opsonic index than was originally present. This is what we strive to achieve in our so-called 'vaccine treatment,' and this is what one finds quite difficult.

"By examining at frequent intervals the blood of a boy suffering from hip-disease some interesting facts were brought out. The boy had not walked for some time prior to the first blood examination, and was carried into the laboratory. Directly after the blood was drawn for the first test the child was made to walk briskly about the laboratory for about fifteen minutes. Then the blood was tested again, and it was found that there had been a sharp drop in the opsonic index. Then six other examinations were made at twenty-minute intervals, and these showed that the sharp drop ('negative phase') was succeeded by a rise, and that after several more slight changes the blood showed a slightly higher index than originally. This experiment, then, showed that the exercise which the boy had undergone had resulted in an 'autoinoculation,' *i.e.* the boy's system had been flooded with some tubercle virus. If tuberculous patients are allowed to rest quietly in bed they have no autoinoculations and their opsonic power remains low. They therefore do not do well. If they are judiciously exercised, however, they become autoinoculated and increase their opsonic index. These are the cases that do well. The same autoinoculations can be brought about by other means, *e.g.* massaging a joint or a mass of glands. With localized lesions, especially if they are small, there is little or no autoinoculation. The tendency of such cases is therefore not to get well.

"Cases of tuberculous adenitis, when seen very early, almost always have a low opsonic index, *i.e.* there is no autoinoculation. Later, when there is much involvement and more absorption of tuberculous poison, there is a high index. The index in beginning phthisis is also low. The good that is often done by simple surgical interference is probably due to an increased opsonic power produced by the autoinoculation brought about. After, for example, paracentesis of the abdomen in cases of tuberculous peritonitis, there is almost always a rise of opsonic power. Disturbances of this sort, however, may be too severe, so that we often see such operations followed by an increased severity of the disease. The same is true of massage of the involved parts. These dangers are avoided in artificial inoculation, and this then is what we now employ."

Professor Wright then gave histories of a number of cases he had treated. An interesting case was one of streptococcus pyemia, in which the patient had done poorly under antistreptococcus serum. The organism was cultivated out of the patient's blood and she was then treated with appropriate doses of these cultures. Improvement began with the increase of the opsonic power and continued to complete recovery. There was no necessary agreement between height of fever and opsonic index.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE NEW SESSION—INTRODUCTORY LECTURES—MEDICAL EXHIBITION.

LONDON, October 5, 1906.

THE winter session has begun and the schools are again at work, most of them having opened on Monday, though some delayed until Tuesday. The interest of the introductory lectures still maintains itself, although the London Hospital and Bart's are among those that have discarded the old-time mode of beginning the medical year. Charing Cross Hospital was again easily first in anticipation by making the Huxley lecture the introductory and securing Professor Pawlow to deliver it, thus drawing a very distinguished audience. The realization of the expected pleasure was in some cases feeble, as the Professor spoke in German and we are not all linguists. He took for his subject the "Scientific Investigation of the Psychical Faculties or Processes in the Higher Animals"—not exactly an elementary study, but rather, as he remarked, so exceptional that it could not possibly be subjected to successful analysis, for it was prepared by laboratory methods. Dealing with the highest vital phenomena, science could not escape misconception, and therefore opposition. Science need only attempt to determine the connection between the responsive faculty of the living organism and given natural phenomena. He described how nerves responded not only to direct but to indirect stimuli and developed a faculty of discrimination, and he held that the introduction of the idea of conditioned reflexes into physiology was justifiable. The investigation of these reflexes was of great importance to the physiology of the higher central nervous system. Hitherto ideas borrowed from psychology had been employed in physiology, but should now be discarded. Physiology had yet to attack problems which so far had perplexed humanity, and immense advantages would ensue when investigators treated them as other natural objects and the human mind contemplated itself from without instead of from within.

Sir A. Rücker proposed the vote of thanks, which was seconded by Professor Starling, who remarked that Professor Pawlow had shown how to experiment on living animals without anesthetics or causing pain. Moreover, his work had caused the text-books of physiology to be rewritten in the last ten years.

At King's College Mr. Pridgin Teale gave a retrospective lecture. It was, he said, fifty-four years ago that he entered for his first session, and he was one of a small number of living men who had taken part in the greatest revolution of medical science and surgical practice the world has known. He remembered when the school theater was used for both operations and post mortems and Miss Nightingale went as nurse to the Crimea. He passed on to describe many advances as illustrated at the Leeds Infirmary, to which he became surgeon twenty-two years ago, and the part taken by Kings' men in medical progress. Referring to the removal, he said he had looked over the plans for the new buildings and greatly admired the way in which every possible requirement was provided for. He believed the new hospital would be one of the most perfect in the Kingdom. The four hundred beds arranged for could be increased to six hundred. It is expected the building will be begun early next year.

At University College the Dean reported that there were 242 medical students, 91 of them new entries. Professor R. J. Godlee gave the address, which was on the "Past, Present, and Future of the Medical School." The college, he said had been at work for seventy years, and it now had as perfect a hospital as it was possible to get on a limited site in the center of a great population. The school of advanced medical studies in connection with the university was an experiment to be watched with intense interest. Now that the new hospital is complete, there are 277 beds available for use. The new nurses' home and the house for maternity students are to be ready for occupation next year.

At the Middlesex Hospital, the Lord Mayor, accompanied by the Lady Mayoress and the Sheriffs, attended in state the opening of the school. There was a large attendance, including the two Presidents of the Royal Colleges of Physicians and Surgeons, both of whom are connected with this hospital. The address was given by Dr. Campbell Thomson, who dealt with "Hospitals and the Public," pointing out how many people failed to see that a hospital was not restricted in usefulness by the locality it occupied, that the proper persons to receive its benefits were the suffering poor. The correlation of the different forms of medical relief for the poor was urged as of great importance. People should be encouraged to take more interest in hospitals, and then they would see that nothing that skill and money could do was spared to promote the comfort and welfare of patients, and that the "horrors of hospitals" had no existence outside the imaginations of persons who had never visited one. There was danger in the apathy of the people lest a financial crash might lead to a call for aid from the rates. Medical education, he held, must look to endowments. At this school Mr. Henry Morris had started with £1,000, and no doubt other gifts would follow. Dr. Thomson also referred to the cancer research at this hospital.

The Lord Mayor delivered the prizes and expressed great interest in hospitals, and this in particular as one he had long watched for. He sincerely hoped no more would be heard about hospitals going on the rates. He trusted that would never happen in this country.

At St. Mary's Hospital Dr. Alcock was the lecturer and took as his subject the "Theory and Practice of Medical Education." He managed to offer a novelty in regard to this well-worn theme by collecting from practitioners in town and country lists of cases attended. He tabulated 500 such cases by way of showing what actual practice consisted of. From these he deduced that the preliminary and intermediate sciences were of great use indirectly, less so directly. It was not, he said, the actual facts of biology, for example, that were used, but the scientific methods, and therefore these subjects should, he thought, be taught in a different way from the strictly professional branches of study. The opinions of the practitioners who had been asked were against shortening the curriculum or lowering the standard of science. Taking these opinions and the lists of cases, he concluded that better results might be obtained by a rearrangement of the curriculum—the elementary courses being completed in two years and the third year being given to advanced study in one of these subjects. The advantages offered at St. Mary's by the fully equipped laboratories were also referred to.

At the Leeds University School Sir J. Crichton-Browne distributed the prizes and delivered the address. Though alive to the example Germany set in providing research laboratories under professional directors, he did not share the wholesale admiration of everything educational in that country, nor timorous forebodings of friendly rivalry. But England had been remiss, and her neglect of medical education amazing. To keep it up to the level of other countries, assistance must come from the State or from the overflow of plethoric private coffers. Sir James then passed to a spirited attack on neomaterialism. He said many physiologists aimed at bringing their science into line with physial sciences and showing that physiological phenomena were but complex problems of a physical or chemical nature, but to do this they must deprive their science of its distinctive character; for if it was the sum of scientific knowledge concerning living beings, it must cease to be physiology when it denied the existence of life and reduced what had hitherto been regarded as vital functions to phenomena of an inorganic nature. It was admitted that many aspects of living things which at present defy exact expression in accordance with physical and chemical conceptions—nay, it was admitted, that our present knowledge of living tissues, complicated as they are, was extremely limited; and yet every little advance in physiological knowledge was made a pretext for proclaiming the final dethronement of life and the absolute dominion of brute force over vast regions of which it was incapable of taking effective possession. The discrepancies between living and nonliving phenomena had not been explained away. Behind every going concern and working mechanism, like a watch, there was the life that had made and started it and wound it up, and without which it would not exist or go; and yet they were asked to believe that the most intricate and marvelous of all mechanisms, the human body, had no life either in it or behind it. The new materialists, having dissipated the phantom of vitality, left us plants and animals, more or less complicated arrangements of proteid substances responding in a very simple way to the ordinary physical forces we see around us. They left us the brain, a mass of gluelike substance, nine-tenths water, with a little phosphorus thrown in, traversed by waves of force and nothing more. They left us man—a motorcar, self-made and self-started, with no passengers and no chauffeur, moved by a series

of explosions or redistribution of energy, and rushing on to inevitable destruction. The wild speculations of these neomaterialists were not in accordance with the sobriety of medical philosophy as hitherto understood. True, it seemed that in their case "knowledge comes, but wisdom lingers." But wisdom was the best product of a university. Whatever theoretical tenets they might adopt, whatever physiological system, they would, when they found themselves as practitioners at the bedside, become ardent vitalists. Their aim and object in their career would be to keep alive that mysterious spark that glowed in their patient, an emanation, as it were, of that vital activity that gave warmth and movement to the thin and fragile film of organic matter that was spread over the surface of the earth. Their object and aim would be to obviate the tendency to death in the pursuit of that mission, and all diseases were included in the tendency to death.

The lecturer then spoke of the lives thrown away by preventable diseases and the hope of further reduction in this waste.

At the London Medical School for Women Professor Byers of Belfast delivered the address. He pointed out the work which was ready for educated women with trained powers. To those who had qualified, he said, many public functions offered them a scope for their energies, *e.g.*, inspection and supervision of school children. The London County Council had given six out of twenty appointments as assistant medical officers to former students of the School for Women, and their duties included the inspection of school buildings and reporting on the health of the scholars. He warned the students that they were entering the most exacting profession, but none was more useful or unselfish, and concluded by urging them to practise "their calling as much as possible free from every trace of narrowness, bigotry, or superstition; to be tolerant of the opinions of all races and sects, ever keeping by them the glorious example of Him who went about doing good."

Dr. Donald MacAlister, President of the General Medical Council, went to Manchester and delivered the address, which he devoted to the powers and work of the council over which he presides. He pointed out precisely the limitations of the council and showed how unreasonable are the expectations of some persons who blame it for not doing things it is impossible for it to do. Many sober critics of the council might advantageously study this address, though I cannot go so far as to assert that the council has done all it might do.

Besides the introductories there have been dinners at the several schools, and where no special lectures were given these reunions have assumed additional importance. Some other receptions have also been included in the opening ceremonies.

The *British and Colonial Druggist* is to be congratulated on the second medical exhibition organized by its proprietors and staff. It opened on Monday and has been largely attended all the week. It closes tomorrow. This exhibition has been strictly confined to the medical profession. All the latest novelties in medicine, hygiene, dietetics, appliances, and so on, were on view. A handsome reception room, where light refreshments could be had and where first-class music was provided, added to the attractions, and it was an admirable feature that the public were rigidly excluded. There were more than one hundred stands of exhibitors, and they could be examined with the attention they deserved.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

CLIMATIC TREATMENT OF DYSENTERY—A NEW GOVERNMENT HOSPITAL AT BAGUIO—SUBSIDENCE OF THE CHOLERA—A CHOLERA SERUM—QUARANTINE—GONGOSA—THE YAWS SPIROCHETE—THE PROTECTIVE VALUE OF VACCINATION.

MANILA, September 1, 1906.

In the annual report of the Bureau of Health for the fiscal year ended June 30, 1906, the fact is mentioned that of the dysentery cases treated in the Government Sanitarium at Baguio, which is at an elevation of 4,716 feet above sea level, it is interesting to note that 80 per cent. recovered. When it is remembered that the cases of dysentery treated at Baguio are recruited principally from cases which have resisted all medical treatment in the Civil Hospital at Manila, the important point is forcibly brought out that climate is a most important factor in the treatment of this disease. The 20 per cent. that were not cured showed a marked improvement in condition. The average period of treatment was sixty-five days.

In this connection it is interesting to observe that the Government intends erecting a modern hospital at Baguio. The building will cover, roughly, an area of 200 by 75 feet, and will consist of a central portion with a wing on each side. The greater portion will be one story only; that portion immediately above the center will have two stories, and will be divided into six private rooms. The central portion of the building will be used for administration purposes. The wings will have a capacity of fifteen beds each, and will be arranged on the ward plan. An operating room, isolating quarters, and all other provisions made in modern hospitals will be provided. The building is to be erected on a high knoll, from which a most beautiful view may be obtained to the east, south, and west.

There has been another marked diminution in the number of cholera cases for the past two weeks. For the first half of August there were reported 131 cases and 125 deaths in Manila, and 1,064 cases, with 814 deaths, in the provinces; while, during the last half of the month, there were 74 cases, with 67 deaths, in Manila, and 576 cases, with 499 deaths, in the provinces. The mortality is also gradually being lowered, and now has reached something under 60 per cent. During the past week Manila has been almost entirely free from cholera, with the exception of a few cases which occurred in Bilibid Prison. It seems almost impossible to keep this prison free from the disease. The infection, in all probability, is correctly attributed to the prisoners who are permitted to work outside, thereby being enabled to smuggle food into the prison. It does not seem possible that it could be introduced in any other way. When it is remembered that there are over 3,000 persons crowded into an area usually occupied by a small city block, it will be seen that so long as there is one case of cholera in the prison it is a grave menace to the institution, because an epidemic of large proportions might easily result.

Dr. Dernier, the French bacteriologist, of whom mention has already been made, is still conducting his experiments in the use of a curative cholera serum in the treatment of cholera cases. Owing to his work not yet having been completed, it is not possible to give a scientific report of his results, but it may be stated that his serum, made from dead cholera bacilli, is giving unsatisfactory results. He has discontinued its use and is now engaged in injecting a serum which is made from living vibrios. In all, he has treated twenty cases, of which fourteen died. Of the six to be accounted for, several are still in a precarious condition.

Still further modifications have been made in the outgoing quarantine which has been imposed upon vessels leaving cholera infected ports in the Philippines, since the outbreak of cholera, August, 1905. The new order provides that interisland vessels whose first port of call is one of the ports at which a regular surgeon of the United States Army is stationed, are permitted to proceed direct to such port, and complete the detention period of quarantine at port of arrival. In this way the period occupied by the voyage is in reality deducted from the quarantine, thus facilitating business very much.

Dr. E. R. Stitt, of the United States Navy, has just returned from Guam, where he went for the purpose of making a study of one of the diseases with which the natives of that island are afflicted, and which has been the subject of frequent comment in the lay journals. Dr. Stitt reports that the disease ordinarily referred to as being peculiar to Guam is gongosa, which is not only found in Guam, but in the Fiji Islands. It is more prevalent during certain seasons of the year, and he was not able to observe any cases in their incipiency. However, from reliable testimony he was informed that the disease usually commenced in much the same manner as diphtheria, the first symptom observed being a whitish membrane upon the tonsils and fauces. This has a corroding action and gradually destroys the tonsils, uvula, and soft palate, and then gradually eats its way through the hard palate and later attacks the vomer. In some cases the disease travels up the tear ducts and then destroys the eyes. A great many microscopical examinations have been made and scrapings taken from the seat of the disease, but so far nothing characteristic has been found. Dr. Stitt has brought with him a considerable amount of material, which he hopes to work up later in the laboratory. The therapeutic test for syphilis has been applied in a number of cases without any appreciable result, and from the appearance of the disease it is not believed to be syphilis.

Dr. Stitt also reports that he found the same spirochete in cases of yaws at Guam as are reported by Celli in the cases of yaws at Ceylon.

Another most striking illustration of the value of vaccination against smallpox is shown by the figures from two of the provinces which have recently been vaccinated. In the province of Cebú for many years past nearly 2,000 persons

annually lost their lives from smallpox, while during the past year, during which the vaccination of the province has been going on, only about 200 deaths have occurred. In the province of Cavite, in which the vaccination was completed about a year ago, and in which province for a number of years past 750 deaths occurred annually from smallpox, not a single death from smallpox has been reported since the province was vaccinated.

Progress of Medical Science.

Boston Medical and Surgical Journal, October 11, 1906.

Observations in One Thousand Operations.—F. B. Sprague analyzes the records of his personal cases. He prefers ether for an anesthetic. The tonsils, if demanding removal, are left to the last, unless they are very large and prevent free access to the nasopharynx. Immediately after operation an application of glycerite of tannic acid is made to the denuded areas of the fascia and pharynx. In general the paper covers only familiar ground.

Acute and Chronic Indigestion.—J. B. Deaver refers to various conditions, the expression of which is either acute or chronic disturbances of digestion, and underlying which some lesion may be present which calls for surgical intervention. Or there may be abnormalities of the circulating and nervous symptoms. When patients complain of pain following the ingestion of food, vomiting, hematemesis, with or without anorexia, are pale and weak, and have lost much flesh and experience relief by restricted diet and rest in bed, this must mean in almost every instance organic disease of the stomach. Deaver does not believe that modern methods of examining stomach contents are of much service in making a differential diagnosis between functional and organic disease. Careful physical examination of the abdomen and other regions of the body with a reliable history of the patient is of much more value than chemical examinations. The great disease which is liable to be overlooked in an attack of so-called acute indigestion is appendicitis. In every such attack careful abdominal examination should be made. In this disease the sequence of symptoms is nearly pathognomonic, pain, then vomiting, and lastly localized tenderness. In intestinal obstruction the same caution is called for. Frequently the acute pain of strangulation precedes the vomiting by a number of hours. A careful search of the hernial rings will frequently reveal a strangulated hernia. Diseases of the biliary passages are another prolific cause of acute dyspepsia. In regard to chronic indigestion Deaver believes that if a patients complain of persistent or recurrent indigestion, which is relieved not at all or only temporarily by medical measures, we are surely justified in offering them as a solution of their structural disorders, some form of mechanical remedy; in short, some form of operation.

New York Medical Journal, October 13, 1906.

X-Rays in Neuritis.—A preliminary report on this field of radiotherapy is made by J. H. Comroe, who records his results in six cases, some acute and some chronic. He presents the following conclusions: (1) The *x*-ray should be employed in the treatment of neuritis only after all other judicious methods of therapy have failed. (2) The exposure should be directed over as wide an area as may be safe, and frequently repeated in the beginning. (3) The strength of the current and duration of the exposure should, as a rule, be in direct ratio to the approximate distance of the affected nerve structures from the cutaneous surface overlying them. Idiosyncrasies must be carefully sought. (4) Relief if obtained usually makes its appearance early in the treatment. (5) Obstinate cases should receive "tonic" treatment with a medium tube for some time after the patient has been apparently cured so as to further assure permanency. (6) Postoperative treatment in nerve resections, as shown in Case IV (and also by Faber), is highly recommended.

Hydrotherapeutic Treatment of Chronic Rheumatism.—J. J. Levy has obtained much satisfaction from the following plan of treatment: (1) The patient is given an electric-light bath, temperature, 150° F., duration twenty minutes, to be followed by a circular douche 90° F., duration one minute; this is followed by a Scotch douche to the affected joints, and this in turn is followed by a general massage with special attention to the affected joints or muscles. Three treatments a week are usually sufficient for these cases. The Scotch douche referred to consists in the alternate application of hot and cold water. The author styles it "the douche of thermic contrasts." His apparatus has three tubes placed side by side, one for live steam, one for cold water, and the third gives any desired temperature, as the thermometer is in contact with the mixing chamber. He usually employs steam and cold water for the Scotch douche, and by means of the rapid alternation in the application of live steam and cold water to the affected parts, a most profound local effect is produced, and a marked hydrotherapeutical reaction is brought about. The value of this douche consists in the combination of thermic and mechanical stimulation, the mechanical effect is produced, because the water comes out of the tubes under pressure which can be increased as desired, while the marked thermic stimulation is due to the tremendous difference in the temperature of cold water and steam. The increase of vital activity brought about by the reaction following the Scotch douche becomes of great value in restoring the functions of diseased parts. On account of the improved circulation absorption of the deposits in the joints is brought about.

Urethral Diverticulum and Cul-de-Sacs.—N. E. Aronstamm describes two forms of these urethral peculiarities: (1) The diverticulum, a short, narrow, collapsible pocket opening into the urethral canal, from one-quarter to one-half an inch in length, of the caliber of a knitting needle, unyielding and nondilatable; and (2) the cul-de-sac proper, a larger, longer, and more distended pouch stopping abruptly, or, rather, terminating blindly in the mucous lining of the urethra, seldom exceeding one inch in length, and somewhat larger in caliber than the preceding one. Both of these varieties are congenital anomalies, rarely found further down than the first two inches of the anterior urethra, and are in most instances situated on the floor of the canal, thus distinguishing them from enlarged and patulous urethral follicles which are commonly located in the roof of the urethra, in proximity to the fossa navicularis. The author describes the mode of formation of these structures from the embryological standpoint. Their symptoms simulate those of a mild urethritis. Painful micturition and urinary tenesmus may be prominent features. If they become implicated in a gonococcic process, various strictures may form. The first principle of treatment should be to locate the exact site of the difficulty. This can generally be done with the urethroscope, small sound or probe, or fine olivary bougie. The lacunar fold is then slit open with a small knife or tenotome throughout its entire extent to the very bottom of the urethral mucosa. Or, after the site of the channel or sac has been located, a urethrotome may be introduced, and by a sweep of the delicate blade the pocket is divided. Local anesthesia usually suffices to accomplish this result. As soon as the fold of mucous membrane has been severed, this should be immediately followed by the insertion of sounds in ascending sizes until the largest can be conveniently passed, and left *in situ* for at least ten minutes each time. This must be continued for a week or ten days to prevent the too premature closure or healing of the divided edges or subsequent fibrous contraction, which may ultimately lead to stricture formation. Rarely is the fold of mucous membrane so extensive as to require ablation or removal *in toto*. The two lateral bands eventually become atrophied and at a level with the urethral canal. Another method that may be utilized consists in the dilatation of the urethra either by means of a urethral dilator, or, what is still simpler, with an ordinary dressing forceps gently introduced and expanded to its utmost limit, provided, however, that the cul-de-sac is not situated too far posteriorly, severing the band by means of small scissors, and then proceeding in the manner already delineated.

Journal of the American Medical Association, October 20, 1906.

Simultaneous Nonrelated Tumors in a Mouse.—E. E. Tyzzer reports the finding in an old uninoculated mouse, kept for breeding purposes in the laboratory, of two nonrelated primary tumors, an adenocarcinoma of the lung and an adenoma of the kidney. Inoculation of other mice with the lung tumor resulted negatively. This is perhaps accounted for by the fact that it contained no cells in mitosis. Nuclear inclusions that were found are not regarded as specific, since they are occasionally found in the tissues of other mice.

Sodium Citrate as a Modifier of Cow's Milk.—The chemical action of sodium citrate as a modifier of cow's milk is discussed at some length by J. W. England,

who gives it as his opinion that sodium citrate, which is a neutral salt, has no decomposing action on casein calcium in the cold, and that, when the citrated milk is brought in contact with the gastric juice, the sodium citrate is decomposed into sodium chloride and free citric acid; and that the sodium chloride has more important physical and chemical properties in the digestion of cow's milk than has hitherto been suspected. He considers it very doubtful whether the free citric acid has any more important therapeutic value than the hydrochloric acid of the gastric juice stimulated in production by the presence of the sodium chloride. The article is illustrated.

Publicity as a Factor in Venereal Prophylaxis.—P. A. Morrow declares that the concealment of facts regarding venereal diseases is a factor in perpetuating the evils attending them. The value of publicity in the suppression of evils has been amply demonstrated of late, but the venereal evil furnishes the most conspicuous example of an evil that flourishes in darkness and owes its power for mischief to the obscurity to which it has been relegated by traditional prejudice. Publicity here is desirable, he says, and is absolutely indispensable to the success of plans for prophylaxis. To the question, is publicity practicable, he answers that it is, and that the sentiment that forbids the open discussion of the subject has no place in the counsels of preventive medicine. Though the newspapers are not available, physicians can work with tracts, pamphlets, conferences, lectures, meetings of medical societies to which the public is invited. Another valuable agency would be a journal of popular medicine, devoted to the study and prevention of all communicable diseases, especially those spread in the ordinary relations of social life. Such a one has already been projected. He believes the present a favorable time to dispel the indifference of the public regarding this evil and to bring about reform.

Pleuritic Exudates in Children.—M. Germann describes pleuritic effusions as they occur in childhood. She finds this condition rather common before the fifth year of life and rather more frequent on the right than on the left side. The symptoms are often acute in onset and liable to be taken for pneumonia, which frequently coexists. In the serous form the prognosis is generally good, and if there be no serious displacement or disturbance of respiration or circulation an expectant treatment may be all that is required; otherwise aspiration is advisable. Empyema, however, seldom recovers without surgical treatment. She favors rib resection in these cases and describes Dr. J. D. Bryant's method of performing thoracotomy. Four case histories are given; in three of them thoracotomy was performed.

The X-Rays in Leukemia and Hodgkin's Disease.—A. H. Roth reports two cases treated with the *x*-rays: one of Hodgkin's disease, in which the relief of symptoms was obtained, though they probably may recur unless the treatment is continued, and one of splenomyelogenous leukemia, in which the continued application of the rays for over a year has brought the blood down to the normal and largely reduced the splenic enlargement. Arsenic used as an adjunct to the treatment seemed to be of benefit. The first effect of *x*-ray treatment was to increase the number of leucocytes in the general circulation. This was accompaied by a large increase of degenerate cells, most of them disintegrating myelocytes. No toxic symptoms have developed in the patient, and though the blood count has remained normal for two months, the continued use of the *x*-ray at intervals is advised to prevent possible recurrence. The application was made in the leukemic case over the spleen and long bones with a hard tube at a distance of ten inches from the anode, the applications lasting from seven to fifteen minutes. In the case of Hodgkin's disease the *x*-ray treatment was made over the enlarged glands.

Streptococcus Leptomeningitis.—E. E. Southard and R. R. Stratton report a series of cases of leptomeningitis from streptococcus infection, the studies being given in detail with autopsy results. The lesions reported do not differ in any constant features from those reported by Southard and Keene in 1905 for pneumococcus. The two organisms, in their action on tissues, would apparently fall in the same group. The durations in the streptococcus cases were rather greater than in the pneumococcus ones, but the microscopic findings were very much alike in each. The vascular lesions may serve to distinguish the pneumococcus-streptococcus cases from those due to the meningococcus, but it would be less easy so to utilize them in the differentiation from the tuberculous cases. It is rare, the authors remark, to find any simple lesions in acute leptomeningitis that are necessarily incurable, and they suggest that it is probable that in many cases the patients die of toxemia, which may vary with the extent of the exudate. They say, however, that the amount of exudate observed at an autopsy may mislead the observers as to the amount of the toxemia, as large portions of the pia may be sterile while other parts may contain multiplying organisms. Differential studies of the exudate in different portions are necessary to reveal the conditions, and such studies may be of clinical importance. The authors remark that lung lesions have probably been overestimated as producing meningitis, and that the streptococcus cases seem to be more pronouncedly cerebral, or primary from the start, than are the pneumococcal or staphylococcus cases. The early glioses observed in several of the cases here reported are of general and clinical importance, and will be more fully noted in a future paper.

The Lancet, October 6, 1906.

Fracture of the Sternum.—The patient of J. F. Alexander, a man of sixty years, fell from a loaded wagon eight feet to the ground, striking on his head and being somewhat stunned. On recovering consciousness, he picked himself up and went home, remaining in bed three days, as he "felt stiff when he moved." He then consulted Dr. A., who found a contused area covering nearly the whole of the front of the thorax and a ridge crossing the chest transversely at the level of the second intercostal space. A diagnosis was made of a transverse fracture of the sterum just above the level of the attachment of the third pair of costal cartilages, and the ridge was caused by the slipping upward and forward of the lower fragment of the sternum, with the attached third pair of ribs, on to the upper fragment. The third rib on the right side was also fractured close to its junction with the costal cartilage. On making the patient lie down on a flat couch, without a pillow under his head, the displacement was easily reduced, but returned at once when he got up. He was sent home and told to lie on a hard mattress flat on his back, and while in this position, with the displacement reduced, the chest was firmly strapped. This at once relieved all pain, and within three weeks the fracture had united firmly in a good position without the formation of much callus. The author considers the case remarkable, in that, apart from the actual injury, symptoms were wanting. There was no cough, no hemoptysis, and no dyspnea. Some observations are added on the mechanics and general features of sternal fractures.

Notes on Purin-Free Diets.—W. A. Potts defines as purin bodies all those constructed on the base C_5N_4. Those of ordinary occurrence are uric acid, caffein, theobromin, xanthin, hypoxanthin, guanin, and adenin. They occur in meat, meat extracts, and especially glandular organs, as the pancreas and liver. Small amounts are found in many vegetables. A purin-free diet is of little value unless adequate attention is paid to other essential digestive factors. It is useless to abandon meat and live on high-flavored dishes with cream, etc. A graphic table is presented, showing the relative nutritive values in some sixteen common articles of diet. The purin-free list includes milk, cheese, white bread, macaroni, potatoes, apples, bananas, raisins, dates, and nuts. The plan indicated is advantageous in both chronic and acute maladies—functional as well as organic. Potts believes that functional disturbance is but a warning too often neglected, of the ultimate onset of organic disease. He then discusses methods of preparing and serving the various purin-free substances. Treatment along these lines avoids the liability of acute rheumatism which so often follows maladies, through the course of which stimulants and meat extracts are given. The author adds that "if our large hospitals, instead of constantly appealing for increased subscriptions and pandering to the popular taste, would devote their energies more to working out the best dietaries on these lines, and to instructing the public how to live healthily, their balance sheets would be more satisfactory and their needs for extension disappear.

The Injection of Antitoxin in Diphtheria by the Intravenous Method.—A. O. Bisson gives statistics of a certain hospital of 660 cases of diphtheria, with 92 deaths. The total mortality rate, therefore, was 13.94 per cent.; of 200 cases treated intravenously, the rate was 16.5 per cent. All very severe cases were chosen for intravenous treatment; hence, probably the higher rate. The author summarizes various papers which have appeared on this method of giving antitoxin and

describes the two methods, viz., by incision and direct puncture of a vein. In the former an anesthetic (ethyl chloride or chloroform) is required, but none in the latter. The bend of the elbow is the site usually chosen. The general impression derived from the paper is that the intravenous method possesses no advantages over the hypodermic as usually followed.

British Medical Journal, October 6, 1906.

The Wrong and Right Use of Milk in Certain Diseases of the Skin.—L. D. Bulkley summarizes the sequence of events occurring in the stomach during ordinary digestion, dwelling particularly on the "alkaline tide" which comes on after the organ has finished its active share in caring for an ordinary meal. This alkaline tide occurs at varying periods of time after the ingestion of food, dependent upon many circumstances; it may begin an hour or so after a very small amount of digestible food, or it may be delayed four, five, or even many more hours after a very heavy or unusually indigestible meal, or with very weak or sluggish digestion. This should constantly be borne in mind. It is only when this "alkaline tide" is perfectly secured and utilized that the method of giving milk to be recommended later can be successfully carried out. It is objectionable to take any food with the milk and to add egg or brandy to it. Harm may also result from the cream which has risen and been stirred in the milk, causing flakes, or by the slightest scum, caused by boiling the milk, and even by some foreign substance accidentally in the milk; these small solid particles, being incapable of immediate absorption, may cause the secretion of gastric juice, and so start the process of digestion. So also milk is taken too soon after a meal while the stomach is still acid. Of the skin diseases unfavorably affected by milk improperly taken, the author has found acne and eczema the most common.

Etiology and Treatment of Eczema.—Observations on these topics are made by G. Chambers. Combined constitutional and local measures give the best results. We should remember that the disease is a dermatitis with exposure of the rete mucosa. The three indications are to reduce the inflammation, soothe and protect the skin, especially the mucous layer, and to adopt measures to bring about the normal keratinization of the epidermis. It harms an acute eczema to wash it with plain water, because it removes the fibrinous exudate present. Consequently the skin, on drying, becomes less pliant and inclines to fissures. If, however, we apply a normal saline continuously, we find that it is soothing. The author says that in making the application cheese-cloth in 8 to 10 ply is moistened with the solution and applied to the patches. To prevent drying the moist dressing is covered with oiled silk. The dressing should be changed twice a day. In cases in which the eczema is impetiginous he adds boric acid in sufficient quantity to the normal saline solution to make about 1 in 60. At each change of dressing it is well to wash the affected parts with the solution. As soon as the skin, by its color, smoothness, the absence of crusts, etc., shows diminished inflammation and improved keratinization he discontinues the dressing and applies a soothing ointment such as Lassar's paste. Subsequently a mildly stimulating ointment may be required.

The Blood in Relation to Skin Diseases.—Some observations along this line have been made by T. Houston and J. C. Rankin. A low opsonic index was found in thirty-four cases of acne and other conditions from which a staphylococcus could be isolated. After inoculations according to the Wright method all these cases rapidly improved, though some relapsed. In lupus the opsonic index with tubercle bacilli varies. With a persistently low index neither the Finsen light nor any other treatment is likely to prove of service. If by inoculations the opsonic power can be raised, the improvement is marked. Some cases of lupus erythematosus have done well with the raising of the index followed by the Finsen light. The determination of delayed coagulability of the blood may give an important indication. In a case of erythematosus, on first giving Finsen treatment (a quarter of an hour exposure) the part treated rose up in huge blisters, requiring three weeks to heal. This again occurred after the second treatment. As the coagulation time was found to be prolonged, the patient was put on calcium lactate the day before treatment, with the result that she has had several exposures since with little or no blistering. Two other cases which showed much blistering had calcium lactate before treatment with great benefit. Another case which reacted severely to the light treatment and did not improve by taking lime salts was found to have a normal coagulation time. A young medical man who had tried a great number of applications for an edematous rash and tenderness coming on after shaving was quite well after taking calcium chloride for one week. In those dermatoses associated with serous effusions in which the coagulability of the blood is found diminished, the lime salts have been rapidly beneficial.

Berliner klinische Wochenschrift, October 1, 1906.

Toxic Edema.—Quincke, in discussing the forms of edema which occur in such conditions as pernicious anemia and the cachexia attending phthisis or malignant disease says that toxic edemas may be caused in any one of the following ways: Through the local action of the toxic substance either on the vessel walls, on the tissues themselves, or on both; through the toxic action on the nerves of the region in question, either centrally or in their course. These nerves may be vasomotor nerves affecting either the caliber of the vessel or the permeability of its wall, or they may be trophic nerves supplying the tissues themselves, or both varieties may be affected. Either the one or the other of these modes of causation may be observed clinically. The neurogenous variety is observed in cases of edema attending paralysis, and the migration of localized edemas sometimes observed may also be explained on this basis.

The Treatment of Trachoma with Radium.—Dinger praises highly this method of treatment and believes that it is preferable to any other. He used 5 mg. of radium bromide, which he applied first for one minute twice a week, increasing gradually up to five minutes. Later on the quantity of radium was doubled and the applications were made only once a week. No injurious by-effects were noted, and out of sixteen cases seven were cured and the others much improved. It was found that the younger patients improved more rapidly than the older ones, but even in very obstinate cases with pannus formation the lesions yield gradually and the patients are enabled to return to work. The painlessness and simplicity of the method are said to be very great advantages.

Münchener medizinische Wochenschrift, October 2, 1906.

The Treatment of Malignant Growths by Anesthetization.—Spiess has already published his views on the subject of the influence of anesthetization on inflammatory processes, and he now applies the same principles to the consideration of malignant growths. In inflammation he holds that the hyperemia is the result of sensory impulses emanating from the affected area, and he believes that malignant new growths are similarly maintained in a state of congestion. This increased blood supply is required for their abnormally rapid growth, and if this can be restricted the nutrition of the tumor will suffer to a considerable extent. A large number of experiments are described which were performed on mice obtained from Ehrlich's laboratory and presenting various types of malignant tumors. Into the centers of the tumors varying quantities of solutions of several anesthetic substances believed to be without antiseptic power were injected, with the result that in nearly all instances the growth of the tumor was influenced for the better, and in some cases an actual cure was secured. The author also details the results of similar experiments on inoperable malignant growths in human beings which, he says, were undertaken mainly for the purpose of ascertaining whether any undesirable effect was produced by the injection. He refrains, however, from any comment on these cases, but states that the subject is to be studied further in Czerny's new institute for cancer research at Heidelberg.

A Case of Pubiotomy in Private Practice.—Brenner was able successfully to terminate the labor of a twenty-four-year-old primipara with a moderately flat pelvis and a fetus two weeks overdue by resorting to pubiotomy. The fetal head was unusually large and did not mold well, so that attempts to deliver with forceps failed and cesarean section or pubiotomy seemed the only possibilities. The operation succeeded perfectly and the child was easily delivered with forceps. In spite of a tear of the anterior vaginal wall, no wound complications resulted, but the patient suffered from lameness of the left leg which lasted until the fifth week after delivery and then disappeared completely. While the author is a warm adherent of the operation, he does not believe that the technique has yet been sufficiently perfected to make it a suitable routine procedure for use in private practice.

Congestion Hyperemia in the Treatment of Diseases of the Eyelids.—Hoppe states that he considers Bier's congestion method to be as useful in the treatment of certain affections in the neighborhood of the eye as it has been found in the management of inflammatory conditions in other parts of the body. He first describes experiments made on the healthy eye which have convinced him that the treatment, when properly carried out, cannot in any way injure the eyeball itself, while it is also probable that disorders of the globe can be very little influenced in this way. The most satisfactory results were obtained in cases of hordeolum. The author believes that the hyperemia treatment alone carried out by means of suitable suction glasses at a negative pressure not greatly exceeding 30 mm. of mercury forms the most efficient therapeutic procedure in these cases. Among the advantages are the prompt and permanent relief of pain, the avoidance of troublesome compresses or moist dressings, and the fact that the patients are enabled to continue at work. Furuncles of the eyebrow also yielded readily to this method, but the results in the treatment of chalazion were somewhat less satisfactory, and the author advises that incision be resorted to if prompt improvement does not follow the suction treatment.

Deutsche medizinische Wochenschrift, October 4, 1906.

A Case of Pruritus of the Vulva Cured with Blue Light.—Rothschuh says that in self-defense physicians ought to keep in their own hands and out of those of the quacks such therapeutic agencies as the various forms of light rays. Even although the rationale of their action may not in all instances be evident, striking results are often obtained by the application of some form of phototherapy. He instances a case of pruritus of the vulva occurring in a middle-aged woman which had resisted all other forms of treatment tried, and which, through the insomnia and mental distress occasioned, had brought the patient into a truly pitiable condition. The application of the blue electric light brought relief after the fourth daily application, so that the patient for the first time in a long period was able to sleep several hours consecutively at night. After the twelfth radiation she was entirely relieved and had regained her usual health.

Diaphragmatic Eventration.—Lotze says that although about five hundred cases of diaphragmatic hernia are on record, only twelve cases of the condition named in the title, which consists in an abnormally high position of the diaphragm, have been reported. To this number he adds the case of a man twenty-eight years old who came under observation owing to well-marked diabetes. On physical examination the borders of the right lung were found to be practically normal, but on the left side the diaphragm was at the level of the third rib. Radioscopic examination with a mercury bougie introduced into the stomach showed that the diaphragm was situated above the shadow of the instrument, thus proving that the condition was not one of diaphragmatic hernia. At the end of inspiration the shadow of the bougie was seen at the level of the fourth rib, and at the end of expiration it rose to the level of the second rib.

French and Italian Journals.

Horizontal Succussion in Pyopneumothorax.—Chauffard had under his care three patients, two of whom had pyopneumothorax, and one hydropneumothorax. All attempts to elicit succussion sounds with the patient in the sitting position failed, although in all three of them the effusion was abundant. In order to call forth this phenomenon, the patients were laid flat, face downward. The ear was then applied to the back of the patient and the sound was loud enough to be heard at some little distance by the assistants. With the trunk in an appropriate position, if ventral and dorsal auscultation be successively practised, one may convince himself that the ear hears the succussion sound only when it is applied at the level of the gaseous layer, while it detects nothing at the level of the liquid layer. Succussion sounds are produced when there exists above a free layer of liquid, an air chamber large enough to permit the balottement of the liquid and the resonance of the bruit. Chauffard calls attention to the two kinds of succussion, vertical and horizontal. The former is the classical type and is met with the more frequently. However, its absence does not exclude the possibility of a pyopneumothorax. Horizontal succussion is the proceeding of choice in pyopneumothorax with a large liquid effusion, and in some cases it is the only method that establishes the diagnosis. In every doubtful case succussion practiced on the patient in both standing and sitting posture should be compared.—*Revue Française de Médecine et de Chirurgie*, September 10, 1906.

Intubation of the Nasal Passages in Severe Coryza of Infants.—Minerbi and Vaccari call our attention to the severe obstacle formed by coryza in the nursing infant to lactation. In the Maternity Hospital at Ferrara they have made use of a simple apparatus to permit of breathing while nursing. It consists of a pair of tubes inserted into the nostrils and held in place by a rubber bandage while in use. It permits of breathing, lactation, and sleep, which would otherwise be impossible. Its use is not attended with danger or difficulty. The elastic band is 15 millimeters wide, and passes around to the back of the neck. It is perforated in front with two holes, into which are inserted two Nelaton's sounds, number 11 or 12, which pass into the nares. The sounds should be 65 centimeters long. The apparatus is sterilized by boiling and then introduced into the nares before nursing. Children thus treated nurse and sleep well.—*La Riforma Medica*, August 11, 1906.

A Case of Cardiac Rupture.—Casassus cites the history of this patient. He was a man seventy-one years old, who came to the hospital for a generalized eczema. He appeared to be robust in spite of his age. Both his family and personal history were good. He was taking a nap half an hour after his midday meal, when he was suddenly awakened by extreme pain in the region of his heart. There was vomiting, the face was pale and wore an agitated expression, the forehead was covered with sweat, and the extremities were cold. Slight dyspnea was present. The pulse was small and irregular, being sometimes intermittent. The heart sounds were completely muffled and there was a certain degree of arhythmia. At the end of eleven hours the patient died. Autopsy revealed a rupture of the cardiac muscle on the anterior surface of the organ. This tear was one and one-half centimeters long. Death had been caused by this rupture, followed by an effusion of blood into the pericardium.—*Journal de Médecine de Bordeaux*, September 9, 1906.

Stenosis of the Upper Respiratory Passages Secondary to Tracheotomy or Intubation.—Carlo Comba treats of the mechanical causes of stenosis. The severity of the diphtheritic process may cause ulceration and cicatricial contraction, or there may be a chronic infiltration of the hypoglottic region. Exuberant granulation of the tracheotomy wound at one of the angles, or of the mucous membrane about the tube, is a frequent cause of stenosis. This may result from severity of the disease or mixed infection. Cricotracheotomy is a frequent cause. When the granulations are absorbed results are good. When they are not, cicatricial contraction results. Prophylactic treatment is of importance. Do the high operation, and avoid the cricoid; use well-shaped tubes, not too large, and remove them as soon as possible. Granulations should be scraped and cauterized, and gradual dilatation resorted to when stenosis has occurred. In intubation, aside from a severe or a mixed infection, the principal cause is decubitus. The remedies are the use of light, well-formed tubes, for a short time and introduced skillfully. Pain, bloody sputum, repeated expulsion of the tube, and black spots or concretions on the tube all indicate ulcerations. Some authors advise a secondary tracheotomy after a few days when stenosis persists after intubation. Others cover the tube with a film of gelatine impregnated with alum or iodoform, with good results. If slow dilatation with sounds does not cure the stenosis, divulsion with forceps may give good results. —*Rivista di Clinica Pediatrica*, August, 1906.

Pregnancy in Uterus Didelphus.—Giuseppe Merlo describes a rare case of uterus didelphus in which there was but one hymen, a rare malformation. The patient suffered from severe pain during the early part of pregnancy, probably due to the stretching of the small left uterus, in which the pregnancy existed. The right uterus was empty and menstruation occurred, probably from this side, during the first months of pregnancy. The pregnant side of the uterus was not recognized until after the tumor to the left of the uterus had grown so large as to suggest the necessity of laparotomy for tubal pregnancy. A very careful examination then brought to light a second vaginal orifice, concealed by the hymen. Pregnancy went on to term, a result which is rare in these cases, abortion or premature labor being the usual ending, and the child was born with assistance after a slow labor with rigid os, the knee presenting. There was a perineal laceration and a separation of the lower part of the septum between the two vaginas. The vagina of uterus didelphus may be single or double, or one vagina may be closed. The cause of this anomaly is an arrest of development from the eighth to the twelfth week of intrauterine life, before the formation of the genital cord by the union of the two ducts of Müller. With a rapid increase in the transverse diameter of the embryonal cavity there takes place a slow development of the urogenital folds.—*Annali di Ostetricia e Ginecologia*, June, 1906.

Book Reviews.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors: Joseph Decatur Bryant, M.D., and Albert H. Buck, M.D., of New York City. Complete in Eight Volumes. Profusely Illustrated. Volume One. New York: William Wood and Company, 1906.

It is a curious fact that, while there is no dearth of treatises, large and small, single volumes and systems, on general medicine, gynecology, obstetrics, and pediatrics, modern works on general surgery in the English language can almost be counted on the fingers of one hand. Why this is so it is difficult to say. Surgeons there are aplenty, and good writers there are among them: the journals are filled with instructive articles, and monographs on special subjects are not rare; but of late few surgeons have attempted the writing of general treatises covering the whole field of surgical practice. This is possibly because surgery is in a way more specialized than internal medicine. Practitioners in this branch are prone to interest themselves in a special subject, and the man who has devoted his time to the study of one part or one system, as the gastroenteric or the urinary tract, and has become in a measure identified with work along that line, has a certain hesitancy in setting himself up as an authority on other subjects, with which he feels himself to be less intimately familiar. This, we think, may account for the comparative scarcity of one-man treatises on surgery, and at the same time justifies the preparation of a system of surgery, like the one the first volume of which lies on our table, written by specialists under the direction of competent editors. The prospectus of this work contains the names of ninety-six contributors, each of whom is more or less a specialist in the sense above indicated, and may be presumed to write with authority on the subject assigned to him by the editors. These latter need no introduction to the medical public. Dr. Bryant, himself the author of one of the few extant general treatises on surgery, and the president-elect of the American Medical Association is peculiarly fitted for the task of selection of writers for such a treatise; and Dr. Buck's work in the supervision of the translation of Ziemssen's Cyclopedia and in the preparation of the two editions of the incomparable "Reference Handbook" has placed him far and away at the head of medical editors in this country. With two such able conductors, it would be strange if this work did not prove to be without a compeer in its department of medical literature. But this is prophesy, and we are concerned in the present review with only the first volume of the series.

We are glad the editors or the publishers, or whosever province it was to select a title for the work, did not call it a "manual" of surgery, for manual it is not. This volume is of royal octavo size, next door to a quarto, and has 818 pages; it weighs several pounds, and can be used with comfort only when it rests on the desk. But this drawback, which is due to the weight of the paper necessary in order to bring out the delicate cuts, is forgiven when one contemplates the beauty of the illustrations, in which every line stands out with almost the distinctness of a steel engraving. There are fifteen contributors to this volume, in which only general subjects are treated. Space forbids a detailed review of each article, but we cannot forbear special mention of the introductory article, on the "Evolution of American Surgery," from the pen of Dr. Stephen Smith. No American can read these sixty-seven pages of the surgical history of his country without rising a few inches in stature. There is no spread-eagleism in it, but a simple narration of what American surgeons, many of them humble country practitioners in our Southland, have done to raise surgery from a mutilating makeshift of last resort to a life-saving art of preeminent rank. Abdominal surgery was born here, and anesthesia, which made progress possible, was, as we sometimes forget, an American discovery; so was the cause of puerperal fever, a truly traumatic, hence surgical, disease. Dr. Smith's article is illustrated with the portraits of many of the surgical worthies of the early and more recent times, the features of some of whom are familiar to many still living, and will recall to them affectionate memories of the masters under whom they studied. Following this introduction are sections on "Surgical Pathology," by Drs. Aldred Scott Warthin of Ann Arbor, Albert George Nicholls of Montreal, Edward H. Nichols of Boston, Theodore A. McGraw of Detroit, and Harvey R. Gaylord of Buffalo; "Complications and Sequelæ," by Drs. Paul Monroe Pilcher of New York and Joseph C. Bloodgood of Baltimore; "General Surgical Diagnosis," by Drs. Joseph D. Bryant of New York, Harlow Brooks of New York, Preston M. Hickey of Detroit, Walter J. Dodd and Robert B. Osgood of Boston; "General Surgical Treatment," by Drs. James E. Moore of Minneapolis; and "General Surgical Prognosis," by Dr. Leonard Woolsey Bacon of New Haven, Conn. Each of the articles in these five sections is worthy of a special review, but the limits of a book notice forbid, and we can only say that were each published as a monograph it would bring to the author the commendation of his confrères in general practice. If the succeeding volumes reach the high level of this introductory one, the work will take rank as one of the greatest surgical treatises any country has yet produced.

A Complete Handbook for the Hospital Corps of the U. S. Army and Navy and State Military Forces. By Charles Field Mason, Major and Surgeon, U. S. Army. Approved by the Surgeon-General of the Army and Navy. Profusely Illustrated. New York: William Wood and Company, 1906.

This work is intended to supply all the information needed by enlisted men of the Hospital Corps in the army, navy, and militia, in their professional and military duties. It replaces and combines several separate small manuals, each of which contains too much. In addition to some very elementary instruction in anatomy, physiology, nursing, and first aid, it contains chapters on cooking for the sick and management of the ration, hygiene, camp sanitation, army regulations, care of animals, riding, driving, litter drills, transportation of the sick, and the Geneva convention—a comprehensive list of subjects which shows the wide range of studies and training demanded of the modern sanitary soldier. A case is known in which a hospital sergeant, despairing of learning all these things, refused to apply for examination for promotion, but took in preference the examination for a commission and was appointed a second lieutenant of cavalry. The present work must indeed appear encyclopedic to the ordinary soldier, and it suggests the thought that perhaps too much is expected of men who are paid so little—if it is easier for a man of moderate education to become an officer. None except sergeants are expected to know all of this hand-book, and it seems that there is need of an abridged edition, which is wholly within the comprehension of every private soldier who is not a student but who can be compelled to learn all of it in his three years of service. Nevertheless the work fills a long-felt want of medical officers in supervising the everlasting grinding instruction of their enlisted men, who invariably specialize as in civil life and are generally kept at one line of work, such as cooking, clerking, nursing, or muledriving.

Natality and Fecundity. A Contribution to National Demography. By C. J. Lewis, D.Sc. (Public Health), M.D. Edin., F.R.C.P. Edin., M.R.S.C. Eng.; Lecturer on Public Health, School of Medicine of the Royal College and Medical College for Women, Edinburgh; Examiner in Public Health, Royal College of Physicians Edinburgh; Fellow of the Royal Institute of Public Health; Joint Author of "Public Health and Preventive Medicine," and J. Norman Lewis, Fellow of the Institute of Actuaries; Fellow of the Faculties of Actuaries in Scotland. New York: William Wood and Company, 1906.

The authors have made a remarkable study of the birth registers of Scotland for 1855—the year in which compresensive details were recorded as to both child and parents, such as birthplaces, ages, time of marriage, and number of children; no other vital statistics of this variety are so complete, and there have been numerous requests to have them properly tabulated—a stupendous work which the Lewises have successfully accomplished. Fertility refers to the number of children born and fecundity to the number of successful pregnancies, irrespective of multiple births. These matters have been worked out for each five-year age period of mothers from fifteen to fifty-nine, and of fathers to a more advanced age. Multiple births are accurately determined, twins, for instance, occurring once in 87 births and triplets once in 8,391. The reduction of the birthrate since 1855 comes up for discussion statistically, but it is not explained. A gratifying exhibit is the marked reduction in the illegitimate births since 1855, but it is not known whether it is a result of greater morality in Scotland or of more knowledge. The statistics are of great value, for they give an accuracy to general laws known for a long time, though happily they do not change any of our previous generalizations on these topics.

The Teeth and Their Care. By Thaddeus P. Hyatt, D.D.S., Member Second District Dental Society of the State of New York. Brooklyn-New York: King Press, 1906.

This small handbook is full of practical suggestions. The structure of the teeth, their care, children's teeth, and the relation of the teeth to the rest of the body are treated of in different chapters.

Society Reports.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

Second Annual Meeting, Held at Washington, May 17 and 18, 1906.

(Special Report to the MEDICAL RECORD.)

(*Concluded from page* 318.)

SOCIOLOGICAL SECTION.

Thursday, May 17.

DR. WILLIAM H. BALDWIN OF WASHINGTON IN THE CHAIR.

Tuberculosis Nostrums.—Mr. SAMUEL HOPKINS ADAMS of New York read this paper. He spoke of the great array of patent medicine advertisements to be seen everywhere, which gave one the impression that anyone could cure tuberculosis except the regular medical practitioner. He divided these so-called remedies into the actively harmful, including those which contained such drugs as hashish, opium, and alcohol, and the passively harmful, which simply stimulated false hope and diverted the patient from the use of proper remedies. He believed, however, that this vicious business was now on the wane. As one of these quacks had told him "the public is getting wise on consumption," and it would be necessary for him to turn his attention to some easier disease, as cancer. There could be no doubt that the work of the National Association for the Study and Prevention of Tuberculosis, as well as the work being done in the public schools, was arousing the public to a proper consideration of the subject. He desired to urge every speaker to devote a few words to explaining the uselessness and harmfulness of so-called consumption cures. He referred to the attempts to pass bills for the restriction of the patent medicine business, and explained in detail the difficulties that had been encountered in various States. He said that many of the better newspapers had now taken up the fight and were excluding such advertisements from their columns.

Dr. FRANK BILLINGS of Chicago opened the discussion on this subject. He said that formerly we did not understand what tuberculosis was, and its only management was by the use of drugs, which were of several kinds; first, preparations intended to improve the nutritional condition, as the fats, cod liver oil, and other hydrocarbons; second, preparations supposed to modify to some degree the changes occurring in the tubercle, as the phosphates, calcium phosphate, for instance, with the idea of bringing about calcareous degeneration of the tubercle. Then we had the remedies to combat fever, as aconite and other preparations of that kind. Lay people believed to-day what was taught and believed by the medical profession fifty years ago. It was unfortunate that a large number of the medical profession itself was no better educated in this matter than the laity.

Dr. J. WILLOUGHBY IRWIN of Philadelphia said that he had had occasion to interview a great many druggists on the question, and had been informed that it was almost always the poor who bought the nostrums, because they could not afford to pay the ordinary fee to a physician and then go to the store and pay another fee for the medicine. They tried to even this up by buying something that they supposed would at least do them no harm and would help their cough, their chief idea always being to get rid of the cough, which they looked upon as the disease itself. He thought a committee should be appointed by the association to take charge of the crusade against the nostrums advertised for the cure of consumption. He suggested as one method that the committee should write to druggists asking for the names of five or more people using such remedies and mail them literature. This would be taking up the matter in the manner that the patent medicine men themselves used.

Dr. D. S. WILSON of Louisville, Ky., said he could not refrain from saying a word in defense of the druggist. He believed that as a general rule they did not desire to sell patent medicines, first, because there was little profit in it for themselves, and, second, because as a class they were as conscientious as physicians; but the trouble was that the people demanded the nostrums and that, as the drug business was a trade as well as a profession, they could hardly be expected to refuse to supply the demand.

Tuberculosis Among the Indians.—Commissioner FRANCIS E. LEUPP of Washington, D. C., presented this paper. He said, as the safe guardian of 270,000 red children, he felt the keenest interest in the investigation of the cause and the search for preventive and remedial measures to be used in combating this special scourge of the Indians, tuberculosis. During the last year they had collected at the office of Indian Affairs data from ninety-one of their field physicians, representing the conditions among half the Indian population of the United States. These reports showed that among every 1,000 Indians there were nearly ten cases of pulmonary tuberculosis, fifteen of glandular tuberculosis, and nearly two of tuberculosis of the bones and joints. He also gave statistics from the larger Indian schools. At Carlisle, where, in the judgment of so many Western persons, Indians readily sickened and died, there were ten cases of tuberculosis in a total membership of 904. On the other hand, at Pierre, S. D., in the midst of a country where it was customary to send white persons with weak lungs, there were eleven cases out of a total of 146. At Chilocco, Oklahoma, one case among 748 pupils. At Haskell, Lawrence, Kansas, one case among 814. He referred to the recommendation made in his annual report for 1905 as to the necessity of the separation of diseased from well children. He had also appealed for authority to distribute circulars regarding the prevention and spread of the disease.

Dr. JAMES R. WALKER of Pine Ridge, S. D., read a paper upon the same subject. In 1878 he had gone among the Indians to die of tuberculosis, bidding his friends goodbye and never expecting to return among them. When he got among the Indians he thought it might be well to make some study of the material at his command, and in time he had come to see things that were not written in textbooks. It was of his work among the Sioux that he spoke particularly. He had found the Indians affected with the disease to a much greater degree than the white residents. The population of Pine Ridge was 6,686; 4,870 full-blooded Sioux and 1,816 mixed bloods. For ten years an effort had been made to keep statistics, and the data so obtained formed the basis of the paper. He found that tuberculosis among the Indians did not differ in any respect from the disease among the whites; it ran the same course and produced the same results. When they abandoned the tepee and began to live in houses the disease greatly increased. He considered that the question of food was only a question of fortifying the system against disease, and said there was no evidence that meat, even though tuberculous, caused the disease among these Indians. The sanitary condition of the tepees had been far superior to their houses, which had been built in the most unsanitary manner. The conditions were such as to lower the resisting power of the Indians rapidly. Every case was caused by the excretions of the disease, and no case developed in any other way. It had been fully demonstrated that tuberculosis could be prevented among them by keeping them from exposure to the infection. He submitted the proposition that a practical method of suppressing tuberculosis among the Indians would be to establish sanitary camps, where all the infected should be collected and maintained until each case terminated.

Mr. M. K. SNIFFIN of Philadelphia had been at Pine Ridge during the summer and had had an opportunity to investigate the conditions there, which were such that it was not surprising that the death rate from tuberculosis

was so high; it was more surprising that it was not a great deal higher. He said the territory under Dr. Walker's charge was about the size of the State of Connecticut, with a population of about 7,000, and the only way to get to them was by means of horse and wagon; it often required a week's time to reach a patient. Another of his difficulties was that after prescribing it was almost impossible to have his instructions carried out. He thought too little attention had been paid in the past to the medical service of the Indian Department, and that it should be thoroughly remodeled. He thought the force should be increased, as it was out of the question to expect one or two physicians to look after the health of 7,000 of these people. The conditions in the Indian homes were most unsanitary, often as many as fifteen occupying one hut, to say nothing of as many dogs. If the Indian was to be built up, decent permanent homes must be established for him, and he thought the association could do much in bringing public sentiment to bear upon Congress to furnish proper means to carry out such measures.

Dr. Norman Bridge of Los Angeles said the papers had demonstrated his own belief that tuberculosis spreads because of lack of fresh air and proper hygienic surroundings as well as by the distribution of the germs of the disease, by lowering the resisting power of the individual. He desired to know whether it had been Dr. Walker's experience, as had been stated by some, that the existence of tuberculous glands of the neck lessened the likelihood of the individual acquiring pulmonary tuberculosis later in life. He had found that among people with scrofulous scars the proportion of pulmonary tuberculosis was about one-half.

Dr. Walker said, in answer to Dr. Bridge, that he had no statistics on the subject, but he had certainly seen many cases of pulmonary tuberculosis in patients who had had tuberculous glands earlier in life.

Dr. Geo. M. Kober of Washington, D. C., said his sympathies were very much with the Indians, among whom he had lived in the capacity of military surgeon for eighteen years, and he thought Dr. Walker had struck the keynote of the whole situation in placing as the most effective predisposing cause of tuberculosis among the Indians the radical change in their mode of living. We had taken the Indian from his tepee without suggesting to him how he might build a sanitary home, so that from the well-ventilated tepee he had gone into a hut of the most unsanitary construction. Proper food and proper housing would do more than anything else to solve the problem for the Indian, and he thought that the attention of the Commissioner of Indian Affairs should be called to Dr. Walker's excellent paper.

Tuberculosis Among the Negroes.—Dr. Thomas Jesse Jones of Hampton, Va., read this paper, in which he aimed to show the great importance of the study and prevention of the disease among this race. He believed that few knew the extent of the prevalence of the disease in this race, and that still fewer knew of its effect upon the vitality of the nation. There were three factors that had to be considered—the extent of the disease in the race, the proportion of that race, and their proximity to other races. He demonstrated the great prevalence of the disease among the negroes of the South and considered that it was such as to demand the most careful consideration of the association. He thought that in this respect only the Irish offered a problem at all comparable with that of the colored race. He said we could not afford to overlook the reflex of the black race upon the white, and unless the white race could lift them up, he believed they would surely pull the white race down

Dr. Robert Wilson of Charleston, S. C., said that he thought those living in Northern cities, where the proportion of blacks to whites was so much less than in the South, could scarcely appreciate the importance of Dr. Jones' paper. He agreed with Dr. Jones that it constituted a menace to thousands of the white population, because the two races were brought into contact in every relation of life. Dr. Wilson gave a series of statistics bearing upon the question dating back from 1822. The great prevalence of the disease in the negro race he believed was due to two factors, ignorance and poverty. They were too poor to live in proper quarters and too ignorant to take care of themselves. He suggested as a means of remedying the condition sanitary inspection of their quarters and segregation as a help toward this end.

Dr. S. A. Knopf of New York said that among other things we must endeavor to educate the negro physicians who did not seem to have grasped the importance of the subject at all. He thought that much of the trouble in the negro race in the cities was due to their long hours of work and their irregular habits of living. They had to be taught that proper and regular methods of living were the only things that would remedy the condition. He considered the problem a most serious one and that it was essentially necessary to combat the disease in this race in order to keep it from the white race.

Dr. C. L. Minor of Asheville, N. C., said that the statistics concerning tuberculosis among the negroes in the South were absolutely worthless, not worth the paper they were written on. In his experience no negro who developed the disease ever recovered. Unless the disease could be prevented nothing could be done. He believed that the disease would eventually settle the whole race question. Any preventive work would depend upon the intelligence of the negro, and unless that could be raised little could be accomplished.

Friday, May 18.

Workingmen's Insurance as an Instrument of Tuberculosis Prevention.—Dr. Arnold C. Klebs of Chicago read this paper. He said the money which set into motion and kept working the ever-growing machinery of tuberculosis-prevention in this country was, with few exceptions, supplied by voluntary contributions given with charitable intent, this holding good for almost all our public hospital and relief service; as Duclaux expressed it, "we have remained anchored to that idea of charity, a very noble, very beautiful idea, looked at from the view point of one who follows it, but a false, almost absurd idea, when one contemplates the benefits society can possibly derive from it." If the right and duty of self-defense, he said, was to be the basis of our efforts, then it was the one most attacked who should bear the largest share of the burden; to make him who was attacked, though he had not succumbed yet, an object of charity was demoralizing and pauperizing. It was the working man, especially the one employed in industrial enterprises, without doubt, who was the most often attacked, and it was he who must grapple with the problem. He then referred to the system of obligatory insurance for workingmen in Germany, and said it had become the most powerful factor in tuberculosis prevention in that country. Every working man of a certain age scale was obliged by law to insure himself and his family against sickness, invalidism, and old age. The employer deducted one-half of a certain proportion of the wage and after adding the other half himself remitted the total to the insurance authorities in charge of the fund. The contributions were a trifling tax to the workingman, but the benefits were great. Under the law for sickness insurance there had been paid for the benefit of the insured from 1885 to 1903 three hundred million dollars, and from the invalidity insurance from 1891 to 1903 two hundred million dollars; during the past eight years the invalidity insurance offices took care (for an average of three months for each case) of 101,806 tuberculous patients at a total expenditure of about nine million marks; 90,000 of these patients had been taken care of in sanatoria established by the insurance offices. He thought the necessity for individual submission to social exigencies was becoming more and more appreciated in this country, and in this tuberculosis must become the most important point of attack. The industrial

workers had a tremendous interest in this struggle and it was necessary to show them how to help themselves, how to save in time a penny to be ready to meet this greatest of their foes.

Mr. Frederick L. Hoffman of Newark, N. J., discussing Dr. Klebs' paper, said that it must be borne in mind that there was a wide difference between a paternal government and a republic, and that anything in the nature of paternalism would be distasteful to people in this country. He considered the method in Germany was really a charity and not an insurance, and to attempt such a thing in this country would bring about a social revolution. Society had an important duty and that was to teach how the disease could be prevented, and how it could be cured, and the trouble here was that the workingman did not realize that he had nine-tenths of the problem in his own hands. He believed that the only solution of the matter in a democracy was so to develop the intelligence and brain power of every man that he would be able to solve the problem for himself. He did not believe the German method was anything but a charity under a different name.

Mr. Wm. H. Baldwin of Washington said he thought the chief benefit of the German insurance was that they had realized that tuberculosis was a terrible drain and had found a method of curbing it by getting at the disease as rapidly as possible and having the prevention and cure go on together.

Dr. J. H. Lowman of Cleveland, O., disagreed with Mr. Hoffman that the workingman must be left to solve the problem for himself; it could not be done that way; society must help him; it was for such associations as this to point the way. This had been attempted in a way in the inspection of shops which met with favor both from the workingman and the employer.

Dr. Klebs, in closing the discussion, said it was a fallacy to believe that the prevention of the disease lay in the workshop; it did not; it lay in the family, in the home, not in the factory, and he believed it could not be reached there with anything as well as with such insurance.

The Influence of Sanatoria on Surrounding Property.—Dr. William H. Baldwin, Washington, Chairman of the Section, delivered an address on this subject. Mr. Homer Folks of New York, Dr. John P. C. Foster of New Haven, Dr. H. Wirt Steele of Baltimore, and Mr. Livingston Farrand of New York discussed the subject, giving their experiences and the difficulties met with in securing sanatoria in their respective localities.

Effective Methods of Educating the Public.—Mr. Paul Kennaday of New York read a paper on this subject, in which he described the various methods that had been employed in reaching the public, dividing the educational work into three classes: 1st, lectures; 2d, publications; and 3d, exhibitions.

Surgeon General Wyman, P. H. and M. H. Service, spoke particularly on the prevention of tuberculosis in Government Departments, and of the Executive Order issued February 28, 1906, containing the necessary directions towards this end. The Executive Order of President Roosevelt was issued in pamphlet form, entitled "Prevention of Tuberculosis Among Government Employees." The order referred to persons and to buildings and prescribed rules to be followed, the nonobservance of which would constitute a cause for separation from the service.

Dr. John H. Lowman of Cleveland, Dr. Edwin D. Solenberg of Minneapolis, Mr. Alexander M. Wilson of Boston, Dr. Rogers of Yonkers, N. Y., Mr. Samuel H. Adams of New York, Dr. D. S. Wilson of Louisville, Dr. W. Wirt Steele of Baltimore, and Health Commissioner Darlington of New York, discussed the subject, showing in detail the various methods employed by them in their respective localities for bringing before the people exhibitions, lectures, and demonstrations, and distributing publications intended to arouse public interest in the work of tuberculosis prevention.

SECTION ON TUBERCULOSIS IN CHILDREN.

Friday, May 18.

Dr. Wm. P. Northrup of New York in the Chair.

Address of the Chairman.—Dr. William P. Northrup of New York said there had been a request for a Section which would devote itself to the study of tuberculosis in children and this request had called forth a ready response from the President. Tuberculosis in young children had a few characteristics peculiar to the age of the patients. It was less apt to be limited to the lungs and to manifest itself in excavations with profuse expectoration. Tuberculosis in infants and young children was more apt to be of general distribution, or to be localized in lymph nodes, bones, lungs, and meninges. The program took account of the sources from which the infectious agent was most commonly derived, its hiding places, the portals through which it gained entrance to the body tissue, the protection of infants in menacing surroundings, the effort to limit the progress of the disease, and the hygienic aids of greatest value in assisting the body cells against the germ cells. There was no better place to begin the study and prevention of tuberculosis than in young children.

The Portals of Entry of Tuberculosis.—Dr. David Bovaird, Jr., of New York said that the very fact that discussion of the subject was still appropriate bore eloquent witness to the truth of the ancient aphorism of Hippocrates, that "experience is fallacious and judgment difficult." From the days when the experiments of Villemin proved the transmissibility of tuberculosis it had been accepted that the inoculation of tuberculosis would result in a definite succession of events in the affected animal. There would be a local lesion of the cellular tissues or skin in cases of subcutaneous infection, of the peritoneum if the material were injected into the sac, of the intestines in cases of feeding experiments, of the lungs when infected dust was inhaled. Then the lymphatic glands nearest the original focus would become diseased, one gland after another, until the deep thoracic or abdominal glands gave away and the disease invaded the viscera or the bacilli were transmitted everywhere throughout the body by the blood. Within a few years doubt had been thrown upon this belief. Some feeding experiments had not resulted in abdominal but in pulmonary tuberculosis. In some cases the local lesion of skin or intestine was found lacking. After reviewing the conclusions of Cornet on this theme Dr. Bovaird said that the older methods of interpretation of the findings in tuberculosis in man were reestablished as entirely trustworthy. With that understanding there were five different routes by which tubercle bacilli might obtain entrance to the body: (1) By placental circulation; (2) by contact with the surface of the body, the skin, the eye, the ear, etc.; (3) by the respiratory tract; (4) by the digestive tract; (5) by the genitourinary tract. Infection through the placenta was possible, but so rare that it might be disregarded for the present. Infection through the genitourinary system was practically unknown in childhood. When it occurred it was a part of a general infection. Infection through the skin was also of minor importance. It had long been assumed that some wound or lesion of the skin or surface was essential to the lodgement of the tubercle bacillus. Cornet had demonstrated that the bacillus might make its way through the uninjured integument, but this source of infection played an insignificant part. Surface lesions usually remained local. The two great portals of entry were by the respiratory and digestive tracts. The relative importance of these two avenues of infection was best understood by discussing their relations to the more important clinical types of tuberculosis in children. Glandular tuberculosis might be produced by either inhalation or ingestion of the bacilli—probably most often by inhalation. Tuberculosis of the bronchial lymph nodes or lungs was an inhalation tuberculosis. Tuberculosis of the meninges or bones and joints in the great

majority of cases (9-10) had its primary focus in the bronchial nodes or lungs. Tuberculosis of the alimentary tract was primary in a very small percentage of cases. With reference to the sources of the bacilli which might infect children he said the unity of tuberculosis in man and animals was established beyond question, so discussion was reduced to the query as to whether the tuberculosis of children was derived *in toto* from previous cases in man or in part produced by tubercle bacilli present in the milk of diseased cows. The author was convinced that the part played by the bovine disease was a minor and for the present unimportant one. His reasons were the rarity of primary intestinal tuberculosis in children in this country, though there were many more cases of this kind in England and Scotland. Again the paucity of cases in which the development of tuberculosis in children could be reasonably referred to the ingestion of the milk of tuberculous cattle. Five years ago he was able to find scarcely a score of such cases in literature and in the meantime he had failed to add materially to that number. The most conclusive argument against the influence of milk as an agent in the communication of tuberculosis to man was to be found in the studies of Biedert and Ganghofner, who made careful comparisons between the number of tuberculous cattle and the number of deaths from tuberculosis in man in several districts of the country. They could discover no relation between the factors and concluded that while bovine tuberculosis was transmissible to man, such transmission played no part of importance in the prevalence of tuberculosis in man, and more particularly in children. The source of the bacilli which conveyed tuberculosis to children was therefore to be sought in other cases of human tuberculosis. The danger lay more particularly in the expectoration of consumptive patients. Control or conquer that source of infection and tuberculosis among children would sink into comparative insignificance.

Protection of Infants and Young Children from Tuberculosis Infection.—Dr. John Lovett Morse of Boston read this paper.

Arrest (Cure) of Tuberculous Processes in Infants and Young Children; Fresh Air; Seaside Hospitals.—Dr. John W. Brannan of New York read this paper which described in detail what had been accomplished at Sea Breeze, Coney Island, especially in the case of children with tuberculosis of the bones and joints.

Dr. Wm. P. Northrup of New York said that the Sea Breeze Hospital was next to Luna Park, Coney Island, and that many people could be seen hanging around there watching the patients play and romp, and not one of them but had a game leg. Dr. Wallace certainly had an awful collection of the ragged end of humanity, but he loved them and they all did well.

Dr. George M. Kober of Washington said that he wished to go on record as a believer in the transmission of bovine tuberculosis through the medium of the milk supply. According to Dr. Salmon it had been proven that in some countries from 40 per cent. to 50 per cent. of the cows had tuberculosis; in the United States the proportion was not so great, being probably not over 5 per cent. in the worse affected states. Theobald Smith, in 1893, from a number of experimental observations found that the tubercle bacilli might be present in the milk, when the udder so far as the naked eye could determine contained no foci of disease. The general results of inoculation experiments would seem to indicate that the infectious properties were greater with milk from animals with udder lesions and next from those affected with general tuberculosis. In 1903 Dr. Kober published 86 cases of milk bovine tuberculosis and offered the following conclusions: 1. Tuberculosis may be transmitted to man in milk from tuberculous cows; the danger from this source was real and could not be measured by the actual number of recorded cases, but should be judged in part at least by the inoculation and feeding experiments and the accidental wound infections which had established the intercommunibility of bovine and human tuberculosis. 2. The degree of danger might also be estimated by the prevalence of bovine tuberculosis and of the forms other than phthisis pulmonalis in man, remembering that the infectious qualities of milk were greater when the udder was the seat of lesions, and that Gebhardt's experiments had shown that tuberculous milk when diluted with the milk of sound animals in the proportion of 1 to 40 lost its infective power. 3. Further research seemed desirable with a view of determining the frequency of primary intestinal and abdominal tuberculosis in all cases which come to autopsy whether the child perished from tuberculosis or not, and in these autopsies the bacteriological examination should be directed to the existence of the two types of tubercle bacilli originally referred to by Smith, and whether the bovine type predominated in the so-called scrofulous lesions.

Dr. Norman Bridge of Los Angeles, Cal., said that it should be a matter for congratulation that Dr. Bovaird considered that there was so little danger of infection of children by milk in this country. He would not argue, however, that we should be less careful of the milk supply. The various cities in this country are coming, one after the other, to adopt a system of inspection of dairies. We were not justified in saying that human tuberculosis could not be produced by bovine bacilli.

Dr. Mazyck P. Ravenel of Philadelphia said that those people who believed that milk was not a means of infection in tuberculosis were those who might say that there was no relation between the tubercle bacillus and the disease. Children were infected with the bovine germ. A gentleman in England has made the statement that in 30 per cent. of the children with tuberculosis there was found the bovine bacillus. The human bacillus was the chief danger to mankind. But after the bovine bacillus had been a resident of the body for a certain period of time it could not be differentiated from the human bacillus; therefore, in a large proportion of the cases one could not say whether the infection was from the human or the bovine bacillus.

Dr. Bovaird agreed that infection by the bovine bacillus had been proven beyond a doubt, but what he had tried to point out in his paper was its infrequency. Dr. Ravenel had stated that in England 30 per cent. of the cases examined showed a distinct type of bacilli of the bovine variety. The point of special interest lay in the primary focus, particularly as the disease occurred in children, with tuberculous disease of the bones and joints. These latter were not the original foci. In most cases one would find unmistakable evidence of the disease in the respiratory organs. If this society expected to do much in the way of prevention of tuberculosis, it should first look for the original source of the disease and not to the amount of damage done in the bones and joints. Primary tuberculosis had been demonstrated in the tonsils. Children more often died from pulmonary tuberculosis than from tuberculosis of the bones and joints.

Dr. S. A. Knopf of New York said that he did not fear the air of New York City, but the dust that was contained in it, and he always advised his tuberculous or other patients to hold the hand before the mouth, not to talk in the open, and to breathe through the nose. A point that had not been sufficiently emphasized was that these children should be taught not to fear not only draughts but also the night air; "night air is a night mare." At Sea Breeze there was an absolute fearlessness of pure air and night air.

Dr. Wallace of Sea Breeze, Coney Island, after referring to the great help, moral and financial, that Dr. Brannan had been to them at Sea Breeze, told of the treatment of these children, and spoke under four heads, as follows: (1) Sea air night and day; (2) ample nourishing food; (3) the establishment of a happy, cheerful, and childlike normal disposition; (4) the orthopedic treatment, which

was carried out with but little manipulation, as little as possible.

Resolution.—Dr. JOHN W. BRANNAN of New York offered the following resolution:

Whereas, Recent experience in Europe and in this country has shown that out-door life in pure air has the same curative effect in surgical tuberculosis as in tuberculosis of the lungs; therefore be it

Resolved, That in the opinion of the members of this Section, hospitals and sanatoria should be established outside of cities, either in the country or on the seashore, for the treatment from its incipiency of tuberculosis of the bones, joints, and glands in children.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held March 8, 1906.

DR. MATTHIAS NICOLL, JR., IN THE CHAIR.

A Case of Aortic Stenosis in a Child Eleven Years Old.—Dr. JOHN HOWLAND presented this patient, a girl, 11 years old, whose heart condition was discovered during a routine examination by a school inspector. The entire interest in this patient centered upon the physical examination. Upon inspection there was noted a heaving impulse on the left side of the chest with the apex beat in the fifth intercostal space, one and one-half inches to the left of the median line. Over a considerable portion of the precordium a thrill could be localized, with its greatest intensity over the second intercostal space on the right side. One murmur was heard at the apex; this was transmitted to the axilla, to the back, and was systolic. A second murmur was heard, harsh, with greatest intensity at the second intercostal space on the right; the sound was transmitted to the vessels of the neck, into the axillary and brachial arteries, being heard about three inches down the left arm. The second pulmonic sound was accentuated. There was a *pulsus tardus.* Aortic stenosis was extremely uncommon at the age of 11 years. Northagel had stated that a congenital stenosis was incompatible with life. The patient presented had a mitral insufficiency as well, and one would hardly say that the mitral lesion was acquired on top of a congenital aortic stenosis.

Lipomatosis Universalis in an Infant Eleven Weeks Old.—Dr. JACOB SOBEL reported this case, with photographs. The child was eleven weeks old. The mother was 24 years old, a first cousin to her husband. She was the mother of three children. The first child appeared normal, and was born at full term. The second child had a normal birth and appeared normal until the fourth week, when enlargement of the head and fat accumulation were noticed. This child subsequently became blind, and died at the age of eight months from bronchopneumonia complicating, or, as a terminal infection of, amaurotic idiocy. The third child, the subject of the report, was born after a normal labor. Nothing unusual was noticed until the fifth week of life, when a fullness of the cheeks was noticed when, warned by her previous experience, the mother sought advice. The fat continued to collect in the nape of the neck, the chest, the suprapubic region, and other parts of the body. Here followed a complete report of the history. In his general remarks Dr. Sobel said here was a child, eleven weeks old, of normal birth, of Hebrew parents, related as first cousins, who at five weeks showed the first signs of illness in the form of fat accumulation in the cheek. Following this there was a general obesity, so that in certain parts, as the abdomen, neck, back, thighs, and buttocks, large masses of fat could be grasped with the hand. Coincidently the child became less sensitive to its surroundings, cried at night, appeared to be blind, had bronchitis, weakened perceptibly, and finally died at the age of three months. During all this time the head was held erect and did not fall backwards. This history, including the partial blindness, corresponded to cases of lipomatosis. But with a similar history in a brother who died of amaurotic idiocy at the age of eight months, and with an absence of ophthalmoscopic examination, it might be questioned whether the case was one of uncomplicated lipomatosis. Generalized obesity was uncommon in amaurotic idiots. The holding of the head erect was presumptive evidence against amaurotic idiocy. In view of this history he recorded the case as one of lipomatosis universalis infantilis, unusual in itself, but more so because of the possibility of its being associated with or complicating amaurotic family idiocy.

A Case of Exophthalmos.—Dr. F. S. MEARA presented a child, seven weeks old, who had a very extensive nevus. There was an anomalous appearance of the ear and a discharge from the umbilicus which had existed since birth. There was a decided exophthalmos of the left eye, and he believed there was a possibility that the child might have some dilatation of the retrobulbar veins, as had occurred in the nevus. There was no history of cerebrospinal meningitis; there was no aneurysmal varix, nor thrill over the affected eye. Dr. Cutler, who examined the child, called attention to an enlargement of the eye. There was the suggestion of a possible congenital glaucoma.

Rachitis in a Child of Eleven Years.—Dr. HERMAN SCHWARZ presented a boy almost 12 years old, who was of normal birth and development. When nine months old he had had prolapse of the rectum and the mother was told that he was rachitic. He had been breast fed until eleven months of age, and afterwards fed on starchy foods. He had been constipated most of his life, and had headaches, dizziness, and vomiting. When seen six months ago by Dr. Schwarz there was nothing abnormal except that his head was typically rachitic and there were more leucocytes than usual in the blood. The tonsils were large and there were adenoids. He had the peculiarly shaped rachitic chest, with beading of the ribs, and protuberant abdomen. The spleen and liver were enlarged. The extremities were deformed, and there was a nodule to be felt at the outer edge of each ulna. There was also a scoliosis and kyphosis. There were 340 grains of urea passed daily and albumin in the urine. It was remarkable that the deformities of rachitis should have been so extensive, and while the rachitic features were progressive, they had been stationary for a number of years. While rachitis was the most likely diagnosis, the condition might be an infantile osteomalacia. Osteogenesis imperfecta was also considered as a possibility, but it was usually believed that this latter affection was fatal at time of birth, or soon after. He thought the case was one of rachitis of persistent form. Phosphorus, cod-liver oil, etc., had been given with but little result.

Dr. NATHAN advised surgical measures if the deformities did not clear up under present treatment. The case showed that disturbances of metabolism might continue beyond childhood and result in bone deformities resembling those of rickets and yet differing from rickets in the absence of certain symptoms which were usual in rickets. In children with osteomalacia the signs were the same as in rickets, as far as the bones were concerned. When the nutrition of the bone was interfered with, certain conditions took place in the bones that simulated rickets, with an irregular formation of uncalcified bone and thickening of the epiphyses due to irritation of the soft bone. In the absence of metabolic deformities in the bone one could not say that the condition was due to malnutrition from improper food.

Dr. Charles Herman said that he had seen a similar case several years ago. Some other disease of the bone besides rickets was probably present. The child did not appear to him to be as intelligent as he should be at that age.

Report of a Case of Hypertrophic Pyloric Stenosis; Operation; Exhibition of Specimen.—Dr. Louis Fischer presented this communication. After a review of the literature on the subject the case was reported, illustrating a typical hypertrophic stenosis of the pylorus in which the active symptoms began when the baby was six weeks old. The child weighed 8½ pounds at birth, was well developed, and nursed vigorously. The child gained in weight and slept four and five hours at a time. When six weeks old he suddenly commenced vomiting after each nursing. There was no gain in weight; the vomiting occurred several hours after feeding. The amount vomited ranged between one and two ounces; sometimes as much as eight ounces. Weaning was ordered and a wet nurse provided, but the vomiting continued as before. After one week the wet nurse was discharged and various home modifications of milk were ordered, but without improvement. Dr. Fischer first saw the child when he was two and one-half months old. Emaciation was extreme, the skin had lost its normal elasticity, and there was a very thin layer of panniculus adiposus. The weight was 7½ pounds, one pound less than at birth. The physical examination showed a stomach which appeared like a distended balloon at times, at others flat. Tympanitic note was obtained on percussion. There was also a splashing sound very distinctly heard when the organ was palpated. Strong peristaltic waves were noted when the baby was fed, extending from left to right. There was a distinct hour-glass contraction, the stomach bulging on either side with a sulcus in the middle. These active peristaltic and antiperistaltic waves were at times so strong that the stomach appeared like a double bulb seen on an ordinary atomizer. These waves were usually followed by vomiting. Although the baby was but ten weeks old, the capacity of the stomach was about fourteen ounces. Not only was the baby suffering from a pyloric stenosis, but also with an acute dilatation of that organ as well. The siphoning of the gastric contents was effected several times, and a marked insufficiency was found. Early in the disease vomiting was occasional, but as the symptoms progressed vomiting became more frequent and followed the ingestion of any liquid. The trained nurse counted twenty-seven large and small vomiting attacks in twenty-four hours. Examination of the gastric contents showed the presence of lactic acid and a total absence of hydrochloric acid. The condition of the bowel was decidedly characteristic. At two and one-half months the child weighed two pounds less than at birth, and the prognosis was bad. Surgical treatment offered the only plausible relief, and operation was decided upon.

Dr. Arnold Sturmdorf said that on January 17 he was requested to perform an immediate operation for the relief of a congenital hypertrophic stenosis of the pylorus in the case reported by Dr. Fischer. At the time of operation the extremely emaciated, atrophic infant presented a weak but distinctly perceptible pulse of about 120. Through an inch and a half incision carried slightly to the right of the midepigastric line, the hypertrophied pylorus was drawn forward, just sufficiently to bring the duodenum and the pyloric end of the greater curvature of the stomach into easy apposition, somewhat in the manner of the first step in the Finney operation. The contiguous parts were rapidly anastomosed by double tier sutures and the abdomen closed. The time consumed in actual operative work was twenty-two minutes; the administration of the narcosis had to be interrupted many times because of the condition of the child; this, added to lack of facilities essential for rapid work, caused anxious and annoying delays. He briefly summarized his impressions from a practical and theoretical consideration of this condition as follows: 1. Embryological, pathological, and clinical facts indicated that this condition should not be interpreted as congenital, and that it would be better termed infantile pyloric stenosis. 2. For practical purposes, the condition should be looked upon as presenting three stages, viz., simple spasm of the pylorus, spasm and hypertrophy of the pylorus, and tumefaction and stenosis of the pylorus. 3. The diagnosis of the first and second stage was extremely important, as it was possible in these stages that medical and dietetic measures might be of curative value. 4. Medical and dietetic measures should not be tried too long and divulsion be resorted to before the hypertrophic stage was reached. 5. The hypertrophic stage reached, gastroduodenostomy, in two sittings if necessary, should be the operation of choice.

Specimen of Pyloric Stenosis Occurring in a Child Eleven Years Old.—Dr. John Rogers presented this specimen. The history given was almost exactly the same as in the case presented by Dr. Fischer. A posterior gastroenterostomy was performed without the loop. The child did well for awhile, but on the seventh day a stain was noted on the dressing, and the gut was found to be prolapsed. This was reduced. For five days all went well, but on the thirteenth day the patient began suddenly to vomit, symptoms of peritonitis developed, and the child died on the fifteenth day. The intestine was found to be adherent to the dressings, and there was a slight adhesive peritonitis. No pus was found in the peritoneal cavity. The gastroenterostomy wound was found to be in perfect condition.

Dr. Charles Herman asked if the case presented the usual conditions. Many cases got well without interference, because fortunately they did not all go on to stenosis.

Dr. Arnold Sturmdorf said that some cases showed only a spasmodic condition of the pylorus and nothing else. Many cases, no doubt, had been reported as cured when they had not been the subjects of pyloric stenosis at all. An early diagnosis was all-important; if diagnosed early enough, the divulsion operation could be employed. The Loretta operation was applicable only to the spasmodic forms.

Dr. Louis Fischer said that the diagnosis of meningitis had been made before he saw the child. The vomiting and emaciation had been extreme and, therefore, in order to save the child, he proposed the operation. He recalled another case in which the child died of inanition.

Dr. Rogers said it was safer to do this operation in one stage than to attempt it at two sittings. The button operation was an impossibility; it might become clogged, or would be too large to pass through the intestine. They were reduced practically to the suture operation. The quickest operation was gastrojejunostomy.

Circumscribed Edema.—Dr. F. S. Meara reported the case of a male infant, one year old, who, up to seven weeks ago, had been perfectly well. He then had an uneventful attack of measles and, two weeks later, he had a convulsion, which was attributed to cutting teeth; this again occurred three weeks ago, or two weeks after the first. The present illness was attributed to a meal of cabbage and potatoes given the child one day before the onset. The day following this delectable meal, a red spot appeared on the left leg; the next morning the baby awoke screaming and the mother found the left leg swollen, "as if it would burst," right up to the groin. This lasted one day. Among the points of special interest was the clear history of what might be assumed as the exciting cause of the onset,

the meal of cabbage, the massive character of the swellings, and the great area involved in each. Practically the whole body was affected in its course. It was also of interest to note how it passed from limb to limb and then to the body, and how each fresh outbreak occurred in the morning, and how brief was its existence. That it should have been mistaken for a cellulitis by a hasty observation was not surprising. The evidences of visceral involvement were not many, but the anuria and the small amount of albumin suggested at least a congestion of the kidneys, with, perhaps, some acute degeneration. The diarrhea might have been due to a similar process in the wall of the gut, but colic seemed to have been absent. The child escaped laryngeal involvement. The child certainly had incipient rickets, and the two convulsions were but another sign of this condition, an explanation which seemed more probable than to assume an involvement of the brain substance in an edema, as had been reported in some cases.

Dr. Herman Schwarz related the history of a child who had attacks of edema every three or four weeks. The severe colic that the child experienced was a point of interest, and the pain was not controlled by anything but the use of morphine. In addition to pain there was vomiting of a clear fluid. As much as 200 c.c. was vomited at one time, and this fluid contained considerable albumin. The urine was absolutely negative, and there was no rise of temperature with the attacks. The stools were never watery during these attacks. He had never succeeded in obtaining a piece of the stomach mucosa prior to an attack, although the child had been kept on a vegetable diet for three or four weeks. Much serum and coagulated albumin were found in the intestinal contents. There was no hereditary factor. Angioneurotic edema might follow the use of antitoxin. He also referred to a case in the literature in which the lung was involved 115 times. The edema might last from fifteen minutes to three hours.

Dr. Beer said that he believed that they were discussing two different diseases, giant urticaria and angioneurotic edema. He thought Dr. Meara's case was one of urticaria.

Dr. Charles Herman spoke of a case of circumscribed edema of the upper eyelids. There was neither pain nor constitutional symptoms during the edema. He had seen two cases during the past year and did not think the disease as rare as was supposed.

Dr. Meara, in closing the discussion, said that the case reported was interesting, and that nearly all cases that he knew of occurred in adults. He said that a patient might have urticaria at one time and massive edema at another. So far as he knew, there was no agreement among authorities in regard to these two conditions. The same process might manifest itself in different ways in neurotic subjects.

Stated Meeting, Held April 12, 1906.

Dr. Matthias Nicoll, Jr., in the Chair.

A Case of Sporadic Cretinism.—Dr. E. Mather Sill presented this patient, a little female cretin baby, ten months old, with a perfectly normal appearance. When seven months old the child weighed 10 pounds, was 24 inches in length, head circumference was 15½ inches, and the abdomen measured 17½ inches. The tongue protruded and there was an umbilical hernia. The skin was dry and wrinkled and the eyelids were puffed up and the whole face had a swollen appearance. The hair was coarse and dry. The child had snuffles and a cold most of the time, and was unable to sit alone. The child never smiled and always appeared dull and stupid. Thyroid extract was given in increasing doses. The child now appeared bright and active and could sit alone, laughed and tried to talk. The tongue did not now protrude. The head measured 15¾ inches in circumference, the abdomen 16 inches, the length was 25 inches, and the child had gained more than three pounds in weight.

A Case of Microcephalus.—Dr. Sill presented this patient, a child fourteen months old, large and well developed, who was brought to him when nine months old because of not being able to sit alone or hold its head up. The child was markedly well developed except the head, which was microcephalic. The ears were large and there was slight strabismus and a stupid expression. The sutures and fontanelles were completely closed. Labor was easy. Parents were healthy. Now at the fourteenth month the child was little if any improved in its mental condition. The question arose as to whether this was a case of premature ossification of the bones of the skull, or whether there was a disease of the brain substance (porencephalon), or whether there was primarily an arrest of development of the brain substance. Dr. Sill believed this to be a case of premature ossification of the skull bones causing an arrest of development of the brain. The advisability of operation here arose.

A Case of Mongolian Idiocy.—Dr. Sill presented this patient, 21 months old. The parents were well. The mother had eight other children, all healthy. She had no miscarriages. Four of the children died. The first child was 18 years old, in good health, and in the eighth month of pregnancy. With the second child the mother was injured and the baby was born dead. The third child died when seven weeks old from pertussis. The fourth child died of gastroenteritis when three months old. The patient was born blue and did not breathe for one half hour. On the third day had a convulsion and had always been weak since and always had a cold. The child was poorly nourished, pale, anemic, with small, cuboid head, the anteroposterior and lateral diameters being equal. There were widely open fontanelles, dry, waxy skin, the eyes of Mongolian type. The mouth was open, the tongue protruded, and the child had an idiotic, stupid expression. The ears were large, the chest rather small, the abdomen large. The little finger was short and had an inward curvature. The thumb was short. There was a great laxity of the joints and ligaments. The muscles were flabby and the child could not sit alone. The palate was highly arched and the two lower incisors were just pushing through the gum. There was atelectasis at the base of the lung and some congenital disease of the heart. The child smiled but was stupidly affectionate and easily amused. The hemoglobin percentage was considerably below the normal and the red blood count was markedly diminished. Mongolians were very backward in their growth. The outlook in these cases was pretty hopeless and they were a constant care and burden to their parents.

Dr. Henry Heiman said that the majority of these cases of Mongolian idiots died of some pulmonary affection. He called attention to the use of thyroid extract in differentiating between cretins and Mongolian idiots; if improvement followed its use for three or four months one could assume the cretinoid condition, or a mixture of the cretinoid and the Mongolian imbecile condition.

A Case of Amaurotic Family Idiocy.—Dr. Isadore Goldstein presented a female baby, aged eight months. There was no history of consanguinity, imbecility, epilepsy, tuberculosis, lues, or alcoholism in either parent or ancestor. The child had a normal birth and was breast fed. When five months old the mother noticed that the child differed from other children of same age; she could not sit up or hold the head erect. The physical examination showed a well nourished child, but inability to support the head and back. The anterior fontanelle was open (3 cm.) and bulging. The child was stupid, with an empty and listless expression. The eyes rolled and there was a horizontal nystagmus. The left pupil was larger than the

right. The fundi showed the characteristic grayish white patch in the macular region, in the center of which was a brownish red, sharply defined oval spot. There were perforations of both drums and deafness. There were chewing movements of the mouth, some difficulty in swallowing and an occasional stridor. There was a right lateral lordosis. Muscles and reflexes were normal.

A Case of Amaurotic Family Idiocy.—Dr. GOLDSTEIN also presented this case, a female child, aged fourteen months, with a history very similar to the first case presented by him.

Dr. G. D. SCOTT said that some of the so-called feeble minded children appeared to be so because of the presence of perforated drum head or some retardation in development. Cases appearing to be idiots often were but feeble minded.

Dr. HENRY HEIMAN said that these cases were all typical and classical. The children were born in a perfectly normal manner and remained normal for five or six months. In order to differentiate between the feeble minded and idiots it was necessary to examine for the characteristic macular appearance in the eye, as referred to by Dr. Goldstein.

Dr. CHARLES HERMANN said that the majority of the reported cases came from America; they were more often recognized here than abroad, and yet he believed many cases were overlooked. These cases belonged to the group which Gowers had described as congenital vulnerable nervous structures.

A Case of Pernicious Anemia.—Dr. SARA WELT-KAKELS presented the history of a child, eleven years old, who was brought to the Mount Sinai Dispensary last February. The skin was very pale, with a slight icteric tinge. The mucosæ were pale. There was slight edema of the eyelids and about the ankles. The lymph nodes were enlarged. The pupils were dilated but reacted to light. The cardiac dullness was increased, extending to the right border of the sternum. The apex beat was in the normal position. There were loud, anemic murmurs over the entire area, especially at the base, and in the great vessels of the neck. The heart's action was 96. The abdomen was distended but the liver not enlarged. The urine contained some bile pigment. No parasites were found in the feces. The red blood cells numbered 1,670,000, the whites 4,300, hemoglobin 26 per cent., and color index 0.84. The differential count of the whites revealed nothing abnormal.

A Case of Persistent Ductus Arteriosus with Incomplete Ventricular Septum.—Dr. SARA WELT-KAKELS presented this patient, a girl three years old. The anomalous condition was found accidentally during a routine examination. When eighteen months old the patient had an attack lasting for a few minutes, during which the eyes rolled upwards and the hands clenched, but there was no frothing at the mouth. These spells occurred several times in the course of the next few months. She was fairly well developed, very bright and lively. There was no cyanosis of skin or mucous membranes. The pulse was 100, respirations 22. Lungs were normal. Thymus dullness was present. The apex beat was rather diffuse and the cardiac dullness extended along the left border of the sternum up to the second intercostal space in the shape of a narrow quadrangle. This increase in cardiac dullness was plainly visible on the shadowgraph. A loud systolic bruit over the apex and even over the base was heard; this was conducted into the left interscapular space and into the large vessels of the neck. It was also distinctly heard to the right of the sternum over a large area and into the abdominal aorta. The absence of hypertrophy of the right ventricle suggested an incomplete ventricular septum. Erythrocytes numbered 6,000,000 and leucocytes 6,800. The abdominal organs and urine showed nothing abnormal.

A Remarkable Case of Congenital Heart Disease.—Dr. EUGENE P. BERNSTEIN presented a specimen of a heart which showed the type of a true mammalian heart, having two auricles and two ventricles, but functionally it was almost a typical reptilian heart, the right auricle being but an antrum for the left auricle, the auricular septum being entirely absent except for a small strand, and no blood could enter the ventricles from this antrum. The right ventricle was but a mere slit in the muscular wall of the left ventricle, having absolutely no function, the conus arteriosus dilating and forming a so-called third ventricle. At the origin of the aorta, under the right aortic flap, was an opening the size of a quill, leading from the left ventricle into the conus arteriosus. Through this small opening all blood to be aerated must pass, and the presence in this opening of a vegetative polypoid mass, tightly adhering to its edge, and almost entirely closing it, probably was the cause of the terminal convulsions and death, acting as a ball-valve thrombus, and closing off the circulation. The left ventricle was dilated, and the walls considerably hypertrophied. The valves were not diseased. The aorta had four main branches coming from its arch. Whether there were any bronchial, esophageal, or pericardial arteries which might have supplied blood to the lungs, could not be determined because of the limited autopsy permission. The blood current, he said, must have been as follows: From the venous system, through the superior and inferior vena cava, to the right auricle, to the left auricle, into the left ventricle, from which place it was divided into two channels, the smaller through the opening under the right aortic flap into the conus arteriosus, pulmonary artery, and lungs, the larger through the aorta to its branches. The case was recorded as a congenital cardiac disease with a polypoid thrombus, two very rare conditions. The disease was not suspected until the child was sixteen months old, and then only because the child was treated for bronchitis. The child lived to be two years and eight months old, a truly remarkable thing with such a heart.

Dr. SARA WELT-KAKELS had a child under observation, one of those blue-black babies, which proved the difficulty in making a diagnosis in these congenital heart cases. A diagnosis of the congenital cases was better made by auscultation than by percussion; hypertrophy might be present, but be compensatory for other conditions present.

Dr. MATTHIAS NICOLL, JR., recalled a celebrated case seen about eight or nine months ago. The child after exercising became almost black, and many men made an attempt at diagnosis. It was found that the case was one with practically one ventricle and two auricles.

A Case of Transposed Viscera.—Dr. BALDWIN presented this case for Dr. Louis C. Ager. The cardiac impulse was found to be on the right, the liver on the left side, but the spleen could not be mapped out. The transposition was verified by *x*-ray.

Deformity of the Chest from Fibroid Contraction of the Lung.—Dr. L. E. LA FETRA presented this case. Especial attention was called to the height of the shoulders, the thinness of the chest anteroposteriorly upon the left as compared to the right side, as well as to the prominence of the scapulæ, showing a lack of development of the thoracic muscles. The case was presented more on account of the deformity of the chest. There was a hollowness under the left clavicle, and the left scapula in particular was very prominent. The chest measured in circumference at the nipple 21 inches; the left side measured, from mid-sternum to spine, 9 1-2 inches; this showed a difference between the two sides of two inches. The apex was displaced to the left almost to the anterior axillary line. The heart sounds were all abnormally loud, and the second pulmonic sound was markedly accentuated, perhaps due to the resistance to the passage of the blood through this left lung. The condition was probably due to the contraction of the fibrous lung and thickened pleura, following an interstitial pneumonia that accompanied the original bronchopneumonia.

There was a bronchiectatic cavity at the lower part of the left upper lobe.

Notes on the "Roof Cure" at the Presbyterian Hospital.—Dr. William P. Northrup told of the overcrowded wards and bad ventilation in this hospital, and said that just one year ago the children were placed on the roof. At once a marked change was noted, in that the children's color became better and they appeared to be far more comfortable. He emphasized the fact that they had, not a roof-garden, but simply a roof. He hoped they would have a roof-garden later. Sun and air were needed, and on the roof they got both.

Pathological Society of Philadelphia.

At a stated meeting held September 27, Dr. C. V. White exhibited specimens of amyloid liver and spleen, as well as a mass of tuberculous mesenteric glands and small intestine, from a case of pulmonary tuberculosis. The liver weighed 4,700 grams and measured 12x10x5 cm. The spleen also was much enlarged. The intestines contained numerous ulcers and in places infected lymphatics could be seen beneath the serous covering. Dr. A. G. Ellis exhibited a specimen of "Lipoma of the Uterus." The neoplasm is an exceedingly rare one in this situation, only eleven instances having been recorded in the literature. The histogenesis is difficult of explanation, inasmuch as the uterus contains no fatty tissue, and the condition lends confirmation to the embryonic theory of the origin of new growths. Dr. M. Howard Fussell exhibited a brain presenting the lesions of basilar meningitis. The spinal cord was similarly involved. The patient was a man who had been under treatment for disease of the ears, and on account of pain and swelling in the mastoid region this portion of the temporal bone was trephined, but without finding disease or affording relief. Dr. A. J. Smith presented a communication entitled "Method of Production of Intussusception." He related a case of metastatic hypernephroma of the bowel, giving rise to intussusception and apparently showing that at least after the process has been inaugurated it is continued in part through the active descent of the serous covering of the inner layer of the intussuscipiens. The specimen presented exhibited two intussusceptions, one direct and the other retrograde, a secondary hypernephroma being present at the apex of each. Drs. A. J. Smith and W. T. Cummins presented a communication entitled "Histological Studies of Rabbits After Adrenalin Injections. Preliminary Report." They pointed out that some of the atheromatous changes observed after injections of rabbits with adrenalin might be due to other causes, inasmuch as similar alterations are not rarely encountered in these animals apart from experimental treatment or other morbid affection. Certain changes in the muscular coat of the arteries and in the lymphatic glands, however, were quite constant in appearance. The cytoplasm of the muscular fibers in the middle coat of the vessels accepted stains poorly and the nuclei were distorted. The lymphatic structure of the glands exhibited injection and hemorrhage.

Toxic Action of Sulphuretted Hydrogen.—Angelo De Dominicis has made a study of the method in which poisoning by hydrogen sulphide kills. He killed dogs rapidly by placing them in an atmosphere of concentrated hydrogen sulphide. Immediately after death he made a chemical examination of the brain and blood to ascertain the amount of hydrogen sulphide present. In the brain tissue there was always a manifest reaction to the gas. In a solution of the blood there was no trace of the gas. The amount of hydrogen found in the brain bears no relation to the amount in the blood, and there seems to be a sort of affinity of the gas for the brain tissue and nerve substance. Its presence in the brain tissues and the peculiar color reactions obtainable with the gas may serve as a means of diagnosis in cases of death from this cause.—*Giornale Internazionale delle Scienze Mediche.*

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Aids to Surgical Diagnosis. (Students' Aids Series.) By Dr. H. W. Carson, F.R.C.S. 16mo, 140 pages, muslin. William Wood & Co., New York. Price, $1.00.

The Urethrotomies and Kidney Capsulotomy in Diseases and Injuries of the Urinary Organs. By Reginald Harrison, F.R.C.S. 8vo, 96 pages, illustrated, muslin. William Wood & Co., New York. Price, $1.25.

The Operative Treatment of Prolapse and Retroversion of the Uterus. By J. Inglis Parsons, M.D., M.R.C.P., M.R.C.S. 8vo, 90 pages, illustrated, muslin. William Wood & Co., New York. Price, $1.25.

Phlebitis and Thrombosis. By Warrington Haward, F.R.C.S. Eng. 8vo, 88 pages, illustrated, muslin. William Wood & Co., New York. Price, $1.50 net.

Lectures on Midwifery for Midwives. By A. B. Calder, M.B., M.R.C.S. 8vo, 274 pages, illustrated, muslin. William Wood & Co., New York. Price, $2.00 net.

Report of the Commissioner of Education for the Year Ending June 30th, 1904. Volume I. 8vo, 1,176 pages, muslin. Government Printing Office, Washington.

Medical Jurisprudence, Forensic Medicine, and Toxicology. By R. A. Witthaus, A.M., M.D., and Tracy C. Becker, A.B., LL.B. Volume I. Second Edition. 8vo, 996 pages, illustrated, muslin. William Wood & Co., New York. Price, by subscription: muslin, $6.00, and law sheep, $7.00 per volume.

Annual American Catalog, 1905. 4to, 329 pages, muslin. Office of the Publishers' Weekly, New York.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D. Volume II. Sixteenth Series, 1906. 8vo, 302 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia. Price, $2.00 net.

The Practice of Pediatrics. (The Practitioner's Library.) Edited by W. L. Carr, A.M., M.D. 8vo, 1,014 pages, illustrated, muslin. Lea Brothers & Co., Philadelphia.

A Compend of Materia Medica, Therapeutics, and Prescription Writing. By Samuel O. L. Potter, M.D., M.R.C.P. Lond. Seventh Edition, Revised and Enlarged. 12mo, 292 pages, muslin. P. Blakiston's Son & Co., Philadelphia.

Manual of Anatomy. By A. M. Buchanan, M.A., M.D., C.M., etc. Vol. I. 8vo, 596 pages, illustrated, flexible muslin. W. T. Keener & Co., Chicago. Price, $2.75 net.

Jahrbücher der in- und auslandischen Gesammten Medicin. 1906. By P. J. Möbius and H. Dippe. 4to, 112 pages, paper. S. Hirzel, Leipzig.

Streptococcie, Staphylococcie, Pneumococcie, Colibacillose. By F. Widal, J. Courmont, L. Landouzy, and A. Gilbert, 8vo, 147 pages, illustrated, paper. J. B. Baillière et Fils, Paris. Price, 3 fr. 50.

Étude Clinique et Traitement de la Lithiase du Cholédoque. By Dr. Raymond Français. 8vo, 158 pages, illustrated, paper. G. Steinheil, Paris.

Anthropologie, Hygiène Individuelle, Éducation Physique. Sous la Direction de MM. P. Brouardel et E. Mosny. 8vo, 299 pages, illustrated, paper. J. B. Baillière et Fils, Paris. Price, 6 fr.

Outlines of Practical Sanitation for Students, Physicians, and Sanitarians. By Dr. Harvey B. Bashore. 12mo, vi. + 208 pages, 42 figures, including many half-tones. Cloth, $1.25 net. John Wiley & Sons, New York.

Commentarii di Clinica Medica Desunti Dalla Morfologia del Corpo Umano. By Prof. Achille De Giovanni. 8vo, 429 pages, illustrated, paper. Vol. I. Ulrico Hoepli, Milan. Price L.8.

A Text-Book of Genitourinary Diseases. By Dr. Leopold Casper. Translated and Edited with Additions. By Charles W. Bonny, B.L., M.D. 8vo, 618 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price $6.00, net.

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By EUGENE CAROLAN, M.D.,

BROOKLYN, NEW YORK.

In 1897 I had an instrument made called the automatic chloroform inhaler. Experience in the use of this inhaler has led to the adoption of some improvements. I have discarded the towel as a mask and substituted a large wire frame to fit over the face, with a hook attached at its posterior part to connect with the headband. The inhaler now consists of a headband, support, and a large frame mask. The support is a brass bar (nickel plated) shaped at an obtuse angle, one end secured to the headband by a set-screw, the other end having a clamp which keeps the bottle dropper in position. The bottle when in place drops the anesthetic on the mask over the patient's mouth. This bottle is globular in shape, and holds an ounce of the fluid. It is pierced by a tube branching outward into two smaller tubes, one to admit air if needed, the other to drop the liquid. The tube which drops the anesthetic has a little conical pin inserted into it to regulate the quantity of the anesthetic let fall on the center of the mask. It is my custom to regulate it to drop thirty or forty drops to the minute. The mask is large and can be attached to the headband or detached at a moment's notice. This wire frame is covered with stockinette if chloroform is used.

The automatic chloroform inhaler is of special utility in the second stage of labor, when it is necessary to apply forceps or perform version. The manner of application is as follows: Turn the patient crosswise in the bed, apply the headband securely around her head immediately above the eyebrows, attach the support to the headband, put the mask in place, and start the drops as directed above. The patient will be anesthetized in from five to ten minutes to the surgical degree. When one is without an assistant it is advisable to take plenty of time in its application. Producing anesthesia in ten minutes is better and safer than doing it in five minutes. The patient is not to be raised up while in chloroform narcosis. In getting the patient's buttocks well to the edge of the bed, pull on the lower extremities without raising her to a sitting posture. If the patient shows signs of returning consciousness one can reach over from his position in front to start the bottle dropper, and one will observe that it takes very little chloroform to make the patient insensible to pain.

While extracting the child with forceps or performing version I watch the patient's respirations and the color of her face. I occasionally feel her pulse. If the color changes to a pallor or the respirations become irregular I instantly stop the dropping of the chloroform by turning the bottle upward and detaching the mask. I then complete the delivery of the child. If there are any lacerations of the pelvic floor or perineum the patient is sufficiently under the chloroform to permit of their repair in most cases.

According to Schleich, Wedig, and Meyer, chloroform, having a much higher boiling point than the body temperature, stays in the blood longer than the other anesthetics. I believe it, and that is the reason why I prefer using it in labor cases when an anesthetic is called for. When chloroform is administered in the presence of lighted gas jets the room should be well ventilated, since the burnt vapor of the anesthetic yields irritant products, especially carbonyl chloride, capable of inducing pneumonia when inhaled in a concentrated form (Stevens).

The patient while under the anesthetic may, through muscular relaxation, turn the head to one side, and if so the mask stays in position, while the bottle dropper can be pointed so as to drop the drug over the mouth. In case one prefers to have the patient's face turned upward, it is easily accomplished by putting a pillow on each side of the head, thereby holding it steady.

Although I have never lost a case in labor from the effects of chloroform anesthesia, I am just as

careful using it in those cases as I would in the case of a child. Chloroform has a distinct advantage over ether in its more agreeable odor, the small quantity used to anesthetize, the rapidity of its action, and its freedom from exciting emesis.

In lauding chloroform as an anesthetic I am not unmindful of its baneful effects when carelessly used. If a person uses the inhaler under consideration in a reckless manner, permitting the drops to fall so fast on the mask that they cannot be counted, without due observation of the patient's color, respirations, and pulse, it will not take long for him to destroy the patient's life. As the great Samuel Grass said years ago, "Although chloroform is one of the greatest boons that has been bestowed on man for the prevention and alleviation of pain, yet, like every other remedy, it is capable, when abused or injudiciously administered, of producing the most deadly effects." The anesthetizer may meet a case of unusual susceptibility where the inhalation of a small quantity of chloroform produces alarming symptoms; fortunately those cases are very rare. I have read about them, but I have never seen a case of such an idiosyncracy. In fact, I doubt that a few drops of chloroform inhaled will kill a healthy person, notwithstanding the report that Simpson's first case succumbed to the first few whiffs. If we investigate the deaths from chloroform inhalations we find that they occurred in trivial operations, such as pulling teeth in the dentist's chair, oper-

ations on the eyes and throat where the patients were in the sitting posture; therefore the sitting posture is positively interdicted while using the automatic chloroform inhaler.

The experienced anesthetizer may find this automatic inhaler a valuable adjunct to this ahmamentarium. He will notice that the drops fall more steadily and accurately from the bottle attached to the patient's head than from his hand; furthermore, not having to hold the bottle, both his hands are free.

917 Bedford Avenue.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending October 20, 1906:

	Cases	Deaths.
Tuberculosis Pulmonalis	359	174
Diphtheria	194	22
Measles	61	4
Scarlet Fever	89	3
Smallpox	2	—
Varicella	20	—
Typhoid Fever	121	25
Whooping Cough	24	13
Cerebrospinal Meningitis	11	13
Malarial Fever	...	.....
Totals	881	254

Infantilismus with Gastrosuccorrea and Tetanus.—Michele Landolphi describes a case of infantilismus which resulted from gastrosuccorrea of Reichmann's type, and the poisoning from this source produced attacks of tetanus. Infantilismus may be of the type of Lorain, in which it is degenerative and characterized by weakness, small and slender body, and delayed development, with the appearance of an old man. Development, mental and physical, is not arrested, but delayed. This form results from infections, such as tuberculosis, hereditary syphilis, malaria, etc. Intoxications from alcohol and tobacco may lead to it. Another set of etiological factors is connected with defects and lesions of the cardiovascular apparatus. The type of Brissaud gives a true childish form, with big head, infantile stature, and long legs out of proportion to the body. Development is arrested as a result of thyroid insufficiency, and a myxedamatous condition is present. The author's case resulted from autointoxication, due to excessive acidity of the stomach contents, resulting in poisoning which delayed development and caused the tetanic attacks.—*La Riforma Medica.*

The Dosage of Diphtheria Antitoxin.—John Howland believes that diphtheria antitoxin is so innocuous that the unpleasant symptoms occasionally noted after its use may be disregarded. No satisfactory explanation can be given why children with enlarged thymus glands sometimes die after so slight an injury as the prick of a hypodermatic needle. The cases of sudden death that have followed the injection of antitoxin are no more frequent than they are after such trifling injuries in subjects of the lymphatic diathesis. This fact, however, has to be accepted: The untoward symptoms appear as readily after small as after large doses. Severe cases require larger doses, but in any event a mild or severe case requires an increased dosage in proportion to the duration of the infection. Holt's working rule is that on the second day the dose should be twice that of the first for an equally severe condition, and on the third, three times as great. It is theoretically and probably practically better to give the amount which is considered necessary to cure the infection at one initial dose rather than to give small quantities at intervals. For immunizing a child under two years, except the very young, the proper dose is 500 units, and for a child over two years, adults included, 1,000 units. A mild, early attack in a child less than two years of age readily yields to 2,500 to 4,000 units, often to less, but the larger dose is safer. In an older child such an attack would indicate from 5,000 to 6,000 units. A young child with a severe form of the disease, if seen early in the attack, should be given from 5,000 to 6,000 units, the older child and the adult from 10,000 to 15,000 units. Cases, when seen late, require proportionately larger doses. Cases with primary laryngeal involvement require doses of from 7,000 to 10,000 units for the young child, and from 15,000 to 25,000 for the older child and adult. Pneumonia developing early or in cases coming under observation late, should receive very large amounts of antitoxin, from 25,000 to 50,000 units. Pneumonia developing after antitoxin has been given and being due to various microorganisms, cannot be influenced by the specific serum of diphtheria.—*Archives of Pediatrics.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 19, 1906:

SMALLPOX—UNITED STATES.

		CASES	DEATHS
Georgia, Chatham County	Oct. 10	2	..
Illinois, Moline	Sept. 23–30	2	..
Indiana, South Bend	Sept. 29–Oct. 6	1	..
Missouri, St. Joseph	Oct. 2–9	1	..
Tennessee, Knoxville	Sept. 29–Oct. 6	1	..
Texas, Houston	Sept. 29–Oct. 6	1	Imported
Wisconsin, Appleton	Sept. 29–Oct. 13	3	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Aug. 29–Sept. 21	1	..
Brazil, Bahia	Aug. 25–Sept. 15	9	..
Rio de Janeiro	Sept. 2–15	3	..W
Chile, Antofagasta	Aug. 14–Sept. 8	55	15
Coquimbo	Aug. 11–31	65	5
Iquique	Aug. 23–Sept. 8	..	Present
Ecuador, Guayquil	Sept. 1–15	..	19
Great Britain, Bradford	Aug. 25–Sept. 18	2	..
India, Bombay	Sept. 4–11	..	1
Calcutta	Sept. 1–8	..	1
Karachi	Aug. 26–Sept. 2	4	..
Madras	Aug. 25–Sept. 7	..	3
Rangoon	Aug. 18–25	..	2
Italy, General	Sept. 21–27	3	..
Nicaragua	Sept. 27–Oct. 4	1	..
Russia, Moscow	Sept. 8–15	6	..
Odessa	Sept. 8–22	2	..
St. Petersburg	Sept. 1–8	1	..
Spain, Barcelona	Sept. 20–30	..	11
Turkey, Constantinople	Sept. 8–16	..	1

YELLOW FEVER.

Cuba, Guines	Oct. 13	1	1
Habana	Oct. 10–16	10	1
Santa Clara Province	Oct. 11–13	2	..
Ecuador, Guayaquil	Sept. 1–15	..	2
Mexico, Merida	Sept. 23–29	4	4
Tustepec	Sept. 23–29	1	..
Veracruz	Sept. 23–29	..	1

CHOLERA—INSULAR.

Philippine Islands, Manila	Aug. 18–Sept. 1	58	48
Provinces	Aug. 18–Sept. 1	639	490

CHOLERA.

China, Fuchau	Aug. 10	..	Present
India, Bombay	Aug. 28–Sept 18	..	161
Calcutta	Aug. 25–Sept. 8	..	15
Rangoon	Aug. 18–Sept. 8	..	11

PLAGUE.

Australia, Sidney	July 22–28	1	..
Brazil, Bahia	Aug. 25–Sept. 1	1	1
Campos	Sept. 10	1	..
Rio de Janeiro	Sept. 2–15	16	3
China, Fuchau	Aug. 10–Sept. 10	..	Present
Hong Kong	Aug. 11–18	3	2
India, General	Aug. 25–Sept. 1	3,503	2,523
Bombay	Aug. 28–Sept. 18	..	82
Calcutta	Aug. 25–Sept. 8	..	19
Karachi	Aug. 26–Sept. 2	6	4
Rangoon	Aug. 18–Sept. 8	..	188
Japan, Formosa	Aug. 21–31	1	4
Peru, Lima	Sept. 1–12	4	..
Paita	Sept. 1–8	1	1

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Original Articles.

THE *X*-RAY IN THE STUDY OF CONGENITAL MALFORMATIONS

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It would be difficult to estimate the value of the *x*-ray as a means of diagnosis. Particularly does this apply to bone injuries, and in congenital malformations it is the only sure means of making an exact anatomical diagnosis. Successful correction is, of course, dependent upon a correct diagnosis.

The most frequent congenital malformation of the upper extremity is that of polydactylism. Annandale has classified these deformities as follows: "(1) A deficient organ loosely attached by a narrow pedicle to the hand (or to another digit). (2) A more or less developed organ, free at its extremity and articulating with the head or side of a metacarpal or phalangeal bone. (3) A fully developed separate digit. (4) A digit intimately united along its whole length, with another digit, and having either an additional metacarpal bone of its own, or articulating with the head of one which is common to it and another digit."

This classification must be extended. The cases to which I will refer cannot be classified under any of these divisions.

While investigating the ossification of the bones of the hand the following cases came under my observation:

Case I.—F. S., male, aged thirteen years, eleven months, and eight days, the fourth child of his parents. The supernumerary digit is between the thumb and the index finger, partaking of the nature of both. It is articulated with the metacarpal bone of the thumb, but the phalanges are those of a finger, resembling the other phalanges in every respect but one, viz., the second phalanx has a distal, as well as a proximal epiphysis. This is the only instance I have ever seen in which there was an epiphysis at the distal extremity of a phalanx.

The metacarpal bone of the thumb differs in the two hands. In the right hand this bone has developed from not less than five points of ossification. The shaft is pronged, the division extending to near the base, where it is fusing. Each section of the base has an epiphysis. The heads of the bone are widely separated. The extra head has an epiphysis. The head belonging to the true thumb may have had an epiphysis, but if so it has united with the shaft. In the left hand the metacarpal bone of the thumb has a single shaft with the distal extremity pronged. This bone has been developed from three centers of ossification, possibly four. The usual proximal epiphysis is present. The inner head, with which the extra digit is articulated is provided with an epiphysis. It is possible there was an epiphysis to the external head; if so it has united with the shaft. It will be seen that asymmetry exists only as regards the metacarpal bones of the thumb, and here we see an attempt upon the part of nature to preserve symmetry, viz., the inner head of each metacarpal bone has an epiphysis and the outer head in each instance is apparently without one.

A comparison of the two hands (Figs. 1 and 2) will show that in every other respect bilateral symmetry is perfect.

The supernumerary digit has the phalanges of a finger. There are three rows, all resembling the phalanges of the other fingers except the second, which has an epiphysis at the distal as well as the usual epiphysis at the proximal extremity. This feature is bilaterally symmetrical, *i. e.* the same condition is found in each hand. In other respects the hands are not unusual. The bones of the carpus and the other bones of the metacarpus and phalanges are developing as usual and are bilaterally symmetrical. Macroscopically the hands are normal, with the exception of the thumb. Abduction and adduction of the thumb and extra digit are synchronous, but limited. Flexion and extension are about the same in each and are synchronous. When I held either one, I could feel the tension of the tendon in the other. I think the extra digit has an extension of the flexor longus pollicis and of the extensor longus pollicis. When I first examined these hands the deformity seemed so great I thought surgical interference was warranted and a correction should be made at all hazards. But after watching the boy at work with a saw and hammer, and the deft manner in which he used a pencil, making good use of both the thumb and the extra digit, I came to the conclusion it would perhaps be best to let well enough alone. For cosmetic purposes there is no question but that the hands could be made to look almost normal. For purposes of utility I am inclined to think that surgical interference is not justifiable.

Case II.—This child is a sister of the one just referred to; A. S., aged eleven years and two days; is the fifth child of her parents. The supernumerary digit is between the thumb and the index finger, partaking of the nature of both. The metacarpal bone resembles those of the fingers, but is devoid of the distal epiphysis. The first phalanx resembles that of the thumb. The second phalanx is abortive, while the ungual phalanx, as regards especially the epiphyses, is that of a finger. All of the rest of the hand is normal. The bones of the carpus and the other bones of

the metacarpus and the phalanges are developing in the usual way.

Notwithstanding this is a case of congenital malformation, bilateral symmetry is absolute (see Figs. 3 and 4). Note the slender phalanges of the thumbs; the crooked distal extremity of the first phalanx of the supernumerary digit; the abortive second phalanx, and the ungual phalanx with the epiphysis; in each hand they are as much alike as any two objects of their kind could be. Bilateral symmetry is to be expected in normal hands. I have seen over and over again that, no matter what the deviation or variation from the usual ossification, the same condition will be found in each hand.

Upon the examination of these hands with the eye, and by palpation, one would think the child had an extra thumb on each hand. Manipulation at the present time reveals which is the supernumerary digit. She has very good abduction, adduction, flexions, and extension of the thumb. The extra digit can only be flexed and extended synchronously with the thumb. When the thumb is held the girl cannot flex the extra digit. On holding the extra digit one can feel the tension of the flexor tendon on contraction of the flexor longus pollicis.

The thumbs are not as large as they should be. I think they would develop if the extra digit were removed. I have urged the father to have the girl's hand corrected, but the parents are ignorant and superstitious, looking upon these malformations as a curse, and I am doubtful if anything will be done until she is old enough to demand it.

The family history, as far as I am able to obtain it, is as follows: The father is living; hands normal, and with no history of malformation in any branch of his family. His mother (grandmother of children) is living, and gave me the history as far as she knew. The mother of the children has been dead for ten years. The father and the grandmother both state that the mother had *"stiff"* thumbs, that is the metacarpo-phalangeal and the phalangeal joints were stiff in each thumb. So far as they knew, the thumbs presented a normal appearance externally. The mother had several brothers and sisters. All had normal hands. None of these live in Lexington, and I could not corroborate any of this except that pertaining to the father and grandmother. There were five children born to these parents. The first three died in infancy. All were polydactylous. As expressed by the father and grandmother, all had an extra thumb, and in infancy they all looked alike. The abnormality was confined to the hands.

I also talked with the physician, Dr. G., who was in attendance at the birth of these children, who said that he had insisted on cutting off the supernumerary digit while the children were quite young and removal would be easily accomplished. I asked him which he considered the supernumerary, and he said it was the outside one that he would have removed. This would have been a very natural mistake. At birth the digits were quite small. There being two thumbs, the outside one would have ben sacrificed, and with disastrous consequences, for the hands of both children would probably have been ruined. Undoubtedly this would have been the case with the girl, in which the outside digit has no carpo-metacarpal articulation. We could not blame the surgeon at that time, as he did not have the use of the *x*-ray with which to make a diagnosis.

I have been interested in the study of these hands more from a biological than from a surgical standpoint. Here is a question of heredity.

Are these morphological conditions transmitted by the father or through the mother? May it not be a blend, or could it be a mutation? and what is the primal origin of these deviations from the

Fig. 1.—Polydactylism; case 1, right hand.

Fig. 2.—Polydactylism; case 1, left hand.

normal? Castle says:* "Every breeder of animals is familiar with the complexity of hereditary processes. He knows that characters of the most varied sort are inherited. These relate not only to general size and proportion, but also to the structure of the individual parts; and not merely to structural, but to functional peculiarities as well. Thus in certain races or strains of animals we find inherited great fecundity, or early maturity, or ability to put on fat or to produce abundant milk; in other cases speed, keen scent, fierce or gentle disposition, and numberless other characteristics are plainly inherited. Very rarely are two heritable traits necessarily associated. The cow with a good flow of milk may or may not be gentle; the keen-scented dog may or may not be speedy. Accordingly we must conclude that different hereditary characters are inherited independently of one another and are probably represented by different structural elements in the sexual element or germ. We know, further, that the laws of transmission of different characters are different, so that we cannot estimate the force of heredity in the lump, but must fix our attention on one character at a time if we wish to analyze the complete processes in operation."

Burbank says:† "In my work with plants and flowers I introduce color here, shape there, size or perfume, according to the product desired. There is not a single desirable attribute which, lacking in a plant, may not be bred into it. Choose what improvement you wish in a flower, a fruit, or a tree, and by crossing, selection, cultivation, and persistence you can fix these desirable traits irrevocably. In the course of many years of investigation into the plant life of the world, creating new forms, modifying old ones, adapting others to new conditions, and blending still others, I have constantly been impressed with the similarity between the organization and development of plants and human life."

This is not foreign to the subject we have under consideration. In my investigation in bone development I have been enabled to determine that bone deviations or variations are heritable. To illustrate this, I find that the chronological ossification of the bones of the carpus may present a number of variations. No matter what this may be, the same condition will be present in the hands of *all* of the brothers and sisters. In rare instances there is a proximal epiphysis to the second metacarpal bone. In something over two hundrd families I have found it present in six. When this epiphysis is present it will make its appearance early in the second year and will unite with the shaft between the eighth and tenth years, although the union with the shaft may be delayed several years later. The presence of this epiphysis is a *family characteristic*. It is far more of a family characteristic than external characteristic, such as resemblance in features, etc., in that it is *always* present and will be found in the hands of *all* of the brothers and sisters. The extent to which this is transmitted and other details are to be worked out in the future.

FIG. 3.—Polydactylism; case 2, right hand.

FIG. 4.—Polydactylism; case 2, left hand.

The starting point for congenital malformations evidently differs with the character of the deformity. When the condition is unilateral we can understand that the variation or deviation could be purely embryonic, occurring in any of

Popular Science Monthly, July 1, 1906.
†*Century*, May, 1906.

the three stages, blastemal, chondrogenous, or osseogenous (?); consequently it is not necessarily heritable.

When the malformation is bilateral, although it may not be symmetrical, it is evidently a heritable character originating in the germ cell of the parents, one or both. We know that the chromosomes of the male pronucleus and the female pronucleus are equally distributed by the mitotic process of fertilization; each contains heritable characteristics. It is an interesting but extremely difficult question to determine the sources and laws which govern these morphological deviations, be they observed in bone or in other tissues.

THE IMPORTANCE OF THE TREATMENT OF CHRONIC OTORRHEA.*

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Someone has said that the individual with a chronic otorrhea is always standing on the brink of a volcano, and without doubt such a statement graphically represents the status of the patient with this affection, as with but little or no warning, various highly important structures may be consecutively infected and a fatal issue rapidly supervene. The importance of the treatment of this condition is therefore a most vital one, and it is desired here to emphasize somewhat in detail the various forms in which otorrhea may be a serious menace to the life of the individual.

Gowers has shown that in 173 cases of cerebral abscess, 102 were the direct result of suppuration of the middle ear, and the Registrar-General of England reports that there are from 300 to 400 deaths reported annually from middle-ear disease, without taking into consideration the probably larger number reported as dying from other causes but which are primarily of aural origin. These statistics certainly manifest one phase of the necessity for the careful treatment of chronic suppurative otitis media in every case, however mild the symptoms may be. The other aspect for insisting on such treatment is the development of deafmutism in the very young or varying grades of impairment of hearing in those of more mature years; the constant danger to life from the presence of a suppurative focus in close proximity to vital organs; and the impairment of the general health so commonly present in the great majority of such cases. On the other hand in cases of otorrhea which have been properly cared for and treated upon sound antiseptic, surgical principles, a fatal termination is most unusual, and the hearing is conserved, while no deleterious effects are observed upon the general health, inasmuch as the suppurating focus has been entirely eliminated.

As the mastoid cells and tympanic cavity are in direct communication by means of the aditus ad antrum, suppurative processes in the latter chamber are practically always accompanied with more or less deviations from the normal of the mucous membrane lining the numerous and complicated cells of the former, and in addition to this the various portions of the temporal bone and especially those portions commonly involved in the usual suppurative process are brought into close relationship, not only one with the other, but also with the interior of the cranial cavity by means of the small venous channels which traverse the bone in various directions. By these means it can readily be seen, therefore, that the spread of the pus collection in the middle ear is greatly favored, and, further than this, greater or lesser degrees of carious necrosis are invariably present in every long-standing case, so that dangerous areas may thus be involved.

Another fact which is of great importance in the development of some of the most serious complications of otorrhea, those due to infection of tissues within the interior of the cranium, is the change which takes place in the mastoid cortex after long-continued middle-ear suppuration, whereby this portion of the temporal bone is greatly augmented in thickness and density so that the tendency of any extension of purulent process in the tympanic cavity is in the direction of least resistance, which in such cases is inward rather than outward, in the direction of the brain and in the larger sinuses in relation with it, through the thin and often partially deficient osseous tissue of the inner mastoid wall.

Destruction of the mastoid interior is by far the most frequent result of untreated otorrhea, and, while this in itself necessitates extensive operation, it not rarely implies other and even more serious complications. As a not uncommon result, therefore, of the untreated otorrhea, phlebitis and thrombosis of the smaller veins in relation with the diseased parts is produced and either the large venous channels, such as the sigmoid sinus or consecutively the jugular vein lower down in the neck, becomes the seat of purulent thrombosis. As a further result of this condition the patient suffers from the absorption of the toxic products rapidly being generated in these parts, and in addition to the original suppurating ear, general symptoms of a septicemic nature make their ap pearance, or should the process be of a still higher grade, pyemia ensues, with the development of metastatic abscesses in the pulmonary areas, joints, or elsewhere, if the patient survives a sufficient length of time; or the septic symptoms are more profound; and what at first was a small focus of pus in the tympanic cavity has now eventuated into a fatal issue. In this same manner a perisinus abscess may also form in connection with the sinus phlebitis, or the pus may follow a downward course and require additional incision into the cervical tissues for its removal.

As indicating the further importance of treat ing otorrhea, the risk that the brain tissue, its meningeal coverings, and the blood-vessels in relation to it undergo is not by any means a slight one, as has in part been pointed out. Localized areas of meningitis in direct relation with the upper and inner walls of the temporal bone are not infrequently brought about by the direct extension of the purulent process in the middle ear, either through erosion of intervening osseous tissue or by means of clefts, the result of incomplete closure of bony areas especially in the roof of the attic, and through which the dura mater is brought into immediate contact with the mucous membrane lining of the cavum tympani. It is quite probable that in a considerable number of cases of chronic otorrhea small subacute areas of inflammation of the meninges are more or less

*Presented at a meeting of the Harlem Medical Association, May 2, 1906.

frequently present, and do not attract attention until the infection from the middle ear has been increased or the patient presents a diminished resistance, when recognizable meningeal symptoms become prominent. Serous meningitis, although rare, may be brought about by the same cause, and more frequently a basal or diffuse purulent inflammation of the brain envelopes takes place, with all its serious consequences.

When the area of meningeal infection from the otorrhea is limited in extent and a protective wall of adhesions is formed around it, an epidural abscess develops in close relationship with the point of infection from the middle ear, and usually in relation with the temporal lobe of the cerebrum. Even more serious purulent collections may develop, however, and a subdural abscess form, or the pus may be entirely isolated in various parts of the cerebrum or cerebellum. More than one brain abscess may be present following an apparently harmless otorrhea, and the diagnostic features thus become correspondingly confusing, while operation becomes futile on account of the great difficulty or impossibility of recognizing the presence of the multiple pus collection.

As before mentioned, caries and necrosis of the ossicles or temporal bone is present in the greater majority of cases of chronic aural suppuration which have not received proper care, and in more severe types the destruction of tissue may be most extensive, the mere presence of a long-continued untreated otorrhea, being in itself strongly suggestive of caries of a part of the ossicular chain, or of the adjacent walls of the tympanic cavity, especially of the attical regions. Should the carious process involve the inner tympanic wall, purulent inflammation of the labyrinth and other portions of the inner ear will ensue, with, in some cases, complete exfoliation of the cochlea; if the roof of the attic be involved, an intracranial abscess in this region is apt to follow, while posteriorly the mastoid region suffers, and rarely when the floor of the tympanum is involved in such a process the large vessels may be opened spontaneously with rapid and fatal hemorrhage; while not uncommonly the medial plate of the mastoid becomes carious and the pus escapes into the soft tissues of the neck.

Practically always avoidable by early treatment of an otorrhea, is the development of cholesteatoma. Its destructive results, by mechanically producing purulent retention and aiding in the destruction of osseous tissue, are essentially phases of a neglected suppurative otitis. When this condition of excessive epithelial proliferation has once been inaugurated, it adds considerably to the difficulties of treatment, and often is the determining point in rendering operation here a failure when the conditions otherwise would indicate a successful issue.

Owing to the course of the facial nerve being in close proximity to the tympanic cavity and the fact that its bony covering over the horizontal portion of its course, often presents dehiscences so that the nerve is in part exposed, paralysis of the facial muscles supplied by it may be produced by the neglected otorrhea, and unlike the paralysis occurring in acute otitis, it is apt to assume a more serious aspect and presents a greater degree of permanency. It may also result from destruction of a portion of the facial canal by the carious processes previously described, and in these cases the abolition or reduction of the function of the nerve is the result of pressure upon its trunk from inflammatory products, or actual inflammation of its structure.

In addition to definite forms of septic intoxication, the general health of the individual with an untreated otorrhea is usually below par, his tissue resistance is decreased, and the dangers of such a condition being uncared for is well exampled by the action of insurance companies in considering the subject of otorrhea a dangerous risk, although the applicant may otherwise not show any evidence of disease.

As regards the hearing, aural suppuration is the most frequent factor in the production of various grades of deafness, and in practically all cases of untreated otorrhea, some degree of diminution of auditory acuity will be found present. While other causes than otorrhea are most active in the production of deaf-mutism, yet suppurative ear diseases play a most important part in a considerable number of such cases, and one cannot be far wrong in believing that in this particular class, the proper treatment of the suppurating ear at an early stage, would have enabled such individuals to have retained their hearing power, and consequently their loss of speech would have been unnecessary. When the tympanic cavity is still suppurating, the impairment of hearing is the result of obstruction to the passage of sound waves, from the purulent material and débris present and also from the actual destruction of soft and osseous tissues, while in those cases which have ceased discharging after a long period of time, the hearing is lessened by the results of the osseous destruction, and in addition, by the vicious cicatrization which has taken place, binding down the remnants of the ossicles, occluding the oval window, and producing irregular cicatricial bands of the greatly altered mucous lining of the tympanic cavity.

From the study of the usual course of otorrhea, it will be found in the untreated cases, that a definite morbid course is followed, leading to the disorganization and destruction previously described. Commencing with the usual and well-known inflammatory changes of the mucosa of the tympanic cavity, with swelling and infiltration, the periostium is involved and then at a later date the bone undergoes carious alteration, so that in every case of any standing, well-known morbid phenomena, all tending to destruction of tissue, may be found. Unlike abscess formation in other portions of the body, but similar to that in osseous cavities, the otorrhea does not tend towards resolution and is not self-limited. It does not tend towards resolution, on account of the obstacles to free drainage, which every untreated case presents on account of the nature of the local infective process and, also, as the result of the inherent tendency of purulent inflammations of the middle ear to successfully involve poorly nourished parts of the bony enclosure. For the same reasons, otorrhea is not self-limited, and, especially is self-limitation restricted as the result of the anatomical conformation of the tympanic cavity with its numerous osseous recesses, reduplications of delicate mucous membrane, and direct connections with the complicated cell structure of the mastoid process. Both these latter aspects of this subject are also enhanced by the nature of the microorganismal infection in the particular case, as a definite bacterium or rather group of bacteria, are usually

found bearing a close relationship to the amount of destruction of tissue and progress and rate of the extension of the otorrhea.

Unfortunately, many cases of otorrhea thus neglected, destroy considerable areas of highly important structures with but little or no symptoms other than a slight discharge, and at times even this may be absent, so that this feature in itself forms one of the strongest arguments in presenting the necessity for the careful treatment of every case of purulent otorrhea even in the absence of any of the symptoms indicating serious trouble. And finally, in contradistinction to the gravity of the case when untreated, is its benign character when properly cared for and the removal from the patient of the ever-present danger when there is suppuration of the middle ear and its adnexa.

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THE SUPPRESSION OF TUBERCULOSIS.

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In a general campaign against any communicable infectious disease two elements are concerned, the invading parasites and the invaded host. Consequently, in such campaigns two general lines of effort are available: first, to destroy or prevent access of the causative germs; second, to increase the personal resistance of the menaced individuals so as to render the parasites impotent to produce morbid effects. The measures that will be effective vary according to the conditions presented by each particular disease; in some cases exclusion of the parasites, in others increase of personal resistance, in still others a combination of both methods being indicated.

Yellow fever is an example of a disease in which destruction or exclusion of the germs, by destruction of the mosquitos carrying them, has proven feasible and signally successful in eradicating the disease. Control and purification of water supply accomplish much in reducing typhoid fever. Scarlet fever has been materially reduced by the institution of quarantine measures. With other diseases, however, quarantine seems incapable of making any great impression on the aggregate number of cases, either because the disease is spread during the incipient period before recognition of its contagious character is possible, or because cases occur so mild as to be unrecognizable and yet are capable of spreading the infection. Of such character are measles and whooping-cough; even with diphtheria the results of rigid quarantine have been found disappointing.

Of the second method of eradicating disease by the increasing of personal resistance, a conspicuous example is afforded in the case of vaccination against smallpox; if we had to rely on quarantine alone the prevalence of this disease would probably be little affected, and it would probably be as common as measles is; but vaccination practically eradicates it or reduces its consequence to that of a minor affection.

The applicability of these two general methods to the prevention of tuberculosis may now be considered. Fortunately, the increasing of personal resistance is a factor of high effectiveness against tuberculosis. Under present conditions tubercle baccili are ubiquitous, everybody is exposed to infection, and nearly every one at some period of life harbors a tuberculous nidus. Those of good nutrition and body vigor easily and effectually overcome the infection, and it is only in those permanently or temporarily lowered in condition that tuberculosis can gain a foothold and progress. As marked success in treatment of established cases results from raising the body nutrition and vigor, much more can be expected in prevention of the disease through similar lines of endeavor. There is a large promise of results in reducing tuberculosis by increasing personal resistance.

House and shop sanitation, and the improvement of housing and working conditions as especially needed among the poor, are of great importance to the accomplishment of this end. The providing of ample light and sunshine, plentiful supply of pure air and proper ventilation, suppression of dust, avoidance of overcrowding, proper heating, and cleanliness are essentials along this line. The difference in the incidence of tuberculosis between the country and the city shows what could be done if the environment of the urban populace could be approximated to rural conditions. An abundant supply of pure and nutritious food is another essential to the maintenance of the grade of body nutrition necessary for successful resistance to tuberculous invasion. The problem of the general reduction of tuberculosis is closely bound up with industrial and economic conditions, since upon these conditions the masses are dependent for the means to obtain an adequate food supply. The price of food is an important factor; an increase in food prices means that the man with a limited income not correspondingly increased can provide his family only with a proportionately diminished amount of food. It is not impossible that the general increase in the death rate from pulmonary tuberculosis that has been going on since 1902 may be partially due to the increased prices of food supplies prevailing. The recent combinations and schemes by which excessive prices for food have been maintained and huge fortunes accumulated by a few individuals have undoubtedly exacted a toll of human lives which must stand as a charge in the account against the extortionate monopolists. Cheapening of the food supply is, therefore, an element of importance in the warfare against tuberculosis.

Turning now to the methods looking to destruction or exclusion of the invading tubercle bacilli, the most radical measure possible would be the compulsory quarantine, isolation, or segregation in colonies of the afflicted individuals, as is done in the case of leprosy, a disease similar to and no more contagious or worse in character than tuberculosis. This is a plan not as yet seriously contemplated for tuberculosis. There is no certainty that its adoption would abolish the disease. Tubercle bacilli emanate from and are scattered by animals and birds as well as man. The quarantine for a brief period of a limited number of individuals with acute contagious diseases involves no great hardship; but the permanent segregation of a considerable proportion of the community, the sundering of families, and the breakup of businesses, as would be necessitated in general isolation of consumptives, would be a matter of profound social consequence, to be determined upon not by physicians, health officials, or philanthropists, but only by the general public, after careful consideration of the situation and judgment whether the prospective benefits were worth the price that would have to be paid.

The maintenance of ample sanatoriums for the shelter and care of tuberculous patients in all stages of the disease accomplishes results along the line of quarantine, since all patients collected in such institutions are thereby segregated from the community and a measure of protection to the public is afforded corresponding to the number of cases thus voluntarily isolated.

Every tuberculous subject going about in the community and pursuing his affairs and avocation necessarily to a certain degree constitutes a public menace and a center for contagion. Measures short of complete and general segregation must therefore proportionately lack in effectiveness. Certain measures of this imperfect character are, however, available and advisable.

One such is the disinfection of apartments occupied by tuberculous individuals, especially after being vacated by the latter. This is in common justice due the succeeding occupants. It is not shown that any large proportion of cases is acquired from rooms previously inhabited by consumptives, and no great effect on the general incidence of tuberculosis is, perhaps, to be expected from this measure. Segregation of tuberculous inmates of hospitals and other public institutions may obviate possible contraction of the disease by the other inmates and patients, who, in their weakened condition, are in a receptive state for tuberculous infection.

Proper care and disposal of the sputa in order to prevent dissemination of the bacilli is obviously a measure that should be rigidly and universally practised and enforced. The greatest expectations have been entertained as to the results to be obtained from this measure, and many put the utmost confidence in its power to effect the practical eradication of tuberculosis. Yet the most plausible theories often fail to work out when put in practice, and in spite of the increasing application and understanding of this measure by the general public, the general death rates from pulmonary tuberculosis have in the past few years remained stationary and even increased.

Control of milk and food supply to prevent the use of infected milk and meat is another means of preventing access of the bacilli.

At the present time a great deal of activity is being devoted to a popular campaign of education as to the means of treating and preventing tuberculosis, with the idea that general knowledge of the matter will result in better prophylaxis and therapy and a lessening of the disease. The advantages to be obtained are not unmixed with unfortunate results. The first effect of the staring announcement, "Consumption is contagious," in the educational circulars is the development among the people of phthisiophobia and an unreasoning cowardice rather than a reasonable prudence. While the consumptive patient owes the public the duty of protecting it as far as possible, he himself is entitled to some consideration, and to be treated with aversion and shunned like an outcast adds greatly to his burden and may effectually bar his chances for recovery. Dismissed from his employment on account of the panicky objections of his associates, he loses the income that may be necessary to provide the means for overcoming the disease or to maintain the members of his family in good enough condition to enable them to resist its invasion. Excluded from boarding and lodging houses, he may be forced to resort to places of inferior accommodations when he needs the best he can get to aid in the struggle against the disease.

Recently the movement has become general in this country for the health offices of the various cities to engage in systematic efforts to limit the spread of tuberculosis on the basis of the registration of cases. The objects aimed at are laudable in the highest degree and could be objected to by no humane persons. Nevertheless, the movement has, with the fullest knowledge of the practical needs of the situation and the most conscientious motives, been opposed by respectable sections of the medical profession on the ground of ineffectiveness and of embodying unnecessary and mischievous features; and in spite of the fact that this opposition is flippantly criticised and denounced by oracular philanthropists, it is of sufficient consequence to deserve respect, and the question is still worthy of consideration.

Obviously, the mere registration of cases of tuberculosis in the health offices of itself accomplishes nothing; it is a subsidiary and auxiliary feature, a means to an end; and if that end can be as well gained in other ways, it may be a clumsy and useless means. Yet the idea of a (secret) list of consumptive patients in the health office has so fired the imagination of some enthusiasts that they have come to regard it as *per se* a powerful agency in the eradication of tuberculosis, and have formed an extravagant estimate of its value. Obviously, it is what registration leads to that is of importance, and the claim is made that registration of all the cases gives the health officials "control" of the situation and of the disease. We find that the measures taken and the "control" exercised by the health officials consist in, first (unless otherwise requested by the attending physician), the sending of circulars of information to the patients, with perhaps a visit once a year or thereabouts by a nurse or semiamateur inspector; and, second, the disinfection of apartments after death or removal therefrom of tuberculous patients (which requires a distinct system of notification). That the distribution of circulars—and that to patients under the personal care of practising physicians—constitutes "control" of tuberculosis is inane grandiloquence. The results to be expected from it (as is shown by actual trial) are trivial and insignificant; one might as well undertake to dig the Panama Canal with a teaspoon as expect to eradicate tuberculosis by such means.

The measures concerned in the registration system as generally practised, involving as they do a certain amount of espionage over patients and physicians, and interference with and supervision of private practitioners, are necessarily of a bureaucratic and paternalistic character. While individual prerogatives must give way before the general welfare and peculiar public exigencies, nevertheless, in a society organized on an individualistic basis, the centralization of power and the restriction of individual activities should be reduced to the minimum compatible with the accomplishment of the essential ends sought. Police ordinances regulating expectoration, obligatory disinfection of apartments occupied and vacated by tuberculous patients, supervision of milk and other food supplies, enforcement of proper house and shop sanitation, the care of indigent consumptive patients, the maintenance of sanatoriums for indigent and pay patients—all these are legitimate objects for state and municipal activity. With regard to self-supporting and well-to-do patients able to provide for their own care and under the treatment of their own physicians, the conditions are different.

Unless the practice of medicine is to be definitely and systematically put on a bureaucratic or socialistic basis, the supreme control in cases of this sort must be vested in the attending physician, and interference and invasion of his province by public officials is unwarranted. This supremacy is recognized by the registration laws as adopted in many cities. It is difficult to see any difference in practical effect between the system of compulsory registration of all cases of tuberculosis and permitting the health department to take action only in such cases as the attending physicians so designate, and a system of optional registration, in which the physicians report those cases in which they desire to obtain whatever aid or service the health office may be able to render. Precisely the same cases are brought under the action of the health department under both systems. Yet one system involves a bureaucratic element, to which, while not likely to prove any material burden, many physicians have felt an instinctive repugnance, and which could, if executed in a captious and autocratic way, become a means of unmerited harassment. If the two systems are alike in practical results, the compulsory and bureaucratic feature would seem to be unnecessary, and the agitators who denounce the optional system as utterly ineffective thereby record themselves as holding the belief that the secret list and the infliction of penalties (the only essential differences between the two systems) are not only real direct preventive agencies, but also the principal agencies by which they expect tuberculosis to be eradicated.

The statistical value of the data obtained through general registration is adduced as a point in favor of such registration. Such statistics would no doubt be of interest, but only in an academic way; in some respects they would be unreliable, and could add nothing to our practical knowledge of how to treat the cases. The acquisition of useless knowledge (even for the benefit of the altruistic dilettanti) would not seem to warrant the imposition of a system of penalties and bureaucratic machinery on the public and the profession for the sake of obtaining it.

A tendency to the assumption of paternalistic functions in municipal health offices is distinctly observable, especially in the cities of the largest size. This is evinced in various directions, among others in connection with tuberculosis in the free examination of sputum for all persons, regardless of their ability to pay. This is frank paternalism, of the same order as, and with no more justification than, would be the providing of public physicians to make free physical and clinical examinations of applicants apprehensive of possible tuberculosis. Free sputum examination (except for the poor) is not essential to the ends to be gained by registration measures, and is an invasion of a field properly belonging to private practising physicians. Precisely the same reasons which justify it would warrant the paternalization of the entire practice of medicine.

The final criterion of the efficacy of the registration and allied measures must rest on the results of actual trial. In nearly all the cities quoted as examples of the system, registration has been introduced too recently, or has not been executed with sufficient vigor, for any results yet to be accomplished; their experience is, therefore, valueless as evidence of its efficacy, and the claims of their officials as to its value have no foundation or weight. In only one or two cities has the registration system been given sufficient trial for its practical results to be determinable.

In New York City the system has been in operation since 1894, or twelve years, a period long enough for its utility to be tested. During that period there has been a marked decline in the death rate from pulmonary tuberculosis in that city, and this decline is claimed to have been due to the measures taken by the New York Department of Health. This claim has been iterated and reiterated as an evidence of what can be accomplished toward the eradication of tuberculosis by systematic municipal action. A critical examination of the results in New York will, therefore, show what may be expected from such action.

The results claimed in New York City from the efforts of the Department of Health are concisely set forth in the following words (Annual Report, New York Department of Health, 1902, pages 29-30), referring to the decrease in the death rate from tuberculosis, especially among children under fifteen years, since 1892:

"It [the decline in death rate] indicates in the most striking manner the unexpectedly successful results of the preventive measures adopted by the department in relation to this disease. . . . The education of consumptives and their families as to the careful disposition of expectoration, the renovation and disinfection of apartments occupied by consumptives, and the removal of many consumptives to properly equipped institutions have accomplished this result."

All the credit for the decline of tuberculosis is claimed, without reservation, for the Health Department. It stands to reason, however, that the thousands of practising physicians in New York City must have had some part—a great part—in the reduction of the tuberculosis death rate, through personal institution of efficient modes of treatment and sanitary preventive measures. The claim of the Health Department is, therefore, manifestly extravagant and excessive, and until the extent to which the efforts of the practising physicians may have contributed to the result can be determined, no estimate whatever can be formed of the efficacy of the measures taken by the municipal medical officers.

In the accompanying Table I. it will be seen that from 1881 to 1890 or 1895, prior to the introduction of the Health Department measures, there was a much larger decline of the tuberculosis death rate in New York City than has taken place since. Before it can be demonstrated what effect the Health Department measures have had, it must be shown that the causes that lowered the death rate prior to the introduction of those measures did not continue to operate to lower the rate after their introduction.

I.—Average Annual Number of Deaths (by Five-year Periods) from Pulmonary Tuberculosis per 100,000 of Population.

	New York City (Boroughs of Manhattan and the Bronx)	Buffalo
1881–1885.....	398	210
1886–1890.....	350	204
1891–1895.....	286	172
1896–1900.....	256	110
1901–1905.....	237	125

In the third place, as shown in Table II., the decline of the tuberculosis death rate in New York since the introduction of registration measures has simply been parallel to the decline in the

country at large and in other localities. In New York in 1900 the consumption death rate was 84 lower than in 1890 (or 24.7 per cent.); in the "registration area" of the United States from 1890 to 1900 the decline was 64, or 26.1 per cent. As compared even with the District of Columbia, which is held up as the horrible example of municipal and professional remissness in this matter, the decline in the death rate in the District, without registration, has been practically the same as that in New York since registration was instituted there.

From these considerations it appears that not only is the claim of large results from municipal measures in New York not substantiated by a critical analysis, but it is not shown that those measures have made any material impression whatever on the death rate from pulmonary tuberculosis in that city.

II.—Deaths from Pulmonary Tuberculosis per 100,000 of Population

Cal. Year	Greater New York	N. Y. City (Bor's of Man'tan & Bronx)	Buffalo	District of Col'bia	U. S. Registration Area
1890.....	...	341	192	....	†245
1891.....	...	311	215	....	....
1892.....	...	295	192	....	....
1893.....	...	291	158	301	....
1894.....	...	*257	159	289	....
1895.....	...	278	135	284	....
1896.....	...	262	118	306	....
1897.....	...	*250	*118	295	....
1898.....	*225	251	115	290	....
1899.....	226	260	124	267	....
1900.....	237	257	120	279	181
1901.....	230	250	129	271	175
1902.....	208	229	121	225	164
1903.....	212	233	124	240	166
1904.....	218	237	129	262	178
1905.....	212	238	121	256	....
1893-1895.	...	275	151	291	....
1896-1900.	...	256	119	287	....
1901-1905.	216	237	125	253	....
Decline, 1893-'95 to 1901-'05...	...	38	26	38	....

*Registration of tuberculosis cases instituted.
†Census year.

In the city of Buffalo registration was instituted in 1897; so far from decreasing, the consumption death rate in that city has been higher ever since.

Those enthusiasts who have the idea that it will be comparatively easy to stamp out tuberculosis have no conception of the enormous difficulty and magnitude of the task. It does not follow (as often assumed) that because a disease is communicable it is therefore easily preventable. Tuberculosis is of the dimensions of a mighty natural force, an example of the indifference of nature to individuals when the benefit of the race is concerned. It is a disease preeminently of the weak and inferior, and through it the weaklings and unfit are eliminated. Many of those saved from tuberculosis fall ready prey to other diseases, especially pneumonia; and of recent years, coincident with the decrease of deaths from consumption, there has been a large corresponding increase of mortality from pneumonia. The lessening of the consumption death rate is, therefore, largely an illusory and not a clear gain, many of those saved from it dying of other causes.

Contemplation of a limited field only may lead to erroneous conclusions and post-hoc-ergo-propter-hoc fallacies as to the preventability of tuberculosis. On comparing different places we find great diversity in the death rates from the disease; thus, Buffalo has a rate far below the average, while New York and Washington have rates far above. This diversity is obviously due to differences in local conditions, and is not necessarily a matter of either credit or blame for the local medical profession. On comparing the statistics of different cities and States for a period of years, a certain annual parallelism is shown to exist in the mortality from tuberculosis; this indicates that general conditions (meteorological, economic, education of the profession and the public) operate as well as local (and entirely apart from local methods) to influence the incidence and mortality of the disease.

Since the discovery of the tubercle bacillus twenty-five years ago, there has been an enormous decrease in the mortality from tuberculosis; this has apparently been due to the application by the medical profession of knowledge of the cause and effective methods of treatment of the disease gained from laboratory investigation and clinical observation. It is the rank and file of the medical profession that is necessarily most concerned with the tuberculosis problem and the actual detection and management of the cases. They have the practical knowledge and training to meet the requirements of the situation. The philanthropic motives and public spirit of the profession are beyond impeachment. The efficiency of their methods is shown by the results gained in the past. Nevertheless, there exists a strong tendency in certain quarters to ignore and depreciate their position in the matter, to withhold or give to others the credit due them, and to exalt amateur and paternalistic methods.

None are more earnestly desirous of the suppression of tuberculosis than are the medical profession; none are laboring more effectively to this end. The help is needed of all who can assist in the movement. Nothing, however, is to be gained by hysteria, blind following of fashion, self-seeking officialism, or unpractical amateurism, or by any other than sane, rational, and scientific effort.

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REMARKS ON ENUCLEATION; SOME UNCALLED-FOR DISFIGURING OPERATIONS RESULTING FROM FAILURE TO RECOGNIZE ACCESSORY SINUS DISEASE.*

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The ocular symptoms resulting from an affection of the accessory sinuses of the nose have attracted a great deal of attention during the past few years, and various theories have been announced to explain their pathogenesis. According to Ziem they are manifestations of a passive orbital hyperemia from a faulty oxygenation of the blood resulting from a hindered nasal respiration—a nasal stenosis from edema, polypi, puru-

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lent secretion, etc. As this hypothesis fails to account for a circulatory disturbance limited to the ocular region as well as the instances in which there is no "hindered nasal respiration"—the nostril presenting a practically normal appearance as it does in some cases—the writer has modified the above theory and considers the stasis in the periorbital circulation to be the result of a vasodilatation resulting from an irritation of the sympathetic by the secretion pent up in a closed sinus. This theory is based on Gurwitch's demonstration, that the vasasupraorbotalia, frontalia, ethmoidalia, and ophthalmofacialia carry the greater portion of the venous blood from the nostril and its sinuses into the ophthalmic vein, and the fact, as shown by Zuckerkandl, that the upper walls of the various cavities, situated at the base of the brain, are pierced by minute openings through which the lymph and blood-vessels pass, thus affording a direct communication between the circulation in these cavities and that of the meninges, some of the blood-vessels entering the convolutions of the brain. An intracranial circulatory disturbance results in cerebral symptoms, as vertigo (one of the early and most constant phenomena of sinusitis), epileptoid attacks or unconsciousness (Lichtwitz, Engelmann, Mayer, and the writer), or it may produce meningitis or abscess of the brain. A stasis appearing in the orbital circulation may cause an edema of the lids, or an exudate behind the globe with resultant protrusion, or it may show itself in any of the eye tissues. If it appears in the cornea, for instance, there may follow an elevation of the epithelium, abrasion, infection, and corneal abscess, with perforation, and consequent enucleation. Should a severe intraocular involvement take place, and later the fellow eye show inflammatory symptoms, resulting from a sinusitis of the corresponding side, the condition could well be mistaken for one of sympathetic ophthalmia. Such an instance with enucleation, the only one in the literature, has been reported by Ziem, which he says reads like a "fairy tale."

In a man, twenty years old, whose left eye had been enucleated and who complained of a continual left conjunctivitis, Ziem found the following condition in the right eye: concentric contraction of the visual field, marked hyperemia of the papilla, reduced accommodation range and vision 5-12. A few years before there had been headache, heavy dull feeling and pain about the left orbit, with frequent flashes of light and colors noticed in the left eye. The condition varied more or less until four years later, when the patient suffered from an intense left frontal pain, etc., during which he was treated in a hospital for "inflammation of the brain." Several physicians, however, questioned the above diagnosis and attributed the condition to some affection of the left eye, as "it often turned in." Accordingly the patient was examined in an eye clinic, where the reduced vision, quantitative light perception, was attributed to the internal strabismus, and a tenotomy was performed. Later the patient was treated for two weeks in another eye clinic, and the left eye was enucleated "to save the second eye," which "appears to have been done," as was stated, on the patient's clinical card. As the patient had a nasal speech and breathed through his mouth, Ziem at once examined the nose, which was found to be completely occluded by a congestion and an abundant purulent secretion. This was subjected to daily treatment, but, as the condition in the right eye became worse (the field still further contracted, the accommodation range more reduced, the pupil large and sluggish), the antrum was opened, which showed a chronic empyema. Following treatment the visual field improved and the accommodation range and vision were about normal. Ziem again saw the patient, after a recurrent attack during which an iridectomy had been advised elsewhere, the ocular symptoms probably being taken for glaucoma.

In some instances the intraocular circulatory disturbance may not show such serious results, but may manifest itself only by photophobia, reduction of the accommodation range with consequent asthenopia, etc. This last-named condition, given the presence of a foreign body in the other eye, can mimic perfectly the irritative stage of a sympathetic ophthalmia, as in the following personal observation. On July 26, 1904, the writer was consulted by Mr. S., aged forty-four years, who complained of headache, asthenopia, and intense continued photophobia. About four years before, after a severe cold following exposure, he suffered with vertigo, dull headache, left supraorbital pain, and the left eye troubled him; asthenopia, lacrimation, marked photophobia, and dimness of vision. He consulted an ophthalmologist, who, after careful examination under belladonna, diagnosed sympathetic ophthalmia, owing to the presence of a foreign body in the right eye which had been there fifteen years, and who advised the enucleation of the right eye, on account of and to relieve the symptoms of the left. Four other specialists, two in Louisville, were consulted, all of whom agreed in the above diagnosis and advised the same treatment, and finally the patient consented, although, according to his statement, the right eye had been absolutely quiet all this time, and still retained some, though very slight, vision. The patient said the removal of the right eye four years before failed to relieve the symptoms in the left. Examination showed the left lids somewhat red and swollen; conjunctiva slightly injected; media clear; pupil active though sluggish and contracting to but four mm. on throwing a light with a loup on to the retina; fundus normal; vision, with constant correction .75 ax. 90°, 15-20. Actual range of accommodation was not taken, but the statement of the patient of inability to do any close application indicated its involvement. On questioning the patient it was learned that his "headache" consisted of a nearly constant dull pain in the left supraorbital region, and this symptom, in connection with the frequent vertigo and the ocular phenomena, suggested a left frontal sinusitis. Pressure about the left frontal sinus showed sensitiveness; in the left nostril were found polypi and granulation tissue, bathed in a purulent secretion coming from behind the middle turbinate. An abundant secretion was obtained on syringing the frontal sinus, and on the following day the patient voluntarily reported marked relief from the vertigo and intense photophobia, and he said his rest had been much quieter than formerly. Two or three days' treatment resulted in a further improvement, the pupil responding normally to light, contracting to two mm. The immediate and marked relief of all the symptoms in this case demonstrates clearly that they were due directly to the secretion being partially suppressed in the frontal sinus and not to a "reflex irritation" from the presence of the nasal polypi, vegetations, and greatly swollen middle turbinate. The anterior end of the middle turbinate, polypi, etc., were removed and the treatment was continued. The patient reported relief from

the former severe symptoms, especially from the intense photophobia. At the end of a fortnight his constant glass was changed to + 1. D. Owing to the writer's absence the patient was not seen again until November, when the former symptoms were again present, though not so severe. Nasal polypi were removed; further surgical interference was advised, but refused. The patient was not seen again.

An instance of enucleation on account of panophthalmitis resulting from an affection of the nasal accessory sinuses was reported by Rollet. In a patient, three months after typhoid fever, intense periorbital pain, edema, protrusion and destruction of the eye from panophthalmitis for which Panas performed enucleation in 1896. As the orbital cavity still contained a purulent secretion some three months later, it was curetted by Gayet. "When I saw the patient he complained of a continuous purulent discharge from the orbit, pain at the root of the nose, and a nasal discharge, which symptoms were relieved by an opening of the frontal sinus. It is certain that the panophthalmitis was the result of a sinusitis following typhoid."

The ocular phenomena in the above case appeared during convalescence. The generally accepted theory in explanation of the ocular symptoms following typhoid, that they are due to a reduced vitality of the tissues, may account for their appearance during the disease, but, in the writer's opinion, it does not explain those complicating convalescence. Harke has shown how frequently accessory sinus disease is found in typhoid. In each one of three cases of typhoid, complicated by facial erysipelas, Zucarini discovered sinusitis at the autopsy and recommended appropriate treatment in typhoid cases showing facial erysipelas. The writer has had one case of sinusitis appearing in convalescence after typhoid.

Rollet, in addition to the above case, refers to a second patient, "in whom an early operation for sinusitis prevented panophthalmitis." In a personal observation treatment of the sinuses aborted threatening panophthalmitis and probable enucleation, periorbital edema, swollen lids, protrusion of the globe, deep corneal abscess, hypopion, iridocylitis, and blindness. The trouble began over four months before; the corneal abscess was of three weeks' duration, with no response to internal or local treatment. The patient said at the first visit, "Take out the eye if it will do any good." The third day after treatment of the sinuses no hypopion; on the eighth day corneal abscess healed over; later periorbital and retroocular edema disappeared entirely; the globe, with the exception of a corneal scar, assumed a normal appearance.

The imminence of panophthalmitis in this case is shown by the pus in the anterior chamber and the iris adhering to the posterior layer of the cornea. The preservation of a practically normal appearing globe, even though vision is lost, is infinitely preferable to the disfigurement of a glass eye, especially if the patient is a lady. If during the height of the inflammatory condition in the above patient's left eye the right one should also have become congested, would not the condition in all probability have been attributed to a "sympathetic ophthalmia"? The writer, basing his conclusions on the frequency with which he has found internal eye disease to be due to sinusitis, is of the opinion that many cases diagnosticated as sympathetic ophthalmia were identical with the above condition, and the therapeutic measures in many instances failed to give relief, as they were not directed toward the real cause. On the same grounds he would explain why enucleation in panophthalmitis occasionally terminates fatally, the meningitis, as well as the panophthalmitis, being the result of a sinusitis.

The immediate arrest of the pathological process in the above case and the rapid healing over of the corneal abscess and disappearance of the intraorbital edema—lid chemosis and protrusion of the eye—following drainage of the frontal sinus demonstrate conclusively that the condition resulted from an intraorbital circulatory disturbance due to sinusitis, and, in the writer's opinion, it also illustrates the formation of a corneal abscess in accordance with his theory mentioned above. In another personal observation each eye showed numerous elevations of the corneal epithelium from an underlying edema, interstitial keratitis, cyclitis, and vision counting fingers, with restoration to normal by drainage of the cavities alone. This was one of some 12-15 influenza-ocular cases, in all of which, with the exception of two patients who did not undergo treatment as advised, the ocular symptoms were traced by the writer to a sinusitis, as shown by their relief following drainage.

A case of enucleation following influenza was reported by Hodges, and an examination of the orbital tissue showed an inflammatory condition. There had been intense periorbital pain, edema of the lower lid, chemosis, protrusion and rapid destruction of the eyeball. Corneal abscess resulting in destruction of the globe and enucleation occasionally appears in a healthy individual after a severe cold. This happened to a prominent physician in a Western city a year or so ago. "A cold in the head," in the writer's opinion, is but synonymous with sinusitis, and to the latter he would attribute the formation of such a corneal abscess. In six fatal cases of measles Harke found a disease of the accessory sinuses; in each of five cases of measles Wolff found a sinusitis at the autopsy; in each of three cases of measles reported by Hertel, corneal abscess developed—one patient recovered, one had both eyes enucleated, and the third lost both eyes and died. In each patient the purulent nasal discharge was examined to determine the particular microbe doing the mischief, revealing the pneumococcus, harmless to the normal cornea, according to Shumway. A study of the above facts, in the writer's opinion, demonstrates the fallacy of, first, the line of investigation heretofore pursued as to the cause of corneal abscess in these cases; it is not a question as to how the microbes reach the eye, but, rather, what renders the tissues subject to infection by these microbes, harmless under normal conditions; and, second, the therapeutic measures employed—treatment, instead of consisting of local applications, should be directed toward the cause.

An instance in which an enucleation of a normal eye was advised by an ophthalmologist, but was prevented by the timely diagnosis of a sinusitis, was reported by Farlow. In a sixteen-year-old patient a tumor appeared in the inner orbital angle of the left eye which gradually increased in size and pushed the globe forward. Following a severe cold, the eye was closed and protruded still further, for which he consulted two ophthalmologists, one of whom recommended an incision of the upper lid, probably for suspected orbital abscess; the other advised an enucleation. Farlow found no nasal discharge, but considered the

trouble to be due to suppressed sinusitis; intranasal operation (ethmoiditis) was followed by cure. In a case reported by Isola of intense headache, edema of the right upper lid, chemosis and later protrusion, reduced vision, and intense periorbital pain, a possible sinusitis was excluded by a negative nasal finding. An induration between the globe and the orbital ridge was held to be a sarcoma, and the contents of the orbit were removed. The same symptoms, appearing later in the other orbit, were considered to be an extension of the cancerous growth, but, luckily, before exenteration of the other orbit, the original "tumor" was examined under the microscope and found to be a simple inflammatory exudate. That a negative nasal finding does not exclude a sinusitis is shown by Farlow's case, and by many reported by the writer.

An instance of blindness followed later by enucleation due to sinusitis is a case by Berg. In a woman, twenty-five years old, the sight gradually failed until mere light perception remained in each eye, accompanied by most excruciating pain in the head, protrusion of each globe, abundant nasal secretion, at first hemorrhagic, later yellow in color. Nasal examination showed a bulging of the sphenoidal sinus; the right eye was enucleated and the ethmoidal and sphenoidal cavities opened, the secretion from the latter filling the orbit. If the sinusitis had been recognized early in this case, can there be any question that the enucleation could have been avoided and the blindness in each eye prevented as well? This case appears in the "possible list" of the many cases of blindness due to a flow of cerebrospinal fluid through the nostril, collected by St. Clair Thompson. That some of these instances of blindness, due to a flow of cerebrospinal fluid through the nostril, are but cases of sinusitis is shown by a perusal of the case histories, and by Deutschmann's explanation, according to Berg, of their pathogenesis: "The inflammatory matters of the stagnant lymphatic currents in the frontal or sphenoidal sinus penetrate into the subdural and subarachnoid spaces and their ramifications which accompany the optic and olfactory nerves." This hypothesis is probably the result of the generally accepted idea that an optic nerve affection is necessarily of cerebral origin.

There are many instances in the literature of enucleation of an amaurotic eye in order to relieve persistent pain; especially is this so in cases of glaucoma. In the writer's opinion his theory that idiopathic ocular disease arises from a circulatory disturbance caused by an irritation of the sympathetic by a sinusitis applies also to glaucoma, and on reading case histories that terminate by the statement that the sightless ball was removed on account of the persistent pain—cases of intraocular tension excluded—I often wonder whether the desired relief was really obtained.

In the following personal observation enucleation did not relieve the pain. In a lady with double iridocyclitis, increased intraocular tension and vision nearly lost several years before, an iridectomy was followed by very marked improvement in vision of the left eye. Later the right eye, although sightless, was also operated on, in order, according to the patient's statement, to relieve the glaucomatous pain; but on failure the ball was afterward enucleated for the same reason. When seen by the writer this patient complained of continual daily frontal neuralgia on each side, for which she had tried everything, but in vain. Drainage of a secretion from the frontal sinuses was the only treatment, according to her statement, that ever brought about any noticeable relief from her continual torture, and the causative relationship between the affection of the accessory sinuses and the ocular condition was shown by less abundant opacities in the vitreous, and by the vision improving from 1-10, 1-12 to 1-2. This patient herself discovered that the neuralgia was not due to the glaucoma, as she had always been told.

The most striking instance found by the writer, of the awful results following failure to suspect disease of the accessory cavities, is the following case of sinusitis by Bosworth. A man, forty-two years old, "during ten years of hopeless and pathetic search for health, under the advice of physician after physician unavailingly, made a sojourn in Bermuda; went to work, with his hours as long as possible, spent a fortnight in the Middletown Asylum, practised gardening, spent a summer in the Adirondacks, underwent a several months' course of electricity, adopted the Salisbury diet, was operated upon for varicocele, then tried Baucheitsmus daily for three months along the spine, then had eyeglasses fitted for supposed error in refraction, was operated upon for stricture, had castration performed on perfectly healthy organs, underwent circumcision, had his pubic artery ligated, was operated upon for hemorrhoids, had his spine cauterized unavailingly, wore a seton in the back of his neck for a month, had the muscles of his eyeball operated upon, and then had a healthy eyeball enucleated"—a veritable polyclinic subject. Three days after drainage of an accessory sinus disease the patient resumed his occupation, a healthy man. The operation on an external ocular muscle in this case, and in Ziem's also, points to a symptom that occasionally appears in sinusitis, an involvement of an external ocular muscle. This has been noted by Kuhnt, Posey, Hoople, the writer, and others.

Were the ophthalmologist to regard a retroocular edema, the involvement of an external muscle, a sluggish pupil, and an idiopathic inflammatory condition about the orbit or within the globe as a symptom of disease of the accessory sinuses, these unfortunate enucleations might be avoided, and, in many instances, the function of the eye be preserved.

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CONTRACTURES AND MUSCULAR ATROPHY

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We intend in this paper to study two secondary conditions, which may follow diseases of the articulations and of the osseous and muscular system. These two conditions are contractures and atrophy. In many of them massage is useful. We might even say that it is so in all; but nobody would think of affirming that he can definitely cure contractures, no matter what their origin or cause is. He may effect their disappearance, and it is then a really curative medication; but he may also simply contribute to the improvement of the nutrition of the muscles as a simple adjuvant of some more radical therapeutical means.

On account of the fact that identical treatment directed against symptoms, which in themselves seem to be the same, can yield quite different results, it is indispensable to analyze the cases, to trace them back to their origin, and, if possible, to determine their respective nature.

It is well-nigh impossible to study contractures and atrophy separately; they are two closely connected conditions which often exist either simultaneously or succeed one another. A contracted muscle will in time atrophy; the contrary will also happen. A muscular atrophy is often followed by contraction of the primarily affected muscle, or of the antagonistic muscles. This close relationship does in no way implicate the identity of the two conditions. We may conceive *a priori* that differences exist between them, which may be easily ascertained. It is possible for the nutrition of the contracted muscle to be intact; for all its elements to be preserved, and for sclerosis and fatty degeneration to be absent. In regard to this, the anatomical researches which have been conducted so far have not established definite ideas. Few have been the researches directed towards recent contractures. Then again, examinations by sight and by touch of a region which is the seat of contractures do not always reveal to us that diminution in size and emaciation which characterize pronounced atrophy; contractures and atrophy must therefore be studied separately.

Several years ago Duplay declared that contracture is an acute and necessarily spontaneous spasmodic shortening of the muscular fibers. Charles Richet calls contracture a prolonged muscular contraction which cannot be relaxed under influence of the will.[1] Erb speaks of a permanent shortening of the muscles, which produces a gradual approximation of their joints of insertion. In 1875 Straus gave the following definition: Contracture is a persistent and involuntary tonic contraction of one or several muscles of animal life.[2]

Blocq considers contracture as a pathological condition of a muscle characterized by involuntary and permanent stiffness.

According to the author, quite an appreciable number of conditions, which are similar to contracture, are erroneously connected with it.

In *true* contractures we find a constant exaggeration of the tendon reflexes and an habitual spinal trepidation; the antagonistic muscles are always affected; this contracture often begins under the influence of a traumatism. It exhibits variations in its intensity. On examination of the muscles a sensation of elastic resistance is experienced. It disappears after a certain length of time, which varies a good deal, after applying an Esmarch bandage. It relaxes completely during chloroform narcosis, and the electric reactions of the muscles are normal.

In *false* contractures there is no exaggeration of the tendon reflexes. These are, on the contrary, often diminished and sometimes even abolished. There is no spinal trepidation, the antagonistic muscles are not always affected; there is no tendency to generalization; the traumatism has no influence on its occurrence. A sensation of fibrous resistance is experienced; Esmarch's bandage as well as chloroform narcosis do not modify the condition. In some cases the electrical reactions are altered.

Blocq has done his utmost to find a criterion which would enable him to distinguish true from false contructures.[3] If we admit that the above symptoms adduced by him are correct, there always remains a gap from want of completeness of the general definition. Can we assume that all conditions called false contractures are not endowed with involuntary and lasting stiffness, that in fibrous retractions for instance, these have preserved their elacticity or that they have lost it only for a certain length of time? Be that as it may, alterations universally called contractures, are found in affections of the muscular system, the articulations and of the nervous system, and until Blocq's nomenclature is definitely accepted and his definition precisely stated we have no right to reject some of these changes or to consign them to a complimentary chapter.

We are confronted with facts: Contractures are observed to follow primary affections of the muscles, acute and chronic myositis. We may find contractures, although the muscles have not become affected; it is to these that the deformities and defective attitudes of the limbs after articular affections are due. Blocq considered these affections as a type of true spasmodic contractures. These were described a long time ago by Hunter, who considered them as a sympathetic result between the muscles and the joints. They were carefully studied by Duchenne, of Boulogne, who called them reflex ascending contractures of articular origin. The affected muscles are the seat of more or less violent pains, which he ascribed to a morbid state of the gray matter.

Bell ascribed the defective attitudes to a position instinctively taken by the patient in order to relax the muscles and relieve the pain. Bonnet attributed everything to the pressure exerted by the morbid liquids of the articular cavities on the ligaments. But defective attitudes are found in arthropathies which are not painful; in dry arthritis, when there is no effusion into the synovial membrane; they result from muscular contractures. These are sometimes developed at about the same time as the arthritis itself and are not followed by any appreciable anatomical alteration of the muscles or their neighborhood. There exists perhaps no essential difference between these contractures and those which are observed in some diseases of the nervous system and of which the permanent contracture of the hemiplegic muscles is the prototype. The shortened muscles suffer and their fibers degenerate in time. This is what has been demonstrated by Hermann, Ormerod, and many others. Contractures of nerv-

ous origin were at first explained by such a convenient theory that it has been adopted by many physicians. The muscular fiber possesses in its normal state an activity of its own. This latter maintains the muscles in a state of permanent contraction, it is a muscular tone, a sort of excitation maintained by the spinal centers. The paralysis of a muscle is followed by an increase of the tone in its antagonist. The position of an organ depends upon the equilibrium maintained by all the muscles that support it or impart motion to it. Under this hypothesis, deviations can always be explained.

Saint Germain says: "Nothing is more easy to explain than muscular torticollis. When we examine a skeleton we perceive that the head is in an unstable equilibrium on the top of the vertebral column, so situated that the anterior part of the head, which consists of a portion of the skull and the face, is heavier than the posterior part. This fact, which is very evident in man, is much more so in animals. Thus we see that the head is kept in equilibrium only by the power of the muscles which are inserted into it and which act as shrouds, and, if there is an inequality in the lateral tractions, the equilibrium is soon disturbed. This inequality may, theoretically speaking, be produced either because there is too much traction on one of the cords or because there is not traction enough. Most frequently one of the cords pulls too much and one of the powers becomes predominant while its antagonist remains normal; in a word, the disturbance of the equilibrium generally results from the contraction of a muscle and not from the paralysis of its antagonist."[4]

A great deal might be said on this ingenious theory. It is probably true in some cases of inflammatory torticollis, but in admitting the physiological starting point, namely, the maintenance of the equilibrium by antagonism of the symmetrical muscles, all objections are not refuted. We have seen cases of circumscribed myositis followed by radiation to other parts without any change of place of the head, and this is easy to understand. Excessive activity on the part of one muscle calls forth a reaction on the part of its antagonistic muscle, so that the equilibrium is restored. In contractures of hemiplegic muscles this doctrine is hardly applicable. Why do some muscles contract on paralysis of the lower extremity while others remain flabby and undergo atrophy?

Hüter's theory.—In three articles on this subject Hüter contested the old theory and left very little of it in existence.[5] His ideas have been adopted by Volkmann.[6] Let us see what he substitutes for it. In his "Handbuch der Gelenkkrankheiten" we find a scheme which is so simple that it seems useless to me to reproduce it here. This scheme is to demonstrate the idea which the author had of the movements of the foot. According to him it is a simple lever, whose point of support is nearer the posterior than the anterior extremity. The first one will incline forward when its direction is governed only by the force of gravity, because the anterior arm of the lever is the longer. A deformity will result, which is called talipes equino-varus. If the extremity remains horizontal it will depend upon the intervention of the muscles. If all the muscles are paralyzed, the toes are lowered, the heel is elevated, and the points of insertion of the posterior muscles approach each other. Now the muscular substance possesses an incontestible property. Every time the points of insertion of a muscle are approximated for some time, its nutrition suffers and the muscle will contract. The author says: "This law is confirmed by our anatomical pathological data and by experiments. It is sufficient to wear for several weeks a retentive bandage near a joint. If we have to put up the fractured forearm at right angle with the arm, so that the articulation of the elbow, which is absolutely normal, is immobilized, we shall find, after removal of the apparatus, that the movements in the direction of extension are very limited. In order to convince one's self of the nutritive change all we have to do is to put the patient under an anesthetic and we shall see that we can, without inflicting any violence, reach the maximum of extension." He adds further: "As there are very few cases of absolute and complete paralysis which render contraction of the muscles impossible, an acting force capable of shortening them has been searched for, for want of something better. One has had recourse to the muscular tone. Does it exist? That is to say, can a muscle undergo spontaneous shortening after complete suppression of the innervation? This is a physiological question which we cannot discuss. It is of little importance in the explanation of paralytic contractures. Nobody who believes in the existence of the muscular tone would admit that an agent of so little energy could support the weight of a limb for months and years."

Hüter's objections seem to me more decisive than his theory itself. It is based on one fact which is true only as regards the lower extremity. One would often be embarrassed to explain how the points of insertion of a muscle can get nearer to each other. According to Hüter there is no difference between contracture and atrophy. As soon as the nutrition has become defective everything else is only a question of degree. It is rather difficult by the aid of this doctrine to explain many contractures of muscular origin, which resemble a great deal those that are produced by affections of the nervous system.

Charcot, Vulpian, and Erb have placed in the category of reflex phenomena those muscular affections which were but the expression of a state of the gray substance of the brain, originating from the transmission of articular irritant phenomena through the nervous system. One is thus led to admit that there exists in the medullary substance a certain relation between the cells originating from the articular centripetal nerves and those of the motor nerves of the muscles in which the various observed affections are localized.

Nearly all those who have studied the question have expressed themselves with the same degree of reserve. A perceptible medullary lesion may exist, but it is probable that in many cases the disorders do not progress so far; it is probable that the lesion is limited to a sort of cellular superexcitation which is the cause of the contracture. Like all irritations of the same kind this irritation will soon exhaust the element and give rise to numbness, so that paralysis and atrophy will be consecutive to the initial contracture, if the latter is prolonged. Is this theory final and conclusive? Does it suit all cases? We cannot affirm it. It is difficult to explain contracture of the hemiplegic muscles by a primary irritation of certain groups of medullary cells.

Besides, it matters little. All we can say is that Duchenne's doctrine is applicable in some cases and Hüter's in others. If we ascribe the first stage of the process to the irritation of the medullary cells, we may explain the second one by the nutritive disturbances which the muscle whose extremities approach each other is undergoing. The origin and cause of contracture and atrophy are thus elucidated.

Sometimes real paralysis develops in those affections in which contractures have occurred. It is then that Hüter's doctrine may be applied. Paralysis as well as contracture may terminate in atrophy; but the latter is often developed in articular atropathies from the very onset. In making injections of liquid into the synovial membrane, Mr. Valtat has been able to provoke it without any difficulty.[7] It is generally observed in the peri- or para-articular muscles. It affects by preference those which are used for the purpose of extension. Atrophy of the deltoid is not at all rare after affections of the scapulo-humeral joint. When the hip is affected, it is most often the gluteal muscles that suffer; after diseases of the knee atrophy of the femoral triceps most often occurs. As Vulpian has justly remarked, it is above the joints that the trouble is produced. In most cases it is difficult to adduce long continued rest as an etiological factor and to connect the observed phenomena with atrophy due to inactivity, as it sometimes makes its appearance in a very short time after the starting of the articular trouble. Besides, it would be hard to explain why the extensors are those which alone, or particularly, get affected.

From what we have said one fact is certain, that whatever be the predominant phenomenon, the nutrition of the muscle is always affected. How this is produced is of little importance; whether the general state of health plays a prominent part in the production of the affections or whether the atrophy and the contracture are produced in a direct or reflex way, we may nevertheless interfere advantageously and by persistent local medication we may improve the nutrition of the muscle. This was our object in view.

The following very interesting case will serve as an illustration, although, owing to its particularly grave character, an improvement only was obtained. Mr. Ch., eighteen years old, of weak constitution, has complained for eight years, following an attack of measles, of great weakness in the lower extremities. Patient could walk, but was easily fatigued. The legs gradually seemed to get shorter and the deformity more marked. In 1869 he was still able to extend the right leg, whereas the left leg was fixed in flexion. For three years he had been walking with crutches. Faradization for six months was without effect. In 1880 Dr. Metzger extended the right leg forcibly and applied a plaster bandage. The latter was so painful that it had to be removed, and the patient returned to Paris, where I saw him for the first time in 1881. The lower extremities at that time showed marked contracture, the chief muscles involved being the flexors of the thigh and to a less extent the adductors. The angle of flexion was, in both legs about the same, 130°, which could on the right side be increased to 150° by forcible extension. Active mobility at the knee joint was of practically no functional utility. Pes valgus of the second degree. The contracted muscles of the thigh are of very firm consistency and inelastic. The same holds true for the muscles of the calf, whereas the other muscles of the leg show some atrophy. The knee joint itself is apparently normal. After two months of treatment with massage and forced extension and adduction I was able to extend the right leg completely. On the left side, however, improvement was less rapid and less complete, but after two months of further treatment I noticed with satisfaction that the muscles had regained a great deal of elasticity. Extension could be made to 160°; the adduction also was greatly increased so that the patient was able to ride his horse. By means of an apparatus constructed by Mr. Mariano in Paris, and aided by a stick, the patient could walk. It is reasonable to assume that active exercise as well as the weight of the body producing tension upon the contracted and atrophied muscles, will, at least in a slight degree, decrease the remaining deformity on the left side.

Before taking up massage proper, I used electrotherapy alone in the treatment of muscular atrophy, but I was not satisfied with the latter, and since several years I have given it up entirely. It is sometimes a useful adjuvant, but I ascribe the greatest part of my success to massage. With it alone I have cured cases in which electricity did not give the desired results.[8] It would, however, be a fallacy to suppose that it is always so in old atrophies and especially in those which are secondary to white swelling. In old persons great perseverance is required. We must not be afraid of energetic manipulations, rubbing, kneading, and tapotement; passive movements are also indicated. One of the best maneuvers consists in having the patient execute active movements and resisting them. When the atrophy has reached a certain degree of development, these movements are so feeble that they are of little or no use. In these cases massage must be performed first in order to increase the nutrition and vitality of the muscles, before one may be able to have recourse to the mentioned movements with assistance. The nerves must also be massaged, and it would be well to combine digital pressure, which we have mentioned elsewhere, with the other manipulations. In order to appreciate the results of the treatment repeated measurements must be taken, and at exactly the same level. Care must be taken not to push the measure more on one side than on the other.

The results are, of course, much less satisfactory in contractures and atrophies resulting from an affection of the nervous centers than in those which are secondary to a peripheral alteration of the articulations, the bones, or the muscles.

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8. It has been maintained that massage acts only on the atrophy of the muscle, but that it is of no influence on the frequent complication of fatty degeneration; that, in order to overcome this, we must resort to electricity. Without contesting its favorable influence, I have seen cases, even very advanced ones, in which by means of massage alone I was able to overcome the degeneration completely and restore the former firmness and consistency to the muscle or group of muscles.

WHEN IS "EARLY" IN OPERATING FOR APPENDICITIS?

By A. M. POND, M.D.,

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Just so long as surgeons persist in practising their art by rule, just so long will their work be unsatisfactory and their teaching unwholesome. When a surgeon tries to measure the danger of a ruptured appendix by hours, or still more, to put on such cases a time limit after which the inflamed organ becomes dangerous, the dynamics of pathology has not been reckoned with. The gravity of all infections is dependent upon (1) the virulency of the infective agent, whether it is simple or mixed, and (2) the degree of physical resistance possessed by the individual.

It is most unfortunate, then, to have the teaching of eminent men expressed in hours. These men, to whom we owe respect and a great debt of gratitude for the pioneer work of blazing the trail that should be the means of saving human lives, no doubt expected that instead of following their diction of "early" and "late" operation, the physical findings would prevail rather than any fixed rule as to the number of hours that should have elapsed; but naturally, being observant men, they had figured the number of hours since the initial symptoms of the attack, and then recorded their pathological findings as revealed by operation.

Usually the patients who are operated upon in the first twelve or twenty-four hours of their attack recover, and again we are surprised sometimes at the serious pathological condition revealed in the cases giving a history of but a few hours. The following case is an example of what was considered the first attack, and of what promised to be an early operation:

Paul B., aged ten years; American. Had the usual diseases of childhood, viz., measles, chickenpox, whooping-cough. October 12, 1903, he was taken with sudden pain in the stomach early in the morning, but did not awaken his parents. He ate a moderate breakfast of oatmeal, toast, and coffee, and went to school. At 10 A. M. he began to vomit and was excused from classes. I saw the patient at 10.30 on that day. He was anemic and nauseated; the vomitus consisted first of the stomach contents, then of a frothy, yellowish mucus; temperature, 98.6°; pulse, 84. The pain had begun near the umbillicus, was spasmodic in character, and had gradually become more severe in the right iliac fossa. Examination revealed a rigidity of the right rectus muscle produced by percussion; gentle continuous pressure, however, could be tolerated to a considerable extent; examination per rectum revealed an exceedingly tender spot by making pressure to the right. Diagnosis was made of an acute appendicitis. The parents were exceptionally intelligent people and expressed a willingness to cooperate with me in every possible way. All food was denied, an ice-bag was placed over the tender spot in the right inguinal fossa, and the boy was put to bed. At 1 P. M. I saw the child again; at that time the pulse was 96 and the temperature was 100.6°; the abdomen was more rigid and the attacks of pain were more frequent. Operation was advised at once, and at 4 P. M. the abdomen was opened, revealing a thickened, hyperemic appendix, which was kinked upon itself, and the tip of which was adherent to the posterior part of the cecum. The appendix contained pus and a small concretion about the size of a small bean, and the mucosa of the organ was gangrenous.

This patient was operated upon inside of the first twelve hours of the attack; the formation of pus, therefore, must have been very rapid.

During the recovery of the boy he remembered having a sharp "stomachache," as he termed it, once before during the early part of the summer; he vomited at that time, but attributed the attack to the eating of green apples, so did not mention it to his parents. It is interesting to note in passing that two symptoms with which the attack was ushered in continued until after the operation; these symptoms, pain and vomiting, I consider very important; in fact, I am coming to attach more importance to their occurrence, severity, and character than I am to the pulse rate and the degree of temperature; however, I would not wish to be understood as in any way ignoring the value of the latter.

I have no doubt there is a large percentage of cases of acute appendicitis with a history similar to the foregoing, cases in which a catarrhal attack had preceded, leaving either a stenosis of the canal of the appendix or a small concretion. These cases are prone to recur, and when they do we find, as in the above case, that damage has already been done to the mucosa; and the formation of pus, with the symptoms of an active infection, is very rapid, and sometimes attended with quite obscure symptoms.

In comparing the mortality rates in a series of operations made by men with large clinical opportunities we are at once struck by the fact that cases which were operated upon within the first few hours of the attack as a rule end in recovery, and that the mortality increases after twenty-four hours up to seventy-two hours, then subsides again; hence the dictum has gone abroad that the first twenty-four hours is the most favorable time to operate in these acute cases, but I feel that it is wrong to put this great lesson in hours or minutes, or even days.

The security shown by these tables of recoveries is not dependent upon the hour at which the patients were operated upon, but is rather dependent upon the degree of pathological disturbance that had existed or had been interrupted; and since it takes a few hours to produce these pathological conditions, it seemed most natural to express the danger point in that manner. There would be little or no objection to the use of the time limit if other elements were equal. There is no doubt that, in cases where the infective agent or agents are the same, and the degree of physical resistance is the same, the hours of development to a grave state would be the same. But how are we to know these things? We have not as yet any instruments of precision that can measure the virulence of an infective agent, neither do we have any method of determining the physical resistance to exact degrees. The examination of the blood for its relative values of leucocytes, red cells, and hemaglobin may be a step in that direction, but as yet we know nothing of the degree of resistance of the cell structures of the body. Hence, I believe that the expression in hours of a safe time for operation in the acute cases of appendicitis is most unfortunate, and is too apt to be followed blindly without the due regard to the real demands for operation, which are the recognition of the pathological progress, as evidenced by the patient's condition.

The first symptom to appear, and the first symptom of importance, is the pain, the character, and the location of which may well be studied, because it has to do directly with the pathology of the part; it owes its very presence to a diseased condition of the organ, and frequently there is a very close relation existing between the pain and the degree of dis-

turbance; the more severe the pain the more grave the pathology.

This is only true, however, of the appendix that remains intact, for as soon as a perforation occurs, the distended appendix is relieved and the pain ceases; the absence of pain, then, is certainly not a good omen.

The character of this important symptom is at first colicky, and as a rule it recurs periodically; the location is at first at or near the umbilicus, and after a few spasms of pain nausea or the second cardinal symptom becomes conspicuous. The pain gradually shifts into the lower portion of the abdomen, usually into the right fossa, but sometimes into the left, and rarely to a point above the bladder. As the pain becomes more constant it usually becomes more intense, and as its intensity increases the nausea is more frequent and more severe; with the increasing pain and nausea there is usually a local peritonitis that can first be detected by percussion of the right fossa; a distinct spasm of the right rectus can be felt before any marked rigidity can be detected by gradual pressure. The symptoms, then, can be classified according to their occurrence, and I am convinced that they occur in exact relation with their importance. Pain, then, is the first and the most important symptom, followed closely by nausea and vomiting; the increased pulse rate and rise in temperature are evident in exact proportion to the pathological progress in the appendix or peritoneum; the rigidity of the abdominal wall follows this damage and is Nature's attempt to protect a peritoneum that either has already become inflamed or is rapidly becoming so.

The gravity of an acute inflammation of the appendix is due not so much to what damage may be done to this vestigial organ, as to the dangers of local, general, or diffuse peritonitis caused by the rupture into the free abdominal cavity of its highly infected contents.

Undisputed cases of catarrhal appendicitis have been reported by eminent medical men as cured, and there is no doubt that little if any pathology would be in evidence if the appendix could be examined, but there is usually some damage done to the mucous lining of the organ that perverts the normal currents of the appendix; the lumen is either lessened, or perhaps obliterated, or there is an extravasation of blood or serum into the canal which unites with the inorganic substances of secretion, and promotes cohesion which forms a nucleus for a concretion. The presence of this concretion, then, becomes a constant source of irritation and there at once arises the question of the equation of resistance and infective virulence. So long as the resistance is greater than the infective ability of the invading host, so long is the integrity of the part maintained; but with a lessened blood supply or lowered support from any cause the structure of the organ is compromised and degeneration or destruction takes place in exactly the proportion that the increased activity of the infective agent bears to the physical resistance of the part, be it much or little.

An appendix containing a concretion or having a stenosis of its lumen is, to a certain extent, in a constant state of hyperemia, and dissolution may take place in a very few hours. A local peritonitis producing the acute pain, the vomiting, increase in pulse rate, and rise in temperature with abdominal rigidity cannot be called early in the attack with anywhere near the security that one would like to feel in operating in these cases that have been under observation perhaps but a few hours, and which, according to the time standard, would be called early. When we find in any case adhesions, with local peritonitis of varying degree, an appendix containing pus, concretions, or even a stenosis of its lumen with a gangrenous mucosa, it surely is not early in the course of the disease, even if the presence of the latter has been known but a few hours, nor is such a case likely to give the promised prompt recovery we would like to expect.

Therefore I would offer an earnest plea that the cardinal symptoms produced by the pathological processes taking place in the structure of an organ be given the precedence over the matter of hours, and the proper importance be put upon these symptoms, irrespective of the time of their occurrence.

THE MODERN TREATMENT OF INTRACAPSULAR FRACTURES.

By W. L. HUNT, M.D.,

BANGOR, ME.

VISITING SURGEON EASTERN MAINE GENERAL HOSPITAL.

THIRTY years past, when the writer began to read medical journals, there was a controversy whether intracapsular fractures ever united. The same discussion has entered more or less into all the medical textbooks since. In a general practice of many years numerous cases of this fracture have come under my observation. Some were seen with counsel, all were carefully diagnosed, and to all the same statements were made, that they would be probably crippled for life. Many patients survived for years, able only to sit up or hobble on crutches; some died soon after the injury. I never saw an undoubted case in which the patient was able to walk until after Dr. Ruth's paper was read at the Saratoga meeting of the American Medical Association in 1903. Since then I have seen three patients, and they are all walking without a limp. The object of this paper is to give details of these cases.

Mrs. K. was eighty years and six months of age and blind. She tripped on the stair and received a fracture. She was under the care of Dr. Swett and Dr. Caro Swett of this city. I saw her on the third day after the injury. She was thin and had a cough, some fever, and beginning bed sores. A fatal prognosis had been given. Dr. Maxwell's treatment was given after she had been etherized, and she was assiduously attended by the Drs. Swett until her recovery. A water bed was used with fine effect on the bed sores. She had a long and tedious illness, due to the cough and resulting weakness, but in a few months made a very good recovery, and was around in four months, complaining more of the knee than of the hip. She was too ill some of the time to move the knee-joint sufficiently. The leg is some shorter than its fellow, but the patient walks without a limp and is alive and well to-day. This boon she owes to the Maxwell treatment.

While this case was in progress I saw the second case with my son, then a medical student. Mrs. E., residing on a farm, had lifted her grandchild on her knee to hoist him in a wagon when she fell and the neck of the femur was broken. She was etherized and a diagnosis made, and Maxwell's method was used. She had no trained nurse. She was seventy-five years of age, short, of medium weight, and in good health. She had some mild fever, no bed sores, and as she lived some way out of town was not often seen. The knee had no exercise and was quite stiff on the patient getting about. In forty days the splints were taken off. She also is alive and well and has no limp. The leg is about an inch or less shorter than its fellow.

The third case completes the list of the intracapsular fractures I have seen since 1903. This lady was between eighty-one and eighty-two years old. She fell in the doorway or was pushed over by a cart and broke the femur. She was thin, with red cheeks and thin skin. She was etherized and a diagnosis made. Her son, a prominent physician of Oldtown, was notified and she was removed to a relative's residence, where her son saw her. She was again given ether and Dr. Maxwell's method was instituted and carried out with the aid of a trained nurse. The treatment was discontinued after about forty days and she began to get around. For some months she had trouble with the knee-joint, as here also it seemed impossible, from various causes, to move the knee sufficiently often to prevent some ankylosis, but in six months she was going around as usual. She has no limp and her degree of shortening has not been measured. She goes everywhere and no one would suspect she had ever injured her hip.

After using the old treatment one is agreeably pleased to see how easy it is to keep the patient clean and free from bed sores and how comfortably the bedpan can be handled. The patient can raise the body as the weight of the injured limb is balanced by the traction of the side pulley. By this method a severe injury is turned into a milder one and one not usually fatal except in the very debilitated. The treatment is not widely known. It comprises the old downward extension with adhesive straps with side traction at the groin, carrying a pull upward, outward, and forward. This takes up the weight of the thigh partly, holds it opposite the point of fracture, and draws the capsule like a tight sleeve over the fragments, holding them in place.

This method should be widely known and generally practised. Its originator was Professor Maxwell of the Keokuk Medical School. It was brought prominently before the profession by an admirable paper by Dr. Ruth of the same city.

A METHOD OF OPERATING ON THE LIP.

By C. F. BUCKLEY, M.D.,
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THE illustration herewith presented shows, diagrammatically, the method employed by the writer for the removal from the lip, under local anesthesia, of

benign growths or of those that are malignant but without glandular involvement. It is equally applicable to any operative work upon the lips where general anesthesia is not demanded, and even there it will, I believe, be found to be of advantage.

For the purpose, a pair of Murphy intestinal anastomosis clamps, with their blades sheathed in rubber tubing to protect the engaged skin and mucous membrane from the effects of their serrated surfaces, are applied as indicated, with their edges about three-eighths of an inch from the line of proposed incision. The local anesthetic is injected, and the portion of the lip containing the growth, *A*, is then excised. Sutures are inserted at points *B-B*, the wound edges are approximated, the clamps removed, and the dressing applied.

The advantages of this method are:

1. The application of the clamps prior to the injection of the anesthetizing medium confines the drug employed to the area to be operated upon, rendering systemic absorption impossible. This permits of complete anesthetization of the tissues between the clamps and an absolutely painless excision of that part.

2. Complete arrest of hemorrhage from the coronary arteries.

3. The handles of the clamps may be used in approximating the wound edges, thus relieving tension on the sutures.

4. No assistant is required. The necessity under which the writer once was of operating entirely alone on a growth involving the lower lip was the originator of this idea, which has been used successfully since that time.

802 CARROLL STREET.

Eucalyptus Oil as a Vermifuge in Ankylostomiasis.—Llewellyn Powell Phillips believes that the treatment which he here describes is more successful than that with thymol, in such doses as can be given in safety. When properly carried out, it is followed by very good results. The formula which he uses is composed of: eucalyptus oil, 2.5 grams; chloroform, 3.5 grams; castor oil, 40.0 grams. The routine method which he employs is as follows: About six o'clock in the evening the patient is given a saline purge; he fasts all night, and the next morning at seven takes half of the above mixture. The other half is taken thirty minutes later. The patient stays in bed still fasting until the bowels move. If any depression is noticed after the administration of the first dose, the second one is omitted. In young boys and feeble, anemic patients the dose is divided into thirds, and given at twenty-minute intervals. The dose may be repeated every other day. As a rule three or four liquid stools follow, though in some cases there is only one. Occasionally the first administration is not successful. The chloroform is an essential constituent of the formula, as has been proved in cases in which chloroform water was substituted by mistake. The treatment has been employed in one hundred and three cases, forty-four of which were entirely successful. In twenty-six of these cases the treatment was efficient, while in the other thirty-three the results were either unknown or negative, the drugs being employed in some for diagnosis, while in others mixed treatment was adopted. One patient died. The results show that the treatment is satisfactory with reference to its vermifugal effects. It is not unpleasant for the patient, for long fasting is not necessary and the taste of the mixture is not offensive. The stay in the hospital is shortened. The absence or rareness of cardiac depression is a good feature. The writer adds that oxyurides are freely expelled by it, and he has used it in one instance to expel a tapeworm, with success.—*The Journal of Tropical Medicine.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A SOCIETY FOR THE IMPARTIAL INVESTIGATION OF NEW REMEDIES.

A NUMBER of members of the medical and pharmaceutical professions met at the Hotel Astor in this city on October 21, 1905, and established the American Pharmacological Society, with Dr. Reynold Webb Wilcox, of New York, president, and Dr. F. E. Stewart, of East Orange, N. J., secretary. The object of the society was announced to be the promotion of progress in the knowledge of medicinal drugs and chemicals, and the dissemination of that knowledge for the relief of human suffering. This object is to be attained by a collective investigation, conducted under the authority of the society, evidence for and against the value of new remedies being gathered from all authentic sources and published in the working bulletins of the society. The function of the society, it is stated, is not to pronounce a verdict regarding any remedy under investigation, but to publish all the evidence obtainable, leaving the medical profession to act on this evidence as judge.

The plan under which the society works was originally suggested to the Smithsonian Institute in 1881 and was endorsed by many individuals and societies. A few years ago a joint committee was appointed by the American Medical Association and the American Pharmaceutical Association for the elaboration of this plan, but the only result of the conference was the appointment of the Council on Pharmacy and Chemistry of the American Medical Association, the methods of which differ materially from those originally suggested in that the working-bulletin system is omitted and the feature of standardization is accented. In order to restore this important part of the original plan and to remove the element of secrecy from the investigation, this new society was established. Its first working bulletin is published in *American Medicine* for October, 1906, and deals with a product recently condemned by the Council on Pharmacy. From the evidence, analytical and experimental, collected and published by the Pharmacological Society one would be led to conclude that the condemnatory action of the Council on Pharmacy was precipitate. The society mentions the report of a sub-committee of the Council, but states that it cannot include the report in its bulletin since the results of the experiments of the committee have not been made scientifically available by a publication of the names of the investigators and the methods by which these results were obtained.

So far as can be determined by a careful study of this first working bulletin, the plan of the society would seem to be one that deserves the confidence of the medical and pharmaceutical professions. The society works in the open, the evidence pro and con is accepted on its face value, all the facts regarding the drug are placed before the profession, and the latter is left free to form its own judgment after weighing these facts. That is what the physician needs. He wants to know whether the remedy offered for his use in practice is as it is represented by the manufacturer, and if not, what it is. He can then decide for himself whether the preparation is good or bad, and does not need a committee to decide for him. The American Pharmacological Society apparently has a work of great utility before it, and if it continues in the impartial manner of its first essay it will certainly deserve the confidence and the thanks of both physicians and pharmacists.

THE TOXIN-ANTITOXIN UNION, IS IT CHEMICAL OR PHYSICAL?

AT a recent meeting of the Society for Experimental Medicine and Biology, Dr. Field of this city reported some interesting studies which he and Dr. Teague had made on the character of the toxin-antitoxin combination. As is well known, the components of a chemical combination, the ions, carry opposite electrical charges, and when such a combination is dissociated by electrolysis the two kinds of ions travel to and accumulate at the two poles. In the case of a number of proteids it has been found that the pole at which they accumulate depends on the reaction of the medium. Whether this holds true of all proteids, and especially of native proteids, is open to question.

In the experiments of Field and Teague a number of technical difficulties which had proved sources of considerable error in the work of previous workers along this line were cleverly overcome, and it was found that both toxins and antitoxins (diphtheria and tetanus) traveled to the cathode pole. Moreover, this direction was not changed by an alteration in the reaction of the medium; at least this was true of the native products. These results, while rather surprising, appear to be amply confirmed by the numerous experiments of the authors. They conclude that the union of toxin and antitoxin is not a chemical one, and hold, with Nernst, that it is probably an adsorption phenomenon. If this is true, the consequences will be far-reaching, for the entire side-chain theory of Ehrlich is built up on the assumption that the union of toxin and antitoxin is strictly a chemical one. It is because of this assumption that Ehrlich finds no difficulty in explaining the specificity of the reaction products in immunization. How this can be done with the adsorption theory remains to be seen.

We are informed that Dr. Field's paper is to appear in an early issue of the *Journal of Experimental Medicine*. Its publication will be awaited with interest, as will also the reply that Ehrlich's school will make to this bold attack on their fundamental position.

PERITONITIS OF DOUBTFUL ORIGIN.

In addition to the large number of cases of peritonitis in which the infection can be traced to one of the abdominal or thoracic organs without any question, there is another smaller group in which the source of the trouble is more or less obscure. Two possibilities may be considered in accounting for the latter form—a focus of infection is present somewhere in the body, but so far removed from the peritoneal cavity that a direct extension of the process is impossible, or the peritonitis itself, in the absence of any organic lesion, constitutes the only demonstrable pathogenic process in the organism. The first of these, which may perhaps be included with such types of peritonitis as are found in connection with articular rheumatism and scurvy, has been thought to be of a hematogenous origin, a few isolated germs reaching the peritoneum through the blood stream. The second class is represented by the much-disputed primary idiopathic peritonitis, in which the infective germs reach the peritoneum through the anatomically unchanged intestinal wall or the internal genitals in the female. If such a state of affairs could be accepted as possible, there is, of course, no way of obtaining any clinical demonstration of the fact, nor would it constitute any contradiction to an infection by contiguity, for minute abscesses of the liver or suppurating mesenteric glands may likewise fail to give rise to any clinical signs and only become evident in a carefully performed autopsy; and even here small primary foci, such as perforating intestinal diverticula and slight circumscribed inflammatory processes in the female genital tract, may be easily overlooked. Thus in children an apparently primary peritoneal inflammation has been traced to a microscopic endometritis or salpingitis of streptococcic origin.

The diagnosis of a hematogenous or idiopathic peritonitis must therefore be accepted with considerable scepticism, even if an autopsy fails immediately to reveal the origin of the process. An account of two cases recently published by Oppenheimer in the *Zeitschrift für Chirurgie*, Vol. 83, No. 5, affords a good demonstration of this fact. In one an operation was undertaken for the removal of a pyloric tumor. The patient made a good recovery, but five weeks later developed, without apparent cause, evidences of a severe general infection, which rapidly went on to a fatal issue. The autopsy disclosed a seropurulent gastritis and a general peritonitis, although the former could not be definitely demonstrated until a microscopical examination had been made. It is probable that in this case infection of the peritoneum took place through the stomach wound, this having been incompletely healed or else subjected to traumatism from the food. In another instance a baby with an attack of general erysipelas which ended fatally showed the presence of a general peritonitis on autopsy. The presence of a layer of fibrin on the spleen led to a closer examination of this organ, which showed numerous circumscribed foci of streptococci near the surface, and these were surrounded by areas of necrosis. The kidneys and the thyroid contained similar foci as did the vessels, constituting a picture such as is often seen in fatal cases of erysipelas. The close relation of these splenic foci to the peritoneum is undoubtedly sufficient to account for the infection of the latter.

These cases show how small and easily overlooked pathological processes may lead to the production of a severe and even fatal purulent peritonitis. In every instance, therefore, in which no gross lesion can be found to account for the production of the latter, it would be a wise procedure to make a more extended microscopical examination of suspicious organs. Oppenheimer's communication serves to add further proof that the diagnosis of hematogenous or idiopathic peritonitis is probably not a true one and should not be accepted unless such minute or obscure sources of infection as those noted can be eliminated.

THE ETIOLOGY OF HEPATIC CIRRHOSIS.

Progress in our knowledge of the individual diseases has been marked in almost every instance by the close association of clinical observation with pathological anatomy and experimental investigation. Clinical observation may have pointed out the way in which experiments could be directed towards a solution of the etiology and pathogenesis of a given disease, and conversely experimental research has led to results which were capable of clinical application. Following along this line, the endeavor has been made to produce hepatic cirrhosis in animals by experimental means in order to gain an insight into the etiology of the process, but the results obtained thus far unfortunately do not permit us to draw any definite conclusions. Clinical observation suggested the fact that cirrhosis of the liver might perhaps be brought about experimentally in animals by the ingestion of alcohol. But this attempt failed, and it was only by the inhalation of this substance in rabbits that a pathological picture was produced similar to that which we associate with hepatic cirrhosis in the human subject. It was also thought possible that the gastric disorders which accompany chronic alcoholism might exert an influence in the development of a cirrhosis by producing deleterious disintegration products from food as the result of faulty digestion, and this led to the experiment of adding certain fatty acids to the ingested food. And here it was found that the administration of butyric and even of acetic acid was apparently instrumental in producing the lesion in question. It might also be expected that if we could apply in such experiments an agent which exerted an undoubted specific action on the liver cells, some more definite result would be obtained. A hepatotoxic immune serum apparently fills this requirement, but its use has not been followed by the hoped-for result. Of greater importance, particularly for clinical medicine, is a more complete knowledge of the rôle of the microorganisms and their toxins in the production of cirrhosis of the liver. The injection of staphylococci and tubercle bacilli has indeed in many instances been followed by the production of a lesion which presented all the microscopic evidences of cirrhosis.

It has been thought advisable to group cases of hepatic cirrhosis according to their clinical course and anatomical picture, but as a matter of fact we may have the same etiological basis in a most varied

series of anatomical pictures. An interesting study of this subject has lately been made by Jagic in Nothnagel's clinic (*Wiener klinische Wochenschrift,* No. 35, 1906) which is based on the clinical course and subsequent autopsy findings in a considerable number of cases. Taking up first the question of alcoholism as an etiological factor in the production of a cirrhosis, statistics are presented which apparently controvert the generally accepted notion regarding this matter; for among several hundred autopsies hepatic cirrhosis was found about as often in nonalcoholic as in alcoholic subjects. The writer is therefore inclined to support the contention of Klopstock and others, that alcohol does not furnish the direct cause, but rather a predisposition to the development of a cirrhosis.

Another class of cases to which Jagic calls attention includes those in which cirrhosis is present although the patient is not addicted to the use of alcohol, but where the symptoms due to tuberculous infection dominate the clinical picture. Animal experiments have demonstrated the possibility of producing a cirrhotic liver by infection with tubercle bacilli, and in view of this fact it seems reasonable to suppose that in the cases referred to by the writer the chronic tuberculous process was instrumental in producing the changes in the liver. It is quite likely that the primary cause of the cirrhotic process is a direct injury to the liver cells by a toxin derived from the tubercle bacilli.

There is no doubt that hepatic cirrhosis may be due to any one of a number of etiological factors. In addition to chronic alcoholism and tuberculosis, syphilis has been shown to be, and typhoid and cholera are claimed to be, causes in the production of this pathological lesion. The fact that tuberculosis may form the basis of a cirrhotic process in the liver constitutes an important addition to our knowledge of this disease and serves to explain many cases in which neither alcoholism nor syphilis could with certainty be regarded as an etiological factor.

The Bacterial Content of Milk and the Infantile Death Rate.

It is generally believed that the presence of bacteria in milk has a decided effect upon the health of young children. In fact, statistics bearing on this point would seem to show clearly enough that the infantile mortality rises with the presence of a large number of bacteria in milk and falls when these are comparatively few in number. The Health Board of Rochester, N. Y., has been particularly active for many years in its efforts to guard the health of the very young by carefully supervising the milk supply of the city. In the *Archives of Pediatrics* for September is an account by Dr. George W. Goler, Health Officer of Rochester, of the results of such efforts. The results of two five-year periods are considered, beginning with 1895. For the first four years of the first period, says Dr. Goler, milk and dirt were pasteurized together and the mixture was fed to children who were brought to the milk stations. In the last year of that period it was realized that it was better to keep dirt out of the milk and to sterilize the utensils. In the second period, beginning with 1900, over 5,000 samples of milk were examined annually for nutritive value, a larger number of stables and dairies supplying the city were included in the work of inspection, and the number of bacterial estimations of milk was gradually increased, until now more than one thousand are made each year. There were more deaths of children under five years in Rochester during the first period than in the second, notwithstanding an increase in population and the annexation of new territory to the city in the latter. During the second period the infantile death rate appeared to bear a close relation to the average number of bacteria per cubic centimeter found in the city milk supply. Dr. Goler and the Health Board of Rochester are advocates of, and carry into practice, cleanliness in the stable and dairy, and icing and sterilizing of the cans, and not of the milk, in handling the municipal supply. The system has certainly had excellent results. Perhaps, taking into consideration the evident intimate relation between bacteria in milk and infantile mortality, it might be advisable to establish if possible a uniform bacterial standard for milk. This has been suggested by many authorities, and, although there are immense difficulties in the way, in time a means may be found to bring about a satisfactory bacterial standard for milk.

The Follicles in the Appendix.

Considerable attention has been accorded to the follicles in the appendix, and it has been found that in some cases the number is comparatively small, while in others the entire mucous membrane is thickly studded with them. It has, therefore, become customary to regard the appendix as a lymphatic organ analogous to the tonsils and its inflammatory disturbances similar to the anginas. This has resulted in excluding the appendix when considering the diseases of the remainder of the intestinal tract and placing it in a class practically by itself. How far this is justified is discussed in a recent article by Hansemann, noted in the *Wiener klinische Wochenschrift,* No. 32, 1906. Follicles, no matter where situated, he holds, act as filters, whether they are in the bronchi, the lungs, or the intestines. Typhoid infection and tuberculosis become localized in the follicles, and it is also claimed, though this is less well known, that infectious diseases of various kinds, scarlet fever, diphtheria, influenza, pneumonia, sepsis, etc., are accompanied by a swelling of the follicles in the intestines, and that this must be looked upon as part of the disease process. This also applies to the appendix, although this part is not particularly predisposed to attack aside from mechanical causes. The follicles undoubtedly play an important rôle in the general pathological picture, but by no means represent the only factor. Hansemann believes, therefore, that the appendical inflammations should not be placed on the same level with ordinary tonsillitis, but considered as a different morbid process.

News of the Week.

The Harvey Society Lectures.—The second lecture in this course will be delivered at the New York Academy of Medicine on Saturday evening, November 3, at 8:30, by Prof. C. A. Herter. The subject of the lecture will be: "The Common Bacterial Infections of the Digestive Tract and the Intoxications Arising from Them."

Luncheons for School Children.—An excellent project has been put in operation in five of the public schools of the lower east side, whereby the

younger children are being supplied with luncheons each day. The luncheon consists of crackers and milk, and is distributed at 10:30 o'clock in the morning or at 2 o'clock in the afternoon. Each child is charged 1 cent for the meal. The Board of Education refused to furnish luncheons to pupils last April, after one of its committees had investigated a statement made by a society that 70,000 children were attending school without breakfast. The committee found that the statement was untrue, but that many children were not receiving proper nourishment.

A Committee to Investigate Human Heredity.—A committee of scientists and educators has been appointed by the Assistant Secretary of Agriculture for the purpose of investigating the practical application of the principles of heredity in relation to the welfare of the human race. The investigation is the outcome of work done in the Minnesota experiment station on the subject of heredity in plant and animal economics.

Illinois State Board of Public Charities.—At the meeting of this body, held October 18 and 19, 1906, the following committees were appointed: State Care, Including New Institutions, Miss Lathrop, Dr. George W. Webster, Dr. Evans, Dr. Churchill, and Mrs. Bourland. Medical Administration and Uniform Records, Internes: Dr. McAnally, Dr. Podstata, Dr. Wilhite, Dr. Davis. Hydrotherapy and Industrial Reeducation and Recreation: Dr. Podstata, Dr. McAnally, Dr. Carriel, Dr. Sanger. State Psychopathic Institute: Dr. Green, Dr. Podstata, Dr. W. E. Taylor. Improvement of Buildings and Grounds and Equipment: Dr. Emil G. Hirsch, Dr. Zimmerman, Dr. W. E. Taylor. Problem of the Feeble-Minded: Mrs. Bourland, Dr. C. B. Taylor. System of Charity Administration, Dr. Hirsch, Miss Lathrop, Dr. McAnally, Mrs. Bourland. Uniform Grades, Rules, Salaries and Nomenclature: Mr. Moulton, Dr. Athon, Dr. Podstata, Dr. W. E. Taylor. Local Business Administration: Dr. Hirsch, Dr. Green, Dr. W. E. Taylor. Special Committee on Joliet Prison: Dr. Hirsch, Dr. Webster, Mr. Zimmerman.

Patent Medicines in England.—That all the patent medicine fiends are not found in this country is shown by figures recently published regarding the sale of nostrums in England. The patent medicine traffic there amounts to nearly forty millions of packages, representing an outlay of nearly three millions of pounds sterling.

Salicylic Acid as a Food Preservative.—As a result of observations on a "poison squad" of twelve young Government clerks, Dr. Harvey W. Wiley, Chief Chemist of the Department of Agriculture, has announced that while salicylic acid is not as harmful as a food preservative as has been generally supposed, its use for this purpose is reprehensible. Its administration was found to be temporarily stimulating to the digestive organs, but in the course of time the processes of nutrition were interfered with, and a loss of weight was noted in the members of the squad.

Drug Consumption During the Japanese War.—If estimates recently published by *Red Cross Notes* are correct, the government physicians of Japan are far from being therapeutic nihilists. It is stated that quite early in the war upward of 100,000 ounces of quinine were demanded, and stocks of bismuth subnitrate and sodium salicylate were exhausted. Fifty thousand large cases of medical supplies were shipped from Japan at one time. The demands for adhesive plaster, gauze, cotton, and other surgical dressings were enormous, and supplies difficult to secure. Two million pills a day were supplied by the army's tablet and pill works in Tokio, Japan. The Government of Japan purchased all of the available stock of beechwood creosote, which was made into pills, and each soldier was required to take one a day to prevent dysentery. Each soldier carried a tin containing 90 pills and they were labeled "Russian Expedition Pills." The Government of Japan at one time purchased one hundred thousand pounds each of carbolic acid and corrosive sublimate.

Suit Against Surgeons.—Two Cincinnati surgeons are defendants in a suit for $10,000 damages entered by an individual who was engaged to furnish a certain amount of epidermis to be used in a case that required skin grafting. The plaintiff alleges that he agreed that a strip of skin one inch by six should be taken from his leg, but that while he was under the influence of an anesthetic skin was cut from both legs to the extent of forty-two square inches.

Examinations for Rabies at the Board of Health Laboratories.—In view of the fact that there has been a considerable amount of rabies in New York and vicinity during the past year, it is of interest to record the efficiency and promptness with which the Health Department staff is prepared to deal with suspected cases of the disease. In a recent instance several persons were bitten by a supposedly rabid dog at about ten A. M. in Harlem. By one o'clock one of the patients arrived at the rabies laboratory of the Health Department, foot of East 16th street. At once the police were notified to hold the dog, and a man was sent after its body. By four o'clock the body had reached the laboratory, and at half past four the diagnosis of rabies was positively established by means of the identification of Negri bodies in the cerebellum. By five o'clock the police had notified all the persons bitten of this fact, and advised that the Pasteur treatment be taken at the Health Department Station. Before the day was over one patient had already begun the treatment.

Diphtheria in Worcester, Mass.—A diphtheria epidemic of unusual severity is reported from Worcester, and 300 cases are said to have been recorded since August 1.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations November 17, 1906, for the following positions: Physician, Sixth Grade, State Hospitals and Institutions, $900 and maintenance; Superintendent of Nurses, Erie County Hospital, $1,200 and maintenance; Trained Nurse, State Institutions, $420 and maintenance. The Commission has been unable to secure a sufficient number of eligibles to fill the vacancies in the service in the positions of physicians and trained nurse, and qualified applicants have an excellent chance for appointment. The last day for filing applications for these positions is November 12. Full information and application forms for any of these examinations may be obtained by addressing Mr. Charles S. Fowler, Chief Examiner of the Commission, at Albany.

Gift to Somerset Hospital.—The Somerset Hospital of Somerville, N. J., has received the sum of $15,000 as an expression of the gratitude of a wealthy resident of Princeton for services rendered by the hospital physicians and attendants to a friend

who was injured in an automobile accident and taken to the institution.

Hospital Bequests.—By the will of the late Adolph Loeb, $500 was bequeathed to the Michael Reese Hospital, and $250 to the Alexian Brothers' Hospital.

Philadelphia Medical Club.—On October 19, a reception was tendered Drs. George McClellan and Edward Anthony Spitzka, recently elected professors of descriptive and applied anatomy in Jefferson Medical College.

Dr. Casey A. Wood has been elected Professor of Ophthalmology and head of the Ophthalmological Department of Northwestern University Medical School, with a service in Wesley Hospital.

Dr. Frank Allport was recently made Professor of Otology in the Northwestern University Medical School, a position which was vacated through the resignation of Dr. Henry Gradle.

Dr. Arthur R. Reynolds, who was formerly Health Commissioner of the city of Chicago, has resumed practice in that city.

Retirement of Dr. John C. Warren.—On October 16, the sixtieth anniversary of the first public administration of ether, Dr. John C. Warren, in addressing the medical men assembled in the Massachusetts General Hospital for the purpose of commemorating the first operation under ether, which was performed by Dr. John C. Warren, the grandfather of the speaker, announced his own retirement from the surgical staff of the institution, which he had served for thirty-five years.

Professor Pierre Janet of the Medical Faculty of Paris began last week, in Boston, a course of fifteen lectures on Hysteria. The lectures are open to all physicians and to teachers of psychology without charge. They are being given in the Administration Building of the new Harvard Medical School group at 8 o'clock on Mondays, Wednesdays, and Thursdays.

Resignation of Dr. Carlos F. MacDonald.—At a meeting of the faculty of the University and Bellevue Hospital Medical College held on October 8 the resignation of Dr. Carlos F. MacDonald as Professor of Mental Diseases and Mental Jurisprudence was accepted, and the Advisory Board recommended to the Council of the New York University that Dr. MacDonald be made Emeritus Professor of the same subjects.

Vermont State Medical Society.—At the ninety-third annual meeting, held in Barre, Vt., on October 12, officers were elected as follows: *President,* Dr. D. C. Hawley of Burlington; *Vice-President,* Dr. C. W. Strobel of Rutland; *Secretary,* Dr. George H. Goreham of Bellows Falls; *Treasurer,* Dr. P. H. Stone of Burlington; *Auditor,* Dr. J. H. Blodgett of Saxton's River.

Officers of the Chicago Surgical Society.—At the recent annual meeting of this society the following officers were elected for the year 1906-7: *President,* Dr. D. W. Graham; *Vice-President,* Dr. Jacob Frank; *Secretary,* Dr. William Hessert; *Treasurer,* Dr. F. A. Besley; *Council,* Drs. E. W. Andrews, D. A. K. Steele, and A. E. Halstead; *Representative in the Council of the Chicago Medical Society,* Dr. S. C. Plummer.

Officers of Chicago Gynecological Society.—The annual meeting of this society was recently held, at which the following officers were elected for the ensuing year: *President,* Dr. J. C. Hoag; *First Vice-President,* Dr. Joseph B. De Lee; *Second Vice-President,* Dr. Rudolph W. Holmes; *Secretary,* Dr. Henry F. Lewis; *Treasurer,* Dr. Charles B. Reed; *Pathologist,* Dr. George Schmauch; *Editor,* Dr. Frank W. Lynch.

Sanitary Officers of New York State.—The sixth annual conference of this body was held in Syracuse on October 24, 25 and 26, under the direction of State Commissioner of Health Eugene H. Porter. Among the subjects discussed were sanitation and politics, sanitation at summer resorts, public water supplies and their purification, meat inspection, the value of the sanatoriums in the anti-tuberculosis movement, etc. In his address Dr. Porter pointed out the necessity for more liberal appropriations for the work of the department. Pennsylvania last year appropriated $350,000 for its health department, whereas in this State last winter only $75,000 was allowed for this purpose.

The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The sixth annual meeting of this association will be held in the New Haven Medical Association Rooms, 962 Chapel street, New Haven, Conn., at half past two P. M., November 8, 1906. The president is Dr. Max Mailhouse of New Haven, and the Secretary, Dr. J. W. Wherry of Davisville, N. Y.

Mississippi Valley Medical Association.—The thirty-second annual meeting of the Mississippi Valley Medical Association will be held at Hot Springs, Ark., on November 6, 7, and 8, under the presidency of Dr. J. H. Carstens of Detroit. The secretary is Dr. Henry Enos Tuley of Louisville, Ky. Dr. Frank P. Norbury will deliver the address in Medicine, taking as his subject "Clinical Psychology." The address in Surgery will be delivered by Dr. Florus F. Lawrence, his subject being "Surgical Principles and Theories."

Stafford County (N. H.) District Medical Society.—This body held its ninety-ninth annual meeting at Dover on October 17, and elected the following as officers: *President,* Dr. P. H. Greeley of Farmington; *Vice-President,* Dr. L. L. Stokes of Rochester; *Secretary,* Dr. L. W. Flanders of Dover; *Treasurer,* Dr. A. N. Smith of Dover.

Cheshire County (N. H.) Medical Association.—At the annual meeting of the society held on October 9 at Keene the following officers were elected: *President,* Dr. John D. Proctor; *Vice-President,* Dr. A. H. Childs of Dublin; *Secretary, and Treasurer,* Dr. E. G. Dearborn of Keene.

New York and New England Association of Railway Surgeons.—This society will hold its sixteenth annual meeting at the New York Academy of Medicine Wednesday and Thursday, November 14 and 15, 1906. The president is Dr. J. P. Creveling of Auburn, N. Y., and the secretary, Dr. Geo. Chaffee, 338 47th street, Brooklyn, N. Y.

In Memoriam.—Dr. A. Martin Pierce of New Bedford, Massachusetts, died November sixth, nineteen hundred and five. The memory of the skillful and beloved physician and faithful friend is cherished, not by his friends and patients only, but by the whole community in which he lived.

Obituary Notes.—Dr. BERNHARDT FINCKE of Brooklyn died on October 21. He was born in Germany eighty-five years ago, and had practised medicine in Brooklyn for fifty years. He was a member of the American Institute of Homeopathy, and at one time was President of the International Hahnemannian Union.

Dr. Charles P. Russell of Utica died of pneumonia on October 26 at the age of fifty-eight years. Dr. Russell was a native of Utica, and had specialized in diseases of the skin. His medical education was gained in Ann Arbor Medical College, Bellevue Hospital Medical College, and in Vienna and Edinburgh.

Dr. T. S. Foster of Laconia, N. H., died on October 25 at the age of seventy-eight years. He was born in Richmond, Me., and was graduated from Bowdoin College in 1862. After serving as a surgeon in the Civil War he began practice in Laconia in 1865, and continued in active work until two years ago.

Dr. William Fuqua of Jonesville, Tenn., died on October 20 at the age of seventy-eight years. He was graduated from the Richmond Medical College and served in the Confederate Army as surgeon.

Dr. W. E. Todd of Jackson, Miss., died on October 17 at the age of forty-nine years. He was graduated from the Bellevue Hospital Medical College in 1877, and practised for some years at Leota Landing and other places along the river. In 1887 he removed to Jackson and had practised there since that time.

Dr. C. Weschke of New Ulm, Minn., died on October 12 at the age of seventy-five years. He received his medical education in Germany, but came to this country about fifty years ago. He was one of the earliest settlers in New Ulm, and had held many official positions in the city.

Dr. William H. Carothers of Melrose, Mass., died of pulmonary hemorrhage on October 23 at the age of fifty-two years. He was a graduate of Jefferson Medical College, and had practised in Melrose for about eight years.

Correspondence.

HOSPITAL REFORM.

To the Editor of the Medical Record:

Sir:—Dr. Stark's suggestions as to hospital reform are good and timely, but perhaps do not go far enough. I would suggest that all paying patients be allowed to choose their own doctor, and that the hospital be responsible only for care of operating room and nursing. His proposal to open the doors to a selected few amounts, in fact, to a widening of the door, not to an open door.

For the last ten years I have held the position of gynecologist to the Nathan Littauer Hospital, of Gloversville, an institution of about forty-two beds, of which eighteen are in private rooms. There is a medical and surgical staff, the members of which are obligated to attend, free of charge, any person too poor to pay for hospital or medical care, but all patients who pay the hospital for board and nursing, whether in ward or private room, may choose their own physician, and make their own terms with him. The door is wide open; there is no distinction of creed or school; any lawful physician or surgeon may practise or operate in the hospital.

What is the result? Just what it is in private practice; some get more, others less, but all start on an equal footing, with the exception that the members of the staff have the benefit of the prestige that goes with a hospital appointment. The hospital takes its proper place, *i. e.* a hotel for the sick man or woman who can pay, and a haven of refuge for the one who cannot. It is not a medical trust, like some of the hospitals in the larger cities, where it requires a pull to get on the staff, and a pull to stay on. There are plenty of hospitals for the sick poor, but what are needed are hospitals for the sick who are in moderate or very moderate circumstances. The rich can go to private sanatoriums, but the self-respecting workingman, mechanic, clerk, or salaried employee should have a place which will come within his means, and at the same time have the liberty—yes, the right—to retain his family physician; and it is only fair that that physician should not be obliged to lose a patient when he advises him that he needs hospital care.

William C. Wood, M.D.

Gloversville, N. Y.

THE CHOICE OF COW'S MILK.

To the Editor of the Medical Record:

Sir:—The writer has had a somewhat unusual, if not unique, experience in the experimental breeding of dairy cattle of various breeds, and has made a very extended study of the relation of butter fat to solids not fat in milk. He, therefore, feels justified in pointing out one error of statement in the article of Dr. J. Allen Gilbert, on the "Choice of Cow's Milk," in the Medical Record of October 27. As a matter of fact, there is very little difference in the relative proportions of butter fat to solids not fat in the milk of individual cases of the cows of the several breeds. Where there is a notable difference it is a matter rather of individuality of cow than of breeds. A cow's milk that is poor in milk solids simply has a larger proportion of water. The cow has a larger vascular system and more bulky udder. Other things being equal, the more water a cow has in her general system the more economic will be her vital processes; but under pasturing conditions involving much locomotory work, as is usually the case in American pastures, a very large milk flow and the accompanying need of the carrying around of the larger burden of water, is an uneconomic condition.

There can be no question that a diluted milk is of easier digestion than a rich milk, but I have never had the slightest trouble in feeding very rich milks to either calves or babies if it were only diluted sufficiently, and provision made against hardness of congestion by admixture with cereal gruels.

It is not true that under correct treatment Jersey cattle are more subject to tuberculosis than other cattle. On the Island of Jersey the disease is unknown among cattle—a fact in great measure due to the amount of open-air life possible for dairy stock there. Nor are they so much subject to tuberculosis under favorable climatic conditions of environment as are the less nervous but more hardy breeds. They do not, as a breed, have as strong a heart action as some cattle, and hence need more care as to ventilation than some of the more active breeds; but, in the milder regions of the United States, where much out-of-door life is a possibility, or after several generations of adaptation to pasturing life and longer stabling conditions of the north, they become as resistant to germ invasion as other cattle. Other things being equal, the phlegmatic cow succumbs to tuberculosis more easily than the highly-bred, nervous cow. It is not true that the cow that will give the most milk is the most healthful cow. The reverse is the fact. Very large production is surely followed by effects due to weakening of digestion and other functions. Galactorrhea is a disease of cows more frequently seen than in women. The less milk a cow gives the more healthy she will be if fed correctly. The correct ideal in connection with a healthful milk is to be found in the line of moderation as to quality of solids content and as to bulk of flow, and as to adaptation of type of cow to special environment. The Holland cow is the cow for Holland, and for certain flat and rich lands elsewhere. The Jersey is the cow for our southern States, and certain of her types giving a large flow of moderate richness are economically desirable for most of our northern States. The dairy type of the Ayrshire is also all right for rough northern pastures, but there are more good Jerseys suited to a combined economic requirement on the part of the farmer and the consumer than can be found in any other breed. There is a tremendous variation of type and individuality in every breed, and the milk dealer who waters his milk, or sells skim milk, is not the social monster he is represented to be. Diluted milk is a safe food. Nevertheless, young calves and babies need a large proportion of fat in their diet to create force.

J. W. W. Kitchen, M.D.

East Orange, N. J.

OUR LONDON LETTER.

(From Our Special Correspondent.)

TROPICAL SCHOOL—INTERRELATIONSHIP OF DISEASE—"DRUG CURES" FOR INEBRIATES—INDIAN DRUGS AND PHARMACY—OBITUARY.

London, October 12, 1906.

The London School of Tropical Medicine is now in full work. The session began with an opening address by Col. Kenneth Macleod, honorary physician to the King. Since the school was established, seven years ago, over 600 students have attended, including some who intended to devote themselves to practice at home; the others in order to qualify themselves for the Colonial, Indian and Foreign services. Col. Macleod remarked that as tropical countries have peculiar flora and fauna of which no teaching of botany and zoology and no study of the planets and animals of temperate regions can supply a knowledge, so there are

in the tropics manifestations and modifications of diseases as to which the medical schools of this country afford but little information. This analogy, he continued, was by no means strained, for the pathology of to-day was largely concerned with botany and zoology, a fact freely recognized in this school. Through the liberality of the Colonies protozoology and helminthology had been added to the curriculum. The study of vegetable microbes was included in that of the diseases with which they are associated; but, to complete the teaching of parasitology there was another subject which ought to be systematically developed, viz., pathological entomology. Insects, especially blood-suckers, conveyed infective diseases and harbored the transmission of germs. Knowledge of this subject needed to be taught and extended. Recent researches indicated that leprosy is spread by insect agency and cholera; typhoid and plague were probably so transmitted, though additional light on these and cognate subjects was needed. Physiologists and pathologists had been accused of callousness, selfishness, and cruelty in subjecting animals to experiment, but in the investigation of tropical diseases men had themselves in many instances risked health and life. The course of yellow fever was discovered through such volunteers. The study of tropical diseases had greatly contributed to the marvelous progress of the last quarter of a century. During that period there was hardly a subject that had not been illuminated. In malaria, cholera, plague, leprosy, and other diseases, special causes had been demonstrated and indications for prevention and treatment obtained. But, as the circle of knowledge widened, the horizon of ignorance seemed to extend, and much work, such as this school could aid and foster, remained to be accomplished.

The Medical Society of London opened its 134th session on Monday, when Mr. Ballance delivered his inaugural address, taking as subject, "Then and Now in Surgery." His predecessor in the presidency had spoken of the great changes which had taken place within his own experience in the science and practice of medicine. So our new president thought well to give as a corollary an account of the development of surgery in his time. But he also included a sketch of what had gone before, mentioning in that some of the more interesting phases of surgical history. He referred to the question of vivisection, and noted the opposition of Celsus, who said enough could be learned from gladiators, soldiers, and others, who had been wounded. He pointed out that in all ages search after truth of all kinds had met with obstruction, related examples of valuable additions to our knowledge, and thought it might be considered useless before that audience to refer to the necessity of experimenting on animals; said he felt it necessary to say frankly what he held to be true on the subject.

Mr. C. B. Keetley, on Wednesday, addressed the Post-Graduate students at the West London Hospital, of which he is the senior surgeon, on "The Interrelationship of Disease." In considering the subject he said the first essential was to grasp the all-prevailing influence of the microbe, for all disease might be due to it. Even when a man was killed by dissipation or drink, or the consequences of an injury, probably in nine cases out of ten the trouble would not have been fatal but for the intervention of the microbe. Next, they should remember that all microbes have an ancestry. Practically, people got all their diseases directly or indirectly from one another, and it was time to cease blinding themselves by limiting the term infectious to a small class of diseases. A rapid gastric ulcer was as much infectious as any fever; all prophylaxis lay mainly in the sterilization of food; the limitation of intercourse, general cleanliness, and special aseptic and antiseptic treatment, adopted stringently and at the right time against special risks. In the course of his lecture Mr. Keetley also pointed out the economic injuries inflicted by disease and immorality.. A single child affected with tuberculosis was a great strain on its parents or on the philanthropic. Even a great hospital like this was greatly weighed down by numerous cases of the kind; so no wonder parents and families were seriously affected as to their pecuniary resources and social position. Tubercle tended to impoverish and degrade a family, and so led to drink and physical degeneracy. In this matter he had for many years held the views expressed lately by Sir F. Treves and Sir V. Horsley, and he rejoiced that they had spoken out. Publicans were out of all due proportion the victims of tuberculous and other diseases.

At the Society for the Study of Inebriety, on Tuesday, Dr. Mary L. Gordon gave an address on the "Drug Treatment." She said these "drug cures" came to this country between 1892 and 1898, when the Inebriate Acts began to gather patients into retreats. It could not be believed that four weeks would be long enough to transform drink-sodden victims into sober, healthy persons. The chief ingredient of most of the "cures" was strychnine, which was becoming a popular drug, some patients actually regarding it as a substitute for alcohol. The late Dr. Anstie had noticed that this drug occasionally produced symptoms closely allied to some of those due to alcoholic intoxication. Capsicum was also used in these cases, and was one of the most insidiously dangerous of all the drugs commonly employed. The scientific use of drugs was not to be condemned in any disease, but every case should be dealt with according to its symptoms and pathology. In these days so-called drug "treatments" for any derangement were "not good enough."

Last week Sir George Watt, Reporter on Economic Products to the Indian Government, delivered an interesting lecture at the Pharmaceutical Society on the Pharmacy of India, native and European. He remarked that in all the important Indian towns there were chemists' shops, mostly owned by Europeans, worked on European lines by Europeans, and where prescribing, as well as dispensing, went on. Nearly all these chemists were also manufacturers of aerated waters. The native chemist was more a herbalist than chemist, and often combined the trade of a grocer. He sat in a den six or eight feet square and dispensed from jars, bags, boxes, and bottles, medicines, charms, spices, and even poisons, about which questions were never asked, and he knew more about the sufferings and crimes of the villagers than anyone else. He collected plants and herbs from the jungles, or bought them from residents in the jungle. He was an attractive personality from the halo of mystery surrounding him and his knowledge, which was hereditary, his experience being handed down from father to son. Considering the small number of qualified doctors the Indian universities turned out in proportion to the population, it had been calculated that it would take 200 years before Western medical skill could reach the remotest parts of the Empire, and, therefore, he recommended the study of the indigenous drugs and preparations, and the dissemination of the knowledge of their uses. Out of some 1,500 drugs used by the natives, only about a score had been thoroughly investigated. In many instances the knowledge of the natives was of a high order. For example, effectual methods of sterilizing milk had been adopted in India for over 2,000 years. It was the practice in India to boil all milk for two or three hours consecutively, or to boil it repeatedly for shorter periods, never letting it get quite cold. In this way toxic germs were destroyed, and it would be better for Europeans to follow this plan, instead of striving after fresh cream and butter, which, if more palatable, were infinitely more dangerous. The manufacture of condensed, and of desiccated milk, had been practised in India from time immemorial. Cream had to undergo a special fermentation before it could be churned into butter, which was clarified before being used under the name of ghee as a substitute for dripping, and not to spread on bread after European fashion. About thirteen and a half millions sterling was realized in India by the manufacture of ghee, which was mentioned in most of the Hindoo classics. If carefully enclosed in skins, when hot, it would keep for hundreds of years. Mixed with various perfumes, it was the chief ingredient in Eastern unguents and ointments. So highly was it prized that large stocks of it were kept by rich people for their own use and for distribution among their poorer brethren.

It is refreshing to hear of a public body appreciating medical services, so I chronicle the conduct of the visiting committee of the Bucks County Lunatic Asylum, which is inviting subscriptions to a testimonial to mark the public sense of Dr. John Humphry, who, before the close of 1906, will have completed fifty years of service as medical superintendent. His duties are said to "have been performed to the entire satisfaction of the committee, to the advantage of the county, and with uniform kindness and consideration for the unfortunate patients under his charge."

At an inquest the other day it was shown that a poor woman died soon after taking two tablets of "Burkard's Vegetable Compound." A sample packet had been pushed under her door, with the usual assertion that this quack medicine would cure all sorts of maladies, and if one tablet did not relieve another should be taken. The medical evidence was that the woman died from the effects of the tablets. As the packet had the word "poison" on it, the jury seem to have thought that warning enough, and returned a verdict of misadventure. The case is surely one for the criminal law, but so far no steps have been taken to punish the distributors of this "poison."

Dr. James Finlayson, M.D., LL.D., Sc., of Glasgow, physician to the Infirmary, died on Tuesday of apoplexy. He qualified in 1867, and has long held a conspicuous position in medical practice and literature. You will know his "clinical manual." He wrote the Life of Peter Lowe, who founded the Glasgow Faculty of Physicians and Surgeons; also the Life of Dr. R. Watt, the author of the *Bibliotheca*

Britannica. Among other contributions, one on Galen, and many excellent papers of a more strictly professional kind to both the societies and the journals.

Dr. H. W. Syers, physician to the Great Northern Central Hospital, died on Wednesday, at the age of fifty-four, from bloodpoisoning contracted in practice. He was a Cambridge graduate, M.A. 1878, M.D. 1883. He was a member of several of the societies to which he contributed, as well as to the journals. He wrote the "Theory and Practice of Medicine," 1891, and when resident at the Westminster Hospital edited its "Statistical Reports," 1885-6-7. He was the translator of "Morat's Physiology of the Nervous System," and some other works.

Dr. E. Long, J.P. of Dublin, has died at the age of eighty-three. He was the originator of certain preparations of ergot, and long connected with pharmaceutical work. He took the Dublin Hall diploma in 1850, M.R.C.S. 1851. Had been retired many years.

The deaths are announced of the following army medical officers: Lieut. Col. Crombie, aged sixty, late of the Indian service, which he entered in 1872. He had been professor in the Calcutta University, served in Burma 1875, Bengal from 1875, retired in 1898. Subsequently he lectured on tropical diseases at the Middlesex Hospital and at the London Tropical School. He contributed papers on these diseases. He was a member of the Indian Medical Board. Lieut. Col. E. Burroughs, aged fifty-six, entered the Indian service 1875, served in the Afghan war 1878-80, taking part in Maiwand Kandabar, etc., being mentioned in despatches, and receiving medal and clasp. Lieut. Col. F. A. Harris, aged fifty, joined the Royal Army service in 1881, served in Egypt 1882, and received the Khedive's bronze star; then in the S. A. war, for which he held the Queen's medal and four clasps; retired in 1903. Surgeon-General Wm. Williamson, aged eighty-six, served from 1844; retired in 1879. Captain A. T. Pilkington died in India, aged thirty.

OUR PARIS LETTER.

(From Our Special Correspondent.)

CONGRESS OF ALIENISTS AND NEUROLOGISTS—THE BLOOD OF THE INSANE—SENILITY—RESPONSIBILITY IN HYSTERIA—ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE—OTHER CONGRESSES.

PARIS, October 3, 1906.

DURING the first week of August the Sixteenth Congress of French-Speaking Alienists and Neurologists was held in Lille under the presidency of Professor Grasset of Montpellier. Three principal topics were discussed. The first, presented by M. Maurice Dide of Rennes was the study of the blood in the insane considered in regard to cytology, bacteriology, and from the experimental standpoint. The paper was a very long one, comprising an extensive study of the literature, and also many personal observations. The speaker's conclusions were as follows: Taken as a whole, the blood of the insane, in regard to its color, density, coagulation, alkalinity, retraction of the clot, and percentage of urea and mineral constituents, presents no noteworthy features. In mental diseases of a toxic or infectious nature blood cultures are often positive, without yielding any germs that can be considered as being specific. The bacteria obtained from the blood during the afebrile periods may be considered as being saprophytes in the sense that they are not naturally injurious to animals, and that they do not betray their existence by any clinical symptom. These organisms are of considerable importance, because their virulence may be augmented, and they may become important factors in the production of pathological phenomena. Taking up the effect of infections on the psychopathic states it may be said that in general it is salutary, but it is necessary to distinguish carefully between the acute stage of the disease and the period of convalescence. The febrile disorders during their acme exercise a sedative influence on states of agitation, which is due to the inhibition of the nervous centers caused by the toxins abruptly set at liberty. During the period of convalescence, on the contrary, there occurs a state of organic repair following the victorious reaction of the body, which may be very useful to the mentally-disordered patient. If a rational plan of treatment of insanity is ever evolved it will take into consideration these facts.

The second contribution, on the senile brain, was presented by M. A. Léri of Paris. The speaker first showed, by reference to his personal observations, case histories, and numerous original anatomical drawings, what he meant by this term, both from the psychiatrical and neurological standpoints. Old age and senility are not synonymous; old age is the last period of life, and a conventional time, say sixty years, may be set for its beginning. Senility is a pathological state which is not a necessary concomitant of age, may commence much later or much earlier than old age, and may be observed to a very variable degree in the different organs of the same individual, and even in the different parts of the same organ. It is, therefore, justifiable to speak of delayed senility, of premature senility, of general senility, and of localized senility. There is no senile organ, and especially no senile brain, without lesions; these may be macroscopic, or simply microscopic. They consist in atrophy, simple or degenerative, of the parenchymatous elements, in more or less extreme proliferation of the interstitial tissues, and in sclerotic changes in the vessels. These three varieties of the lesion appear to depend, not one on the other, but all three on alterations in the blood, and the sum total of the intoxications, exogenous and endogenous, acquired throughout the entire existence of the individual, and often aggravated at an advanced age, in consequence of certain organic defects. The clinical signs, for the most part, are those of cerebral arteriosclerosis, including vertigo, transitory aphasia, hemiplegia or paraplegia, hesitating gait, spasmodic laughter or weeping, sometimes even epilepsy. As far as the mental state of old persons is concerned, all stages of transition between perfect preservation of intelligence and senile dementia may be observed. The senile weakening of intelligence and simple dementia apparently must be explained by atrophy and degeneration of the cerebral cells and nerve fibers.

The third contribution, which was presented by M. Raoul Leroy of Ville-Evard, dealt with the responsibility of hysterical patients. The speaker considered the subject from the practical standpoint, and divided his essay into two principal parts; the first included a résumé of the criminal or immoral acts of such patients, and the second was devoted to a discussion of their responsibility for their actions. The author took up in order the different types of hysterical mania: lying, theft, homicide, assaults, acid throwing, poisoning, suicide, incendiarism, etc. He concluded that the responsibility varied not only in different individuals, but also in the same patient, according to the circumstances. The first thing to be considered was the patient himself, then the act itself, together with the circumstances which preceded it, accompanied it, or followed it. The conclusion seemed justified that, taking everything into consideration, responsibility was rare among the hysterical.

The next congress will take place in 1907 in Geneva and Lausanne under the presidency of Professor Prévost of Geneva; the subjects to be discussed are: in psychiatry, periodical psychoses; in neurology, the definition and nature of hysteria, and in forensic medicine, medicolegal experts.

The annual congress of the French Association for the Advancement of Science was held at Lyon during the first week of August under the presidency of Professor Lippmann. Professor J. Teisser, who presided over the medical section, in his opening address made a strong appeal to medical students to cultivate habits of close observation. Two very important questions were considered by this section. The first was the actual status of the experimental study of syphilis, and was discussed by M. Joseph Nicolas of Lyon. The corollary to this question was presented by M. A. Manquat of Nice, who spoke on the prophylaxis of syphilis and venereal diseases in its relation to prostitution.

The second question, relating to antituberculous immunization, was discussed by Professor Rappin of Nantes, and M. Fernand Arloing, chief of the bacteriological institute of Lyon. The former insisted strongly on the possibility of securing immunity by antituberculous vaccination, while Arloing presented the results obtained by antitoxic serum therapy.

Among the other interesting matters which were dealt with by the Congressists was the sterilization of drinking waters by ozone, and a discussion on the theory of congenital criminals. The Lyon school opposes the doctrines of the Turin school as presented by Lombroso, and affirms that congenital criminals do not exist. Certain individuals, according to this view, do not resist the temptations of their environment, and are more predisposed than others to become criminals.

The next session of the congress will be held at Reims in 1907 under the presidency of Professor Henrot.

Among the other congresses to be held shortly it is interesting to note the following: The XIX. Congress of the French Surgical Association will be held at Paris from the first to the sixth of October, under the presidency of M. Monprofit. The principal topics to be discussed are the surgery of the large nerve trunks, ectopy of the testicle and its complications, and the means of operative access to the thorax.

At Marseilles, from October 7 to 13, the National Congress of Hygiene and Public Health will be held. The object of this congress is to encourage the dissemination of popular knowledge in sanitary matters, and the application of the methods and principles demanded by modern science. Later in the month the first International Con-

gress of Alimentary Hygiene, of which M. H. Ricard is president, will be held under the patronage of the president of the Republic. Finally, the Congress of Urology will be held early in October in Paris, under the direction of Professor Guyon. The principal topic will be the etiology and treatment of hydronephrosis.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

MANILA MEDICAL SOCIETY—TREMATODE INFECTION—CHOLERA OUTBREAKS—FAILURE OF THE CHOLERA SERUM—THE PLAGUE—BERIBERI—TYPHOID FEVER.

MANILA, P. I., September 19, 1906.

MONDAY evening, September 3, in the library of the Bureau of Science, the Manila Medical Society held its first meeting since the recess which was taken during the hot season. Dr. W. E. Musgrave, pathologist, read a paper upon "Trematode Infection in Man in the Philippine Islands." Dr. Musgrave has already observed thirty-seven cases of *Paragonimus westermanii* infection, and believes it is much more common in the Philippine Islands than has heretofore been thought to have been the case. The majority of the cases were observed at autopsy, it being rather the exception that a diagnosis was made during life. The number of times that he has encountered this disease at autopsies of cases, which had been diagnosed as tubercle of the lungs, leads him to infer that many of the deaths that have heretofore been reported as due to tuberculosis, may in reality have been caused by the lesions produced by this trematode. A noteworthy feature about the cases was that in a number of instances the trematodes were not confined to the lungs, but were found in various organs of the body, and particularly in the brain. He said that, upon making sections of the lungs, a large number of burrows were usually found to be scattered throughout the organ. He said that in the tunnels a material, which is similar to that of the sputum found in the living cases, is encountered. The walls between the burrows frequently break down, thus making large cavities. Owing to the fact that this disease has only recently been observed in the Philippines, and most of those present at the meeting not having seen any cases, there were not many persons present who were in position to discuss the paper.

During the early part of the month cholera was reported near Camp Vickars, Mindanao, among the Moros. About September 9 the disease was reported to be present in Dumangas, in the province of Iloilo. The outbreak of cholera in these two widely-separated places occasioned considerable surprise. The outbreak near Camp Vickars occurred about fifteen miles from the sea coast. In view of the fact that the Moros, ordinarily, are not likely to come in contact with other nationalities, and since they do not trade with Luzon, and scarcely ever visit it, it is not understood how the infection could have started among them. The outbreak at Dumangas, in the province of Iloilo, was equally puzzling, because, so far as could be learned, it occurred among persons who had not been away from Dumangas for several weeks preceding, and they were of a class that are considered to be too poor to purchase food stuffs which are likely to be imported. The town of Dumangas, itself, is in the interior, and has no direct communication with the island of Luzon, the latter island being the only one known to have been infected up to the time of this outbreak. It may be possible, later on, to trace the source of this infection, but at the present time the belief, which has been quite common among a number of medical men, that cholera is indigenous in the Philippines, certainly seems to have gathered additional force by the two outbreaks referred to. The spread of the cholera from Dumangas to Buena Vista, to the port of Iloilo and its various barrios, has not been difficult to trace. So far there has been a total of 108 deaths reported in Iloilo province; the number of cases is not positively known. In the Moro province there have been nine cases.

The outbreak of the disease in these two provinces is particularly discouraging at the present time, because it was hoped that cholera could be entirely eradicated from the Philippines in the near future. This hope was very much strengthened by the rapid decrease in the number of cholera cases which occurred in Manila and the island of Luzon, generally. For the first two weeks of September there were 46 cases with 40 deaths in Manila, and for the provinces 334 cases with 301 deaths, as against the last two weeks of August with 74 cases and 67 deaths for Manila, and 576 cases with 499 deaths in the provinces.

Dr. Denier, bacteriologist of the Pasteur Institute of Saigon, who has been in Manila for the purpose of testing the value of his curative serum in cases of cholera, returned to Saigon. He expressed himself as not feeling very much encouraged over the results that he obtained with his serum. While the serum which he made from live cholera organisms gave better results than that which he made from the dead organisms, his mortality record, even with the former, was not particularly favorable. Deducting those cases which actually arrived at the cholera hospital in a moribund condition, he treated in all seventeen cases, of which twelve died, which gives a mortality of about 74 per cent., which is not as good as the results obtained by the ordinary medical treatment at this stage of the epidemic.

Owing to the great improvement in the plague situation at Amoy, the strict quarantine regulations which have been enforced by the Philippines against that port have been considerably modified, and the same will go into effect October first. Vessels from Amoy will now only be required to stop at the quarantine station at port of entry in the Philippines, where the necessary disinfection can usually be accomplished in a few hours, after which the vessels are permitted to proceed without further detention. Manila still remains free from plague, no cases having been reported since April 20, 1906. For this reason the most rigid precautions are being taken to prevent its reintroduction into the islands.

The small epidemic of beriberi which broke out among the lepers at the Culion Leper Colony has apparently been arrested. If diet has no effect upon this disease it is, at least, a remarkable coincidence that, after a liberal amount of nitrogen was introduced into the ration, the number of cases immediately became less.

An outbreak of typhoid fever has been reported among the United States troops which are stationed on the island of Gimras. Spanish physicians who have spent most of their lives here, claim that even during Spanish occupation the island of Gimras was noted for its unhealthful character, and that frequent outbreaks of fever occurred, the symptoms of which resembled enteric fever.

Progress of Medical Science.

Boston Medical and Surgical Journal, October 18, 1906.

Fibroma of the Ileum Causing Bowel Obstruction.—J. W. Dewis reports the case of a woman of 64 years who for ten years had had more or less constipation with, during the later portion of the time, vomiting, ravenous appetite, and a bloated feeling. On one occasion, after a very hearty meal, symptoms of acute intestinal obstruction came on, and then subsided, so that it seemed as if the obstruction, whatever it was, had disappeared. The symptoms returned suddenly, however, and she died from shock, no operation having been done. Autopsy showed in the region of the ileocecal valve an intussusception about two inches long, with a round, movable body attached to the lower end. This mass, including an inch or two of ileum above and below the invaginated portion, was removed. The intussusception was easily reduced, and there was no noticeable edema of the bowel. Growing from the wall into the lumen of the bowel, and about four inches above the ileocecal valve was a small oval tumor, dark-brown red in color, and slightly mottled. On section it was dull and fibrous, the center a dull white, with fan-like radiations. Examination proved it to be a small fibroma springing from the submucous layer. The author collates the previously reported cases of benign intestinal tumors, and makes a careful study of them, which cannot be reproduced here.

The Bier Treatment of Infectious and Septic Wounds of the Extremities.—E. A. Codman thus describes the plan followed by him in dispensary practice. When an old patient (one seen the day before) arrives in the morning, his dressing is taken down, the wound is examined, and its condition recorded. A rubber strap two inches wide, and provided with a buckle, is applied about his arm or leg well above the lesion. This is drawn as tight as possible without stopping the pulse. The wound is covered with moist bichloride gauze, and the patient sits down and waits an hour. The part is looked at from time to time, to be sure that the circulation is not too greatly checked. At the end of the hour a moist dressing and splint are applied. The wound is not, as a rule, packed or drained. The same routine is followed each day. After the first few minutes the pain is inconsiderable, and, if pain has been present before, it is usually relieved. Patients not infrequently bring a book or a newspaper to read during the hour. While the tourniquet is on the wound secretes more profusely, usually serum with particles of pus and necrotic tissue. In several cases after the

treatment it was noticed that adjacent pockets had broken into the main one, or on the surface. If slough has presented at the surface of the wound it has been picked out, but, on the whole, delving and probing in the wound have been discouraged. Codman believes that this plan of treatment assists nature in building a barrier about the necrotic focus, and when this barrier has been once formed, assists in removing the focus.

New York Medical Journal, October 20, 1906.

Fatal Scopolamine Poisoning.—The history of the case is given by G. W. Ely. The patient was a married woman of twenty-nine years, with carcinoma of the larynx. Early in the morning she was given a hypodermic injection of one-eighth grain of morphine and one-hundredth grain of scopolamine, the intention being to repeat the doses after the usual manner of administration. Contrary to instructions, she got out of bed, dressed, and went out of doors, returning in half an hour, and lying down. Soon it was noted that she was sleeping, the breathing being stertorous and the face cyanotic. The hospital surgeon was called, and found the patient in coma. The pupils were moderately dilated, but reacted to light; the tongue, mouth, and pharynx were extremely dry; the surface of the body was also dry and pale. The superficial reflexes were abolished. The pulse and respirations were practically normal, but soon the respirations became shallow and less frequent. This latter condition was progressive in spite of the treatment, and the patient finally died from paralysis of respiration about two hours after the administration of the drug. On the two nights previous to the time of death she had had a little cyanosis and difficulty in breathing, but as soon as she assumed the upright position it disappeared. The heart continued to pulsate for at least two minutes after the cessation of respiration, and at the time of the cessation of the respiratory act the heart was in fairly good condition, excepting that the pulse was a little accelerated. The treatment given was: Hypodermics of atropine, strychnine, and the administration of oxygen. At the same time external heat was applied with friction to the surface of the body. While it was not possible to obtain an autopsy, it is certain that death was due to the scopolamine alone, as her organs had been very carefully examined by several physicians and found to be normal.

Gastrointestinal Disturbances Associated with Migraine.—J. A. Lichty refers to a paper previously published by him on this subject. The cases there reported, and those since observed, number 181. Of this number 137 gave a definite history of digestive disturbances between the attacks. The symptoms were definite, such as heaviness after eating, pyrosis, fermentation, and gas, constipation, or diarrhea; in fact, any or all of the symptoms which make the symptom complex of what is ordinarily called indigestion. In 101 of these cases gastric analyses were made. Twenty-five had normal secretion of gastric juice, thirty-two had an excessive secretion (hyperacid), and forty-four had deficient secretion (hypoacid). Many showed the evidences of chronic gastritis and enteritis. A few gave the history and had the clinical evidences of chronic ulceration of the stomach. His statistics show that the stomach contents in the majority of cases are not excessively acid, though the contrary fact has generally been accepted as true. No details of treatment are given. The author commends the use of the bromides and cannabis indica when the removal of reflex and exciting causes does not accomplish the desired results.

Post-Mortem Findings in Gastric Ulcer.—M. R. Barker states that the findings of the greatest importance are those connected with mucous membrane of the pylorus and the pyloric orifice. If the ulcer has been the direct cause of death, the mucosa is swollen and deeply hyperemic, while that of the fundus shows no abnormality. It is not, however, uniform. It is deepest at the orifice and about the ulcers, gradually fading out towards the wider portions of the stomach. Generally but one ulcer is present. Large ulcers indicate a fusion of several small ones. Appearances differ, according to the age of the ulcers. If the ulcer is recent its walls are not elevated, they are soft to the touch, and somewhat ragged in appearance. In the older ulcers the walls are cicatricial tissue, firm and resisting to the touch, and slightly elevated above the surrounding tissues. The microscope shows the wall of the recent ulcer, and also its base infiltrated with round cells, while in the older ulcers a good deal of fibrous tissue is found in the walls. The walls of the gastric ulcer slope towards the center of the ulcer, showing that the deeper structures involved are not so widely involved as the superficial structures, and when these ulcers extend deeply into the tissues they have the appearance of a cone, the base of which is on the surface, with the apex deep in the tissues. In addition to the foregoing post-mortem findings on the mucous membrane of the pylorus, ciatrices are sometimes found, marking the location of the former ulcers which have healed. The muscular coat of the organ is generally unaffected, unless there has been marked pyloric stenosis, which is more or less hypertrophied. Lesions in surrounding tissues are conditioned on the fact of the penetration of the stomach wall by the ulcerous process. The size of the organ, as a whole, is not markedly affected. Local constrictions may be present, due to previous ulcers which have healed. Ulcers involving only the mucous membrane of the stomach heal without forming cicatrices, only the ulcers involving the deeper structures heal with the formation of scars. Hence, these post-mortem findings teach that deep and wide ulcers of the stomach heal, but that in some cases, as in hour-glass contraction, the healing of the ulcer has in no way benefited the patient, as the contracture formed is as great a menace as the disease which produced it. In other cases, distortions of the stomach have been found which have so changed the relations of one part of the stomach to other parts of it, and to the organs about it, that it could not functionate normally. Hence, the conditions caused by the healing of ulcers are sometimes as vicious as the ulcers themselves.

The Radical Mastoid Operation Modified to Allow the Preservation of Normal Hearing.—W. S. Bryant notes that in cases of acute extensive involvement of the temporal bone, and more rarely cases of chronic purulent otitis media, the intactness of the sound-conducting apparatus has been more or less preserved, so that the hearing has been fairly good. It is his aim to preserve this hearing, in spite of radical intervention. The aim is to remove all diseased bone and establish perfect drainage, while at the same time preserving the auditory function of the middle ear. The ligamentous attachment and mucous membrane reduplications of the ossicular system lie between the epitympanum and the atrium, and prevent through drainage, though they allow drainage from both their upper and lower surfaces. To establish this drainage, we make a U-shaped myringotomy to drain the atrium, and open the mastoid antrum to drain the epitympanum. We must also remove all the diseased bone to arrest the progress of the infection and open all the cells of the middle ear system to throw them into one cavity leading to the epitympanum. The outer anterior wall of the antrum should be wholly taken away, except enough to support the annulus with the adjacent membrane tympani. Of course, the suspensory ligament of the malleus must be protected from injury, also the fan-shaped ligament of the incus. By these procedures we are able to drain the upper and back part of the tympanum through the mastoid wound, and the lower anterior part through the meatus without permanent injury to the sound-conducting mechanism. The operative course in one case is described and illustrated.

Journal of the American Medical Association, October 27, 1906.

The Physiology of the Circulation.—J. Erlanger discusses the facts so far ascertained in regard to the physiology and pathology of blood pressure and the path of conduction of impulses between the auricles and ventricles of the heart, and discusses the various methods of determining the systolic and diastolic pressures in man. He gives reasons for considering estimations of both as of clinical and physiological value, and calls attention to the relations of blood pressure to the phenomenon of Cheyne-Stokes respiration, noticing especially the recent work of Eyster, who has shown that, besides the type associated with increased intracranial tension, there is also another form associated with arteriosclerosis, myocarditis, and nephritis. The second part of the paper discusses the question of the path of conduction of impulses from the auricles to the ventricles in the mammalian heart. The discovery of the auriculoventricular bundle of muscular fibers, section of which causes independent action of the auricles and ventricles, is noticed, and the author's method of experimentation on the production of heart block is described. Erlanger also mentions the possibility of heart block occurring from other causes than obstruction of the passage of impulses from auricles to ventricles, and says that a definite answer to the question of what is the cause of heart block in man cannot be given in the present state of our knowledge. All we

are justified in saying is that disease of the auriculoventricular bundle has been found in all cases, now four in number, which have come to autopsy since it has been proved that that bundle forms the only physiological nexus between the auricles and ventricles of the heart.

Chorea.—W. S. Thayer concludes that the occurrence of well-marked febrile symptoms, without rheumatism, in chorea, especially if they are accompanied with undue rapidity or irregularity of the pulse, is at least strongly suggestive evidence of acute endocarditis. It is possible that the fever may be the sign of a deeper lying infection back of the chorea, but there is nothing in his study to settle the question whether chorea represents a secondary infection or a special localization of an infectious agent responsible for essential manifestations of the disease. The study of the circulatory conditions in old patients still remains to be carried out, but Thayer calls attention to the following points of interest thus far developed in his investigation: 1. Of 689 cases of chorea observed at the Johns Hopkins Hospital and Dispensary during one or more attacks, 25.4 per cent. showed evidences of cardiac involvement; such evidence was present in over 50 per cent. of the patients studied in the wards of the hospital. 2. Cardiac involvement occurred with somewhat greater frequency in those cases in which there was a history of acute polyarthritis than where such history was absent. 3. Cardiac involvement was commoner in cases of chorea with frequent recurrences than in those in which there was a history of a single attack. 4. In 110 cases of chorea treated in the wards of the hospital there was fever of a moderate extent in almost every instance. 5. In the large majority of the cases in which high fever was present there was evidence of cardiac involvement. 6. There is good reason to believe that the presence of fever in otherwise uncomplicated chorea is, in a large proportion of cases, associated with a complicating endocarditis.

Cardiac Hypertrophy in Renal Disease.—N. B. Potter reviews the literature and theories of the cardiac hypertrophy in nephritis, which seems to be probably the result of a compensatory increased vascular tension, and this depends largely on the general condition of the patient's nutrition. The recent autopsy records of the New York Hospital, which are quoted, seem, on the whole, to bear out this view. The therapeutic indications deducible from these facts are summarized as follows: "We should, of course, first and always, work against the cause, next favor hypertension, or, at least, not combat it early in the disease; then preserve and save the heart by every known method, particularly by limitation of fluids ingested, as von Noorden has urged; and, finally, keep up the patient's nutrition by every possible means, so that as perfect and permanent a compensation as possible may result."

Medical Specialism.—L. H. Adler, Jr., defends the specialists, and asks would the public health be as well guarded if we trusted entirely to the general practitioner in all possible medical conditions, or could the best interests of medicine be thus conserved? The ideal specialist, in Adler's opinion, is the man who, after a full term of residency in a general hospital, takes up general practice with a definite idea that in the future he will take up some special line which his tastes or the course of events dictates. When possible, an association should be formed with a specialist, and he also believes that at least a year's post-graduate study in the medical centers should be undertaken. Specialism, in his opinion, is a need developed by the times, and he thinks that the apparent antagonism that exists in some quarters could be prevented by more cordial and careful consideration on the part of the specialist of the patient's family physician. Specialism, he thinks, is an advantage to the general practitioner who has the opportunity of reading or hearing the papers and discussions of the specialists. In conclusion, he pleads for due ethical treatment of errors that may be observed. No one is infallible.

Surgical Tuberculosis.—H. B. Gessner points out that practically every organ and region of the body is subject to tuberculous invasion that may demand surgical treatment. The rare tuberculous lesions of the endocardium are beyond the surgeon's reach, as would also be those of the large vessels, did they occur primarily; but apart from these it can hardly be said that there is any other locality where surgical relief of such lesions can be said to be impossible, at least in the future. The diagnosis of surgical tuberculosis by modern methods, exploratory puncture and examination of the fluid by staining, culture, and inoculation, is rendered a matter of only ordinary difficulty. Gessner has found tuberculin a useful aid, but cautions against the use of excessive doses. As regards prognosis, he is optimistic. Without neglecting hygienic measures, he holds that early recognition and proper surgical treatment make the surgical form of tuberculosis as hopeful as any class of lesions with which we are acquainted.

The Lancet, October 13, 1906.

The Prevention of Cancer Regarded as a Practical Question Ripe for Solution.—C. B. Keetley believes that cancer is due to some living organism. He is inclined to think that alcoholic excess, chronic gastritis, old gastric ulcers, and cicatrices predispose to the disease. Anything remedying or preventing these will lessen the occurrence of cancer. He lays down the following rules: (1) Sterilize the food; (2) make sufficient and regular toilet and protection of the nipples, and of the genitalia; (3) Give due care to the mouth and teeth; (4) Carefully destroy the dressings used on discharging malignant ulcerations, and do not allow them to pollute either the hands or underlinen; (5) Cure all nonmalignant sores, and do not allow them to drift on to a chronic stage; (6) Excise early all cancerous and doubtful tumors and ulcers; (7) Abstain from tobacco, alcohol, and from foods which leave waste products, of which the kidneys, the bowels, and the skin cannot easily and thoroughly get rid, and which provoke and sustain the chronic inflammations and ulcers which so often pave the way for cancer. This rule forbids, among many other dietary abuses, the excess of meat eating; (8) Avoid physical familiarity with all as far as possible. We get the majority of our diseases either directly or indirectly from one another and the more exclusive our intercourse, whether innocent or otherwise, the safer we are. Even those who will deny that this is true of cancer may acknowledge that it applies to some of those chronic diseases which prepare the ground for cancer; (9) Housekeepers should be careful as to the service, as well as to the cooking of food.

Contribution to the Pathology of Chorea.—This subject is considered by F. J. Poynton and G. M. Holmes, whose investigations add three more cases to the recorded observations of the presence of a diplococcus in the pia mater of patients who have died from brain trouble while suffering from chorea. The organism has been demonstrated in the brains in these cases in the perivascular spaces and connective tissue. They have also studied the changes affecting the connective and vascular tissues and those which occur in the nervous tissues in chorea, and, finally, they have demonstrated that in a case of chorea occurring during the first pregnancy, lesions were present similar to those found in the rheumatism cases. The histories of the three brain cases, above referred to, are given in full. The authors believe that chorea is caused by toxins, which penetrate the brain by direct bacterial invasion. They do not consider themselves in a position to state what portion of the nervous system yields the predominant symptoms of chorea. It has been assumed to be the higher motor centers in the cerebral cortex. As regards chorea and rheumatism, they state that the cause of the former is to be in the action of bacterial poisons on the brain. Further, the available evidence points to the occurrence of a local infection to which the widespread changes in the nervous system are due. Finally, they believe that this infection is of a rheumatic nature. As to the relation between chorea and pregnancy, two questions arise; first, whether this chorea is a rheumatic chorea intensified by the condition, and secondly, a far wider one concerned with the influence of pregnancy and the puerperal state upon the rheumatic infection. Chorea in pregnancy is, in the opinion of the authors, probably a rheumatic chorea.

British Medical Journal, October 13, 1906.

Mesenteric Cyst Causing Intestinal Obstruction.—F. Colby reports the case of a boy of twelve years with acute intestinal obstruction. Abdominal incision revealed a cyst the size of an orange, situated between the layers of the mesentery as they separate to enclose the bowel, and the bowel itself was compressed like a piece of ribbon over the circumference of the cyst wall. The cyst (which contained cholesterine) was shelled out, and the patient made a perfect recovery.

Bone Formations in the Heart.—J. A. Topham refers to the case of a man of seventy-one years with a dilated heart, who died in an attack of syncope. Autopsy showed the heart large and flabby, the muscle undergoing fatty degeneration. It weighed 18¼ ounces. Some masses, hard and stony to the touch, lay trans-

versely across the organ in the line of the auriculo-ventricular groove. On cutting down to these they were found to be flattened plates of bone, embedded in the cardiac tissue, having a firm fibrous covering which proved very difficult to detach. One, the larger, 4 inches in length and 1 inch across throughout the greater part of its length, but widening to 2 inches at its right extremity, lay with its flat surface looking forwards, embedded in the wall of the heart, about half an inch from the surface, with its long axis parallel to the line of the right auriculo-ventricular groove. In a similar position on the left side were two smaller fragments, flattened, but irregular in outline, and each about 1 inch by 1½ inches at their greatest diameters. The aorta and orifices of the coronary arteries had a healthy appearance.

Pneumococcal Infection During Early Life.—H. Ashby's contribution forms the opening discussion in a consideration of this topic at the recent Toronto meeting of the British Medical Association. He says we may assume that the pneumococcus of Fraenkel is the specific agent which, under suitable conditions of soil, is the inciter of a croupous or lobar pneumonia, and that, in association with other organisms, it plays the chief rôle in bronchopneumonia and in the pneumonias which occur as sequelæ of the zymotic diseases. We may assume, too, that a pneumonic infection is not a local disease of the lungs, but the cocci enter the blood stream, multiply there, and are carried to distant organs. For a pneumonic infection to produce pathological consequences a sufficient number of organisms must infect; these must possess, or quickly attain, high potency, and finally, there must be an enfeebled resistance of the body cells of the individual. In healthy people, the probable breeding place is the nasopharynx and its vicinity. While pneumococci are associated with streptococci in healthy nasopharynges, they are not found in the blood stream except in pathological conditions. A bronchopneumonic occurring in infants or young children, especially when associated with rickets, terminates by lysis rather than by crisis, is protracted in its course, and is apt to relapse. A pneumococcic infection involving the lungs in the first instance is more apt to spread to parts locally in contact (pleurisy, pericardium) than to distant parts by way of the blood stream. Associated infections of the lung and peritoneum are not uncommon. Acute pneumococcal peritonitis in infants under one year, proving quickly fatal and without any associated pneumonia, is not uncommon. It is uncertain to what extent gastroenteritis is caused by this organism. The jaundice of pneumonia is probably hematogenous. A lobar pneumonia, in association with acute nephritis, is not rare. Double otitis with pneumonia is frequent. The organism frequently gives rise to a meningitis. Ashby declares that as yet we know but very little about mixed infections, the nature of the toxins thus formed, and the question of immunity.

Rheumatism in Children.—A. D. Blackader notes that the purely arthritic manifestations of rheumatism in children may be wanting, and the disease appear as tonsillitis, chorea, pleurisy, muscular pain, exudative erythema, and epistaxis. Special attention is paid in the paper to the question of tonsilitis. Authorities differ as to the exact type associated with rheumatism. Anemia is a constant manifestation of the rheumatic infection. Other manifestations are pleurisy, severe and persistent headaches, and enuresis, but the most important at every period of life is the development of "carditis," and many writers have emphasized the fact that during childhood the cardiac tissues are particularly susceptible to the rheumatic poison. Statistics from English hospitals show that in about 80 per cent. of those attacked in the first decade, and 60 per cent. in the second decade of life, the heart is to a greater or less extent permanently crippled. In the hospitals on the Continent the percentage is very similar, but the severe grade of carditis described by English writers, leading to rapid dilatation of the heart from the action of the toxin, is, in the author's experience, rarely seen. On account of this liability, any manifestations of a rheumatic infection demand rest for the child in bed, and frequent physical examination of the cardiac area. It is not to be forgotten that an endocarditis may develop with little alteration in pulse and temperature. The endocarditis of childhood with care, however, presents a distinctly better prognosis than does a similar lesion in the adult, and not a few cases of soft systolic murmur, in which, so far as can be judged, dilatation and anemia as causes have been excluded, will in children pass entirely away with time. On the other hand, we must bear in mind that in a few cases hearts which, from the absence of, or on account of the disappearance of, physical signs, have apparently escaped damage, may with passing years present undoubted signs of organic trouble.

Berliner klinische Wochenschrift, October 8, 1906.

The Hot-Air Treatment of Emphysema, Chronic Bronchitis, and Bronchial Asthma.—Cohn-Kindborg investigated the effect on the lungs of the application of hot air to the thorax, and concludes that, contrary to the belief expressed by some observers, the procedure lessens congestion of the lung, instead of causing hyperemia. An apparatus devised by the author for applying hot air in this way is described and figured. The author made use of this in twelve cases of emphysema with chronic bronchitis, and in six cases of bronchial asthma. Most of these were of unusual severity, yet the most satisfactory results were obtained in nearly every instance. The temperature in the interior of the apparatus ranged from 65°C. to 85°C., which latter point appeared to be the upper limit which it seemed desirable to employ. The improvement resulting included the subjective amelioration of the dyspnea, and also diminution in cough and expectoration, better rest at night, and increase in the vital capacity of the lung.

Barberio's Semen Reaction.—Levinson reports on investigations undertaken to determine the reliability of the picric acid test for semen described by Barberio. The reaction consists in the formation of characteristic acicular yellow crystals somewhat resembling Charcot-Leyden crystals when saturated aqueous or alcoholic picric acid solution is added to semen, or a concentrated watery extract of it. The author found that the reaction was positive in all cases in which spermatozoa were present, and that it was sometimes, though not always, positive in cases of azoospermia. A large number of other fluids and secretions, which in medicolegal work might be of importance in this connection, were also tested, but none of them gave a positive result. It also appears that the semen of none of the commoner animals or fish gives the reaction, and the author believes that further investigation will prove it to be a valuable addition to forensic medicine.

Münchener medizinische Wochenschrift, October 9, 1906.

The Manufacture of Catgut.—Kuhn, in describing the various procedures through which the raw material is put in the manufacture of catgut, points out in how many respects improvements are urgently demanded. What is used for surgical purposes consists of defective material which is not considered sufficiently good for the production of violin strings. The raw material is handled under the most unsanitary and, from the surgical standpoint, dangerous conditions, no care being taken to determine the freedom from disease of the animals from which it is derived. A very important drawback lies in the manner in which the larger sizes are prepared by twisting together several of the smaller strands of gut, whereby any impurities on these are deeply buried in the center of the thread where their sterilization is exceedingly difficult. The author proposes that catgut for surgical use should be prepared only from officially inspected slaughter animals, that all manipulations in the process of cleansing and preparing the gut should be carried out by properly trained individuals under aseptic precautions, and that the components of larger strands should be rendered aseptic before being twisted together.

Primary Ether Anesthesia.—Sudeck has modified his technique of operating under primary ether anesthesia as described by him some years ago. At that time he caused the patient to inhale as deeply and rapidly as possible the concentrated vapor from a mask on which 30-50 gm. of ether had been poured at once. Sudeck now considers this method unnecessarily heroic, and states that he has been able to obtain equally good results by the drop method. An open mask is placed in position, and the patient is allowed to draw a few breaths through it before the administration of the anesthetic is begun. At first one drop is allowed to fall every two or three breaths, gradually the rate of the flow is increased to a drop with every breath, and, as toleration is established, rapid dropping is begun. The patient's sensibility is tested by using alternately the point and head of a pin, and causing him to specify sharp or blunt. When the answers become incorrect the time to operate has arrived. Sudeck states that when properly carried out failure is encountered only very rarely. When the method is successful the patient is still sufficiently conscious at the beginning of the operation to obey the commands of the operator, and, if he wishes, to observe all the steps of the operation.

He experiences no pain, but only tactile sensations, and immediately on the termination of the anesthesia is able to arise without any disagreeable sequelæ.

Natural Disinfection of the Intestine.—Moro points out the inadequacy and undesirability of attempts at intestinal disinfection by the administration of antiseptic drugs, or even of calomel, and emphasizes the desirability of devising some method which should be in harmony with the natural defensive forces of the organism. The stool of the breast-fed infant presents as its predominating bacterial component the *Bacillus bifidus* of Tissier and the extreme activity and great vitality of this organism enable it rapidly to overgrow all other bacteria that may be present in the intestine. The author has found that a most efficient means of ridding the gut, both of children and of adults, of undesirable bacterial guests consists in the administration of human milk. In a surprisingly short time the *Bacillus bifidus* will have overgrown all of its competitors. While at present the method is difficult of application on account of the scarcity of breast milk, it seems likely that it will be possible to discover the particular substance in this fluid which is so advantageous to the organism in question, and in that case the problem might be simplified.

Deutsche medizinische Wochenschrift, October 11, 1906.

The Indications in the Management of Labor in Cases of Contracted Pelvis.—Pfannenstiel believes that pubiotomy has come to stay, and that in hospital obstetrics, at least, it will in future be a routine procedure. For private practice the operation is less well adapted, however. The use of forceps, he says, is least satisfactory in the flat pelvis, but gives better results in the generally contracted pelvis. Version, on the other hand, gives less good results in the generally contracted flat pelvis, and is most effective in the flat pelvis. It is particularly suitable for multiparas with flat pelves, because under these conditions the soft parts are easily dilatable. Pubiotomy must be considered in those cases in which the disproportion is so great that perforation of the living child would be required. The lower limit with a flat pelvis and full-sized fetus would be a true conjugate of 7 cm., and in the generally contracted pelvis a conjugate of 7.5 cm. If the pelvis is smaller than this, cesarean section is indicated. The early induction of labor is indicated in the flat pelvis with a conjugate of 7.5 cm. as the lower limit, and 8 cm. in the generally contracted pelvis. Generally contracted flat pelves are usually not suitable for the induction of early labor, but require pubiotomy or cesarean section. In the flat pelvis labor is best induced by the use of the metreurynter, but in the generally contracted pelvis the bougie method is preferable, because it is undesirable to run the risk of displacing the presenting part.

Chronic Appendicitis.—Oberndorfer differs from those who believe that a true chronic appendicitis does not exist, and that in all cases an acute inflammation has preceded any long-standing process. Oberndorfer is of the opinion that a true chronic interstitial inflammation of the appendix, originating in the lumen of the organ, occurs as a result of bacteria or their toxins. This chronic interstitial inflammation begins with swelling of the follicles, together with a proliferation of the young connective tissue cells in the inner layer of the submucosa. As a result of the increased density of the submucosa, and the consequent cicatricial contraction of the connective tissue, this layer is separated from the muscle, and the resulting space is filled with fat. At the same time compression and atrophy of the mucosa is caused. The final stage of the process is a partial or total obliteration of the appendix, always beginning at its tip. If concretions are present in the lumen of the tube its walls cannot collapse, but the submucosa becomes thickened, the mucosa atrophies, and the glands are partly destroyed. A very marked increase of the elastic elements compensates for the degeneration of the contractile structures.

Primary Tuberculosis of the Spleen.—Frank calls attention to the existence of this condition, which, he states, is usually overlooked. In cases of splenic tumor, in which all of the ordinary etiological factors, such as leukemia, pseudoleukemia, malaria, syphilis, and alcoholism, may be excluded, and in which the enlargement of the spleen is the only evidence of disease, he considers it justifiable to resort to the injection of tuberculin. If the result is not conclusive exploratory laparotomy should be done without undue delay. The extirpation of a tuberculous spleen is not only warranted, but is called for, since all of the cases so far reported have resulted favorably.

French and Italian Journals.

Contribution to the Morphology of the Hypophysis of the Brain.—N. C. Paulesco presents the following conclusions: 1. Among the various animals of the vertebrate series the best ones for use for the total ablation of the hypophysis in the physiological laboratory are the frog, the hen, the cat, and the dog; 2. In the dog and in the cat the extirpation by itself of one or the other of the two lobes, nervous and epithelial, of the hypophysis presents serious difficulties. The nervous lobe may be separated, but there is always taken off at the same time the medullary substance of the epithelial lobe which covers it. As to the epithelial lobe it cannot be taken out or entirely destroyed—the nervous lobe remaining intact—on account of the fragility of the tissues, and especially on account of the close proximity of the carotids; 3. The existence in the epithelial lobe of two parts, the medullary and the cortical, suggests a resemblance to the thyro-parathyroid apparatus, the cortical part corresponding to the thyroid gland, and the medullary part to the parathyroid glands. Aside from this there exists histologically manifest analogies between the corresponding parts. Although in the dog and in the cat it is unfortunately impossible to separate the two lobes perfectly, nevertheless, by the use of the thermocautery the greater part of the cortical substance can be destroyed. By this process one may hope to produce phenomena associated with functional insufficiency of the cortical substance. Again, by taking out the nervous lobe, and with it a large part of the medullary substance, one may hope to obtain phenomena associated with functional insufficiency of the medullary substance. In separating the hypophysis from its surroundings, the extent of the injury to the blood-vessels will depend upon the method of this procedure.—*Revista Stiintelor Medicale*, May-June, 1906.

Aneurysm of the Aorta Ruptured into the Pericardium.—Simon and Bénard studied this case at autopsy. The patient was a man sixty years old, a syphilitic, badly nourished. Two days before his death he had had a short attack of syncope preceded by dyspnea and precardial distress. At the end of a few minutes, however, he had been able to sit at the table for a meal. On the next day, still feeling pain, he entered the hospital. There it was determined that the heart-beat could be felt at the right of the sternum, and that the cardiac dullness extended over an area as large as the hand, as well to the left as to the right of the sternum. On the next day, two days after the first attack of syncope, the patient succumbed within the space of a minute and a half. The writers who were present at the time believe that the stopping of the heart preceded the cessation of the respiratory movements. At autopsy the pericardium was found to be very much distended. The aorta showed an enormous aneurysm, which was entirely enveloped in the fibrous sac of the pericardium. The aneurysm showed a rupture about one centimeter long. This rupture had probably taken place in two stages.—*Bulletins et Mémoires de la Société Anatomique de Paris*, April, 1906.

Post-exanthematous Cutaneous Tuberculosis.—H. Gougerot, after making a careful study of this subject, concludes that after measles, more rarely after scarlatina, there sometimes develops disseminated cutaneous tuberculosis distributed over the entire surface of the body. This occurs during convalescence or a little later. All of the cases reported have been noted in children from three to twelve years old. The morphological types are diverse. The one most often observed is the lupus of Willan, with its different forms. There has also been observed scrofuloderma, verrucose tuberculosis, and lichen scrofulosorum. The writers give a number of illustrative cases. They touch upon the association between smallpox and cutaneous tuberculosis. They believe that eruptive maladies predispose to cutaneous tuberculosis, particularly in the serious disseminated forms (measles, scarlatina), and that they aggravate lesions already existing (smallpox).—*Revue de Médecine*, September, 1906.

Roentgen Rays in Leukemia.—Rafaelle Pirone describes the treatment of a case of leukemia with Roentgen rays, and its effects on the blood of the patient. There was a sensible diminution of the leucocytes in the blood, and the relations of the various kinds were changed. The neutrophile myelocytes diminished, while the polynuclear neutrophiles increased. The red corpuscles and the hemoglobin increased. The myelogenous forms of leukemia are most benefited by the rays, while the lymphatic forms are not affected by them. The rays aid the transformation of myelocytes into polynucleated cells, of the erythroblasts into erythrocytes; in other words, they return to its normal condition the disturbed blood-producing function. The treatment of leukemia by the rays is not only a symptomatic treatment, but a rational one; on the other hand, it is not a specific for the disease.—*La Riforma Medica*, August 4, 1906.

Book Reviews.

THE PRACTICE OF PEDIATRICS, in Original Contributions by American and English Authors. Edited by WALTER LESTER CARR, A.M., M.D., Consulting Physician to the French Hospital, New York; to the New York Eye and Ear Infirmary; Visiting Physician to the New York City Children's Hospitals and Schools; Member of the American Pediatric Society; formerly Editor of the *Archives of Pediatrics*. Illustrated with 199 Engravings and 32 full-page Plates. Philadelphia and New York: Lea Brothers and Company, 1906.

THIS book, which is one of the three volumes of the "Practitioner's Library," the others being on Obstetrics and on Gynecology, is the work of fourteen contributors, most of them well-known pediatrists, and all clinicians of experience. In his arrangement of subjects the editor has wisely given prominence to those which belong purely to the domain of pediatrics, omitting for the most part a consideration of the diseases which are common to all periods of life, except in those cases in which the youth of the patient so modifies the course or the symptoms of a disease as to make of it a malady peculiar to childhood. The result of this skilled editing with the cooperation of the contributors has been to produce one of the best treatises on pediatrics which it has been our pleasure to see. The work is divided into twelve sections, dealing respectively with "Diseases and Injuries of the Newborn," "Development, Growth, and Hygiene," "Infant Feeding," "Diseases of the Alimentary Tract," "Diseases of Nutrition," "Infectious Diseases," "Diseases of the Respiratory Tract," "Diseases of the Heart and Blood-vessels," "Diseases of the Genito-urinary System," "Diseases of the Blood, Lymphatic System, and Glands," "Diseases of the Nervous System," and "Diseases of the Skin." The illustrations are of a high order, many of the plates especially being excellent. We can warmly recommend this well-written, well-edited, and well-printed volume to anyone who is in need of a thoroughly practical and up-to-date treatise on the diseases of children.

TECHNIQUE DU TRAITEMENT DES TUMEURS BLANCHES. Par F. CALOT, chirurgien en chef de l'Hôpital Rothschild, de l'Hôpital Cazin-Perrochaud, de l'Institut orthopédique de Berck, etc. Avec 192 figures dans le texte. Paris: Masson et Cie, 1906.

THIS is the third volume of Calot's treatise on orthopedic surgery, and deals with "White Swelling." The author refers to the ordinary conservative treatment of this affection, and condemns it as being too uncertain in its results and as consuming too much time. He also notices the operative method which, he says, "rarely cures, often makes matters worse, and always mutilates." In opposition to these methods, he urges intraarticular injections, and claims that a cure is effected by this mode in about 99 per cent. of cases, and this in a short space of time. The author uses two different solutions for injection into the joint, one of which will cause ankylosis and the other results in a movable joint. He goes into considerable detail as to the solution to be used, the dose, frequency, and all the *minutiæ* of the technique. The results claimed are certainly marvelous; and the book, which is most readable, should appeal to all who are interested in this subject.

AIDS TO PHYSIOLOGY. By PEYTON T. B. BEALE, F.R.C.S., Eng., Examiner in Physiology to the Society of Apothecaries; Lecturer in Physiology and Histology, Woman's Department, King's College; Demonstrator of Histology (Late Physiology), King's College, London. New York: William Wood and Company, 1906.

THIS is the newest compend on physiology, and is of a very elementary nature. In some parts it is deficient to the extent of being inaccurate; for example, all that it has to say of human milk is that "it contains rather more sugar and a larger proportion of water than cow's milk." The book is not up to the level of the other volumes of the Students' Aids Series.

LE SIGNE DE LA MORT RÉELLE EN L'ABSENCE DU MÉDECIN. La constatation et le certificat automatiques des décès (procédé de la réaction sulphydrique). Moyen simple, infaillible, à la portée de tous, pour éviter le danger de la mort apparente à la campagne. Par le Docteur ICARD (de Marseille), Médecin de l'Administration des pompes funèbres, Vice-Président de la Société de Londres contre le danger des enterrements prématurés, etc., etc. Avec gravures dans le texte. Paris: A. Maloine, 1907.

THE fear of being buried alive is a very real one with many people. In this little book Dr. Icard proposes a simple and ready plan to show conclusively whether death has or has not occurred. Among the earliest signs of commencing decomposition is the formation in the lungs of sulphurous vapors (sulphuretted hydrogen), which escape through the nasal fossæ. The author suggests that on a small piece of white paper a word or two should be written with a solution of lead acetate. The writing is invisible. The paper is then inserted within the nostril, and the certainty of death will be shown by the writing becoming dark, and therefore visible. It is claimed that this reaction is apparent at the end of about twenty-four hours; it is, therefore, a relatively early sign of certain death. The book deals with an important subject, and is worth reading.

SUPPLEMENTARY ESSAYS ON THE CAUSE AND PREVENTION OF DENTAL CARIES. By J. SIM WALLACE, M.D., D.Sc., L.D.S., Hon. Dental Surgeon, West End Hospital for Nervous Diseases, and Assistant Dental Surgeon, National Dental Hospital, W. London: Baillière, Tindall & Cox, 1906.

THE author has gathered together in this volume a number of essays which have appeared before. He discusses the cause of the prevalence of dental caries and its prevention, as well as the solution of the problem of susceptibility and immunity to dental caries. The main contentions which have been made now for some years by the writer have been corroborated by laboratory tests. The question of food selection is treated with a broad outlook and is one of the most interesting problems considered.

OUTLINES OF PRACTICAL SANITATION, for Students, Physicians, and Sanitarians. By Dr. HARVEY B. BASHORE, Inspector for Pennsylvania Department of Health, Author of "Outlines of Rural Hygiene" and "The Sanitation of a Country House." With 42 Illustrations. New York: John Wiley & Sons; London: Chapman & Hall, Ltd., 1906.

SUCH rapid strides are being made in the science of sanitation that a new book on the subject, or a revision every year, will no more than keep abreast of the times. The writer emphasizes the fact that he does not follow the beaten track of the usual sanitary textbook. Subjects are introduced here which are of interest not only to health officials, but also to taxpayers and citizens. Among these subjects are milk and food supplies, and car sanitation. These are topics which are exciting the most general interest. In other chapters are discussed the subjects of habitations, including hospitals, prisons, asylums, and theaters; water supply, its storage, distribution, purification, and examination; the collection and distribution of waste; the cause and prevalence of contagious and infectious diseases; vital statistics; municipal sanitation; rural and suburban sanitation; and personal hygiene. A very satisfactory index completes the volume.

A TREATISE ON SURGERY. By GEORGE RYERSON FOWLER, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor in the New York Polyclinic, etc. Vol. II. Philadelphia and London: W. B. Saunders Company, 1906.

WE reviewed recently the first volume of the late Dr. Fowler's book and we are pleased to find that the good qualities commended in the first are repeated for the second volume, which now completes the treatise. The second volume is devoted to the surgery of the vertebræ, the abdominal and pelvic cavities, and the extremities. Particular interest attaches to the section on abdominal surgery, including as it does a description of the numerous features with which the author's name is associated. This section is very complete and well illustrated. It is strange that here, as well as in most other surgical textbooks, the technique of introducing a Murphy button should differ in some essential detail from that described by Murphy himself, and the method here shown also differs from that described in Murphy's original paper in the MEDICAL RECORD. Fowler's description of appendicitis is concise and practical, and the technique of the operation does not contain a multitude of "stunts" to confuse the reader. The remainder of the book is equally satisfactory, and the work as a whole will take a leading place among recent surgical textbooks.

GYNECOLOGY. Vol. IV of The Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M.D.; Vol. IV, edited by EMILIUS C. DUDLEY, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, etc., and C. VON BACHELLÉ, M.S., M.D., Gynecologist to the German Hospital, Chicago. Series 1906. Chicago: The Year Book Publishers, 1906.

THE volume on gynecology of this most compact and practical series of manuals presents the same features as have been already noted for the preceding volumes. The field has been very well covered, and the illustrations—many of which are taken from recent publications—are excellent. The volume should prove indispensable to every practitioner interested in the progress of gynecology.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held October 22, 1906.

Dr. Floyd M. Crandall in the Chair.

The one hundred and first annual meeting was called to order by the President, Dr. Crandall, who declared the polls opened for the election of officers, censors, and delegates.

Report of the Comitia Minora.—Dr. John Van Doren Young presented this annual report. There were 2,280 members, of whom 2,012 were in good standing.

Report of the Treasurer.—Dr. Charles H. Richardson presented this annual report.

Report of the Board of Censors.—Dr. Cornelius G. Coakley presented this annual report.

Report of the Committee on Discipline.—Dr. Edward D. Fisher said this committee had not been called upon to act during the past year, therefore he had no report.

Report of the Committee on Audit.—Dr. Matthias L. Foster presented this annual report.

Report of the Milk Commission.—Dr Roland G. Freeman said it was just six years since the organization of the milk commission under the auspices of the society, and he briefly reviewed what it had accomplished. After the appointment of the commission in 1900, the work of interesting dairymen was undertaken. Considerable progress was made possible through the cooperation of the Rockefeller Institute and the City Board of Health. The former undertook the expense of inspection while the latter provided facilities for bacteriological examinations. This movement created a demand on the part of the public for milk supervised by this commission, so that at the end of the first year, when the aid of the Rockefeller Institute was withdrawn, the dairymen saw that it was to their advantage to contribute such amounts as were necessary in order to support the machinery of the commission. At the end of the first year the commission was enlarged, new rules for the production of certified milk were elaborated, and a second grade of supervised milk, which could be produced at less cost, called inspected milk, was authorized. By the end of the second year 3,000 quarts of certified milk were being produced daily on nine farms and sold by nine dealers in New York. A considerable amount of inspected milk was also marketed. The following year ten farms were producing 4,300 quarts of certified milk and 1,500 quarts of inspected milk, a total of 5,800 quarts. The next year twelve farms were producing 5,138 quarts of certified milk which were being sold by ten dealers, while 3,040 quarts of inspected milk were marketed. In 1905 fifteen farms were producing 7,062 quarts of certified milk which were being sold by thirteen dealers, and this, together with 3,240 quarts of inspected milk, made a total output of 10,302 quarts, and the number of visits to the farms by the inspectors had increased to 208. This year 9,567 quarts of certified milk were produced daily on nineteen farms and sold by thirteen dealers, which, together with 2,800 quarts of inspected milk, made a total of 12,367 quarts, while the number of visits to farms had increased to 329. During these years the interest of the dairymen had made it possible to have somewhat more rigid requirements for the production of this milk. During 1903 a seal was adopted to prevent manipulation of the milk after it left the farm, and the farmers were required to stamp on the pasteboard cap the date of milking. During 1904 the tuberculin test, which had previously been recommended, was required, and during the same year postal cards were prepared on which the dairymen were required to send notification of any contagious disease on the place. More recently a set of fines had been established for neglect in complying with the requirements for the production of certified and inspected milk, and a score card for computing the excellence of the different dairies had been prepared and applied to the rating of the dairies. Inspected milk was sold in bottles for 8 cents a quart, while certified milk was sold at from 12 to 20 cents. That sold for 12 cents was produced in compliance with the requirements of the commission, while that sold at a higher price was often produced under extra precautions not required by the commission. The commission had assumed no control over the prices charged by the dealers and was not instrumental in the movement to raise the price of ordinary milk. The commission felt some pride in the results of its work. The commission asked the privilege of publishing this report so that the reprints might be used to answer the frequent inquiries received concerning its work.

Report of the Counsel of the Society.— Champe S. Andrews, Esq., made this report. He said the United States Post-Office Department, through Post-Office Inspector William H. Snow, had been of the greatest service to this department, increasing its efficiency and reducing expenses in certain lines of work. The Police Department of the City of New York deserved special praise and credit for its great assistance rendered during the past year. Col. Theodore A. Bingham, Police Commissioner, detailed a regular detective, Mr. Ferretti, to aid in their work. Through his assistance they were able to break the record of the legal work of the society. The amount of fines imposed and paid was larger than in any year of the society's existence. The attack against the abortion and personal columns in the papers that hitherto published them, had been completely successful. The papers of New York City were now absolutely clean so far as the advertisement of the abortionist was concerned.

Proposed National Society for the Preservation of the Public Health and Morals.—In the early part of this year Mr. Andrews lectured in Philadelphia by invitation of Dr. Henry W. Cattell; on this occasion Mr. Andrews elaborated upon the necessity of forming a national society composed not only of physicians but of men and women in every walk of life interested in the suppression of quacks and quackery. The Medical Society of the County of New York was the first to pass a resolution favoring the idea of the appointment of delegates from public-spirited societies to meet in the fall to devise ways and means to protect the public health and morals. This resolution was passed on the 14th of May, 1906. The idea was approved by many societies and letters from these sources endorsing the movement were printed in one pamphlet, together with proposed form of resolution authorizing the appointment of delegates to the conference to be held November 15 at the Hudson Theater, New York City. Over one hundred societies had joined in the movement and delegates were being appointed from all over the United States.

Resolution.—Dr. Henry S. Sterns offered the following resolution, which was unanimously adopted:

Whereas, During the past twelve months, for the first time in the history of the Medical Society of the County of New York, the public authorities have come to the assistance of its legal department in the enforcement of public health laws against quackery and charlatanism, and

Whereas, The efficiency of the work of the legal department of the society has been greatly increased and the protection of the general public been made much more effective; and

Whereas, The Postmaster-General, Hon. George B. Cortelyou, by directing certain Post-Office Inspectors, including Inspector William H. Snow, is the person directly responsible for the cooperation on the part of the Federal authorities; and

Whereas, Col. Theodore A. Bingham, Police Commissioner of the City of New York, through his detail of

Officer Andrew Ferretti, is directly responsible for the cooperation of the city authorities; now, therefore, be it

Resolved, That the Medical Society of the County of New York, at its one hundred and first annual meeting, express its profound thanks to Hon. George B. Cortelyou, Postmaster-General, and to Col. Theodore A. Bingham, Police Commissioner, for the great assistance they have rendered the society during the past twelve months, and ask for a continuance of the cordial co-operation to the end that the interests of the people may be protected against the ravages of quack and charlatan; be it further

Resolved, That a copy of this resolution be transmitted by the Secretary of the Society to the Hon. George B. Cortelyou, Postmaster-General, and to Col. Theodore A. Bingham, Police Commissioner of the City of New York.

Acute Pancreatitis; With a Report of Five Cases.—Dr. JOHN F. ERDMANN read this paper, which was a thesis for admission to membership in the American Association of Obstetricians and Gynecologists, meeting held in Cincinnati, September, 1906. After quoting from a recent article which appeared in the MEDICAL RECORD, January 20, 1906, on "Digestive Disorders and Abdominal Pain," he said that chemical analyses, as now understood in pancreatitis, were frequently misleading, and patients at present should be urged to submit to an abdominal section. It was far better that such an exploration be made, with its findings, than to wait for some complex urinary, blood, and digestive analyses. The chemistry of pancreatic disease was yet in its infancy and related chiefly to the feces and urine. The excreta contained in many instances globules of fat and partially digested muscular fiber. Should an analysis of feces be demanded in an acutely toxic case, one could see the loss of valuable time waiting for the stools, when an exploratory operation would promptly discover the condition and save life and time. Liquid fat had been expelled after normal stools, and the stools were said to be much larger than normal when compared to the amount of food intake. These two excreta evidences could be considered only in chronic pancreatitis. The urine had frequently been cited as containing sugar. He reported five cases, none having sugar at any time, either before or after the operation. Dr. Thayer of Baltimore in 1905 had reported five cases, none of which contained sugar. With these ten cases he was inclined to give no weight to the presence of sugar as a factor in acute pancreatitis. That the duct of Wirsung was a mode of entry of infection, etc., had been demonstrated on several cases, and in one of the hemorrhagic cases he reported presented two small biliary calculi in the duct of Wirsung. Traumatism, alcoholism, and arteriofibrosis were also factors. Opie had demonstrated a distinct relationship between gall-bladder disease and pancreatitis. Stones in the common duct might plug up the Vaterian papillæ, and a retrograde flow of infected bile might enter the open duct of Wirsung. In the five cases reported in his paper, three were hemorrhagic, one of them having the pancreas almost completely destroyed without slough formation, and two that resulted in abscess formation. None of these was accompanied by the discharge of any slough, although sloughing was one of the terminations of an acute inflammation of this viscus. The onset of this condition was usually a sharp pain accompanied with varying degrees of shock, rapidly followed in some cases by a profound toxemia, denoted or characterized by a peculiar cyanosis and lividity, with shallow breathing and rapid pulse. The pain was usually of a far more intense degree than that of appendicitis or gastric perforation. Hiccough was a symptom of relative frequency and persistence; there was vomiting with and following the pain onset. Pain in the back, of an intense splitting character, was evidenced in three of his cases. These symptoms, when considered with a history of previous digestive disturbances and gall-bladder or duct invasions, should cause one to give the possibility of pancreatitis great weight. The subsequent manifestations were those of an ordinary peritonitis, *i.e.* abdominal distention, obstruction due either to pancreatic pressure or intestinal paresis. Later, a tumor formation anywhere in the epigastrium, or rather supraumbilical zone. If in doubt, explore; if then one met with a peculiar bloody, beef-broth-like serum or peculiar warty, yellowish-white plaques (fat necrosis) upon the omentum or mesentery (provided no strangulation existed as a cause of this bloody serum), one could safely extend the search to the pancreas. If an acutely hemorrhagic, enlarged pancreas was found, an incision should be made in its coat of peritoneum and a puncture or punctures made in the pancreas itself. Gauze or other drains should be placed in about these incised and punctured areas. If gangrenous or suppurative, drainage sufficiently free to allow of ready expulsion of the sloughing material and drainage of the pus should be provided, either by the anterior route or in the costavertebral angle. The question of doing a cholecystotomy or not was one that each individual case itself would present for consideration. In the five cases reported, the gall-bladder was drained twice, each time for large numbers of stones. In one of the remaining cases it was palpated and inspected without being drained. In the remaining two cases it was not seen, owing to the pus collections being well to the left. The cholecystotomy cases died, while two of the remaining cases recovered, and the third died weeks later from exhaustion and multiple infective abscesses. None of the five cases had at any time any evidence of sugar in the urine. In conclusion, he called attention to some of the prominent symptoms, as follows: The marked pain at the onset; the sharp intoxication of some of the cases; the dyspnea and lividity seen in many; the constant, splitting backache; the indefiniteness and difficulties in the present state of the chemistry of the urine and feces. He emphasized the importance of early exploration when a given set of symptoms, such as were presented, manifested themselves.

Dr. JOHN B. WALKER said that these cases were seldom recognized, and in his experience he could report but two cases, one a woman of 40 years, the other a man of 50 weighing 170 pounds. The latter patient complained of pain in the epigastrium; there was none in the lower abdomen. He had no vomiting, increased pulse rate or temperature. The epigastric pain grew more intense, and then occurred a slight elevation of temperature, but not a very rapid pulse. Operation was declined until 60 hours after the onset of the attack. There was no leucocytosis and the bowels were not constipated. Sixty hours after the onset, an incision was made, and the peculiar yellowish-white plaques of fat necrosis, as mentioned by Dr. Erdmann, the peculiar bloody, beef-broth-like serum, were noted. Twenty-four hours later the man died. Dr. Walker emphasized the importance of an early recognition of these cases and the peculiar epigastric pain.

Dr. LEONARD WEBER said that in December last a rather healthy married woman, 35 years old, came to his office and told him that another physician had told her she had sugar in her urine. Dr. Weber found she had between 4 per cent. and 5 per cent. sugar. In going into her history he learned that she was abroad in 1904, living in the south of Germany. She was taken with intense pain and gave all the symptoms of an acute attack of peritonitis. After one or two weeks she was removed to a surgical clinic and a diagnosis was made of acute fat necrosis of the pancreas with the formation of an abscess. She was operated on and remained in the clinic three months before the fistula healed. She had sugar in her urine when she was admitted and had it when she left the clinic, but not so much. The woman was now well.

Dr. Erdmann said that while he did not mean to imply sugar was a factor in acute pancreatitis, at the same time he thought it might be a coincidence.

Officers Elected.—*President*, Walter Lester Carr; *First Vice-President*, H. Seymour Houghton; *Second Vice-President*, William Hallock Park; *Secretary*, John Van Doren Young; *Assistant Secretary*, J. Milton Mabbott; *Treasurer*, Charles H. Richardson.

Consideration and Action on the Constitution and By-Laws Presented by the Comitia Minora at the September Meeting with the Recommendation That They Be Substituted by the Society for the Present By-Laws.—The new constitution and by-laws were presented to the society, acted upon, and passed in accordance with the wishes of the Comitia Minora.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held February 20, 1906.

DR. WARREN COLEMAN IN THE CHAIR

A Case of Progressive Muscular Atrophy.—Dr. CHARLES E. NAMMACK presented this patient, a man, forty-nine years old, who entered the fourth medical division of Bellevue Hospital January 19, 1904. His family history was negative. He was a moderate user of alcohol up to six years ago. He had chewed tobacco since he was ten years old. He had gonorrhea once, ten years ago. He denied syphilis. The patient had been perfectly well up to October, 1903. One day he dislocated his shoulder. Two weeks later he was unable to hold a hammer in his right hand because he was unable to close firmly his thumb. During the next two weeks he noticed that his fingers became weaker and he was compelled to give up his work. During the next three months the fingers of the left hand became involved, and gradually the muscles of the forearm and shoulder became more or less weakened. He experienced no pain. He said he was perfectly well except for the weakness in the hands, forearm, and shoulder. The physical examination showed nothing except a valvular heart murmur. He presented the picture of Aran-Duchenne type of disease of spinal origin. There were presented the fibrillary twitchings characteristic of this disease. The electrical examination showed the reaction of degeneration. In this case were presented the four cardinal symptoms, viz., patient in middle life, marked atrophy of the muscles, reaction of degeneration, and fibrillary contractions. There was an absence of family history which one usually got in the dystrophies.

Progressive Muscular Dystrophy.—Dr. CHARLES E. NAMMACK presented two patients, brothers. The first patient was twenty years old, the youngest of thirteen children, six boys and seven girls. The calves of his legs became quite large and his playmates made fun of it. Although large, they were quite weak. When twelve years old the shoulder blades appeared large and there did not appear to be much flesh on the shoulder bones. When fifteen years old the muscles upon the back of the shoulder became very weak. During the last five years this condition progressed, and now he was unable to rise from the sitting to the upright position without placing his hands on his thighs. Lordosis was present. His manner of rising from the ground was quite typical of the disease. The brother was twenty-eight years old and he got up from the reclining position with more difficulty. He was a moderate user of beer, tobacco, tea, and coffee. He denied gonorrhea and syphilis. The first symptom he complained of was weakness in the legs. Then the muscles of the back became weak. There was a gradual increase in muscular weakness in the shoulders and arms. When twenty-three years old he could not climb into his wagon and was therefore compelled to give up his occupation. For two years his only trouble seemed to be the difficulty experienced in attempts to get up from a sitting to a standing position. As a boy he was large and bulky, and was possessed of unusual strength, a case of real hypertrophy. The manner of getting up was quite distinctive of the disease, although it was not at all pathognomonic. This patient had had typhoid fever one year ago, and during his confinement to bed the muscular disability seemed to make rapid progress.

Dr. Nammack pointed out the differential features betweeen progressive muscular atrophy and progressive muscular dystrophy, and stated that although these had hitherto been considered distinct diseases, certain recent writings made it probable that the distinction might not be so sharp as one believed. Still, as the question was not yet absolutely decided, it might be well to keep to the old divisions, especially as the types shown presented sharply-defined clinical entities, each with a fairly well determined anatomical basis. Dr. Nammack also wished to emphasize the necessity for keeping cases of dystrophy on their feet as long as possible, because the regular natural use of the weakened muscle far surpassed any other measure of treatment in arresting the progress of the disease. It was well known that confinement to bed by any acute intercurrent affection or surgical operation had a most disastrous effect, the dystrophic process seeming to speed when patients were not exercising in the upright posture. Beyond the systematic natural use of the muscles, other measures of treatment for this condition were of little use.

Dr. WILLIAM B. NOYES said that a more delicate classification, at least on pathological lines, could be made in these cases, according to the question of whether the spinal cord or the peripheral neurons were affected. Pseudohypertrophic paralysis had seemed to be a purely muscular disease and not really belonging to the list of organic nervous diseases. There was not wanting evidence to-day to associate it with pathological changes in the end organs of the nerves, though whether this preceded or followed the muscular changes it was hard to say. But there were cases of genuine pseudohypertrophic paralysis, where definite symptoms referable to the spinal cord were seen. One such case, with all the classical symptoms of this disease but with markedly increased knee jerks, was seen by Dr. Noyes within the last year, suggesting at least a secondary involvement of the cord. There was some definite progression in pseudohypertrophic paralysis, and it was not difficult to see the order of involvement of different portions of the muscular system that was sure to come in the course of time. In the progressive muscular atrophies depending on disease of the ganglion cells of the cord, the only thing that could be expected was that it would gradually spread as if by contiguity, and probably affect both sides of the cord rather than jump to a lower level. For instance, the cases that started with paralysis and atrophy of the muscles of one shoulder were quite as likely to affect the other shoulder as to run down the entire arm of the side originally affected. Yet there might be a progression, from the arm centers in the cord to the legs, without affecting any muscles between; the cause of this lay in some embryological factor. A somewhat better prognosis could be made in these chronic poliomyelitis cases, in that the progress of the disease might cease with the involvement of certain groups of muscles and not do any further damage. Pseudohypertrophic paralysis was steadily progressive, though in a case treated by the speaker the disease seemed to cease its progression for a number of years in response to massage and electrical treatment.

The Use of Hydrotherapy in the Treatment of the Insane.—Dr. GEORGE B. CAMPBELL presented this paper. He said that his object was to demonstrate in a general way the results attained by the use of hydrotherapy since the year 1898, when its use was first inaugurated by Dr. Dent in the Manhattan State Hospital. In the depressive phase of manic depressive insanity one frequently found slow and inefficient respiratory action, marked disturbance of the circulation, characterized by cold and clammy extremities, and inactivity of the cutaneous surfaces, with pronounced diminution of the body secretions. A similar condition was also observed in dementia præcox. In these

conditions the tonic and stimulating effect of the various douches, sprays, etc., under hydrostatic pressure, preceded by the hot-air cabinet, had been most extensively employed, and the results tended to show that the duration of the existing conditions was materially lessened, while in recoverable cases the duration of the psychosis had been materially shortened and the pathological conditions relieved at a much earlier date, thereby lessening the blow to the central nervous system. Realizing the importance of controlling motor excitement characterized by either anxious or exalted states, with their persistent insomnia, and being impressed by the distressing results of the prolonged use of sedatives, the prolonged tub bath, ranging in temperature from 99° to 100°, and even to 112°, was experimented with, and it was found that the longer the immersion the more prolonged was the effect. A miniature tub showing the entrance and exit of the water and an ingenious contrivance for controlling the velocity, was exhibited. The maximum duration of the bath was less than fourteen hours, though in one or two instances he had continued it for a period of six weeks. The physiological action of this form of hydrotherapy was still open to discussion. It was known, however, that the irritation caused by the warm water had a specific action on the cutaneous nerve terminations, and it undoubtedly caused an irritation of the peripheral ends which was summarily communicated to the vasomotor nerves, producing dilatation of the blood-vessels, and this meant acceleration of the circulation. This form of treatment was being used largely by the Germans as hypnotic, sedative, and eliminative. The application of water as a therapeutic agent required as much careful consideration of the indications and should be dispensed with the same degree of accuracy as our most potent drugs. A number of cases were cited showing the effects of this treatment, from which the author of the paper concluded that while he would not advise the abolishment of drugs in the treatment of the insane, he would emphasize the fact that in hydrotherapy we had a safe and effective hypnotic as well as a powerful eliminative, and that the intensity of the mental and motor manifestations was lessened, and the duration of the psychosis cut short by at least six to eight weeks. This had been demonstrated by comparison of similar cases treated by the ordinary hospital routine.

The Effect of Surgical Operations Upon the Insane.—Dr. LeRoy Broun read this paper. He spoke of the differences of opinion on this subject, as shown at the meeting of the British Medical Association held in Montreal in 1897 and the opinions held to-day. Within the last ten years the opinions of alienists and surgeons had reached a common plane. The alienists almost universally recognized the importance of rectifying and repairing pathological states existing among insane patients. The surgeon recognized that no operation should be performed except to rectify conditions disturbing the patient's physical well-being or endangering the life of the individual. An examination of the records of various insane hospitals showed that 75 per cent. of the female patients had some form of pelvic or abdominal disease, and these patients had a right to be relieved from any suffering entailed by these pathological conditions. The author confined his remarks to abdominal and pelvic surgery among women of the Manhattan State Hospital. During the three years ending October 1, 1903, 312 patients had been operated upon, which was less than 5 per cent. of the female population of the hospital during that time. Of this number, there had been 83 abdominal sections for various pelvic and abdominal diseases, and 229 operations of other character, chiefly plastic. Of the entire 312, 158 had been physically benefited in a marked degree. One hundred and thirty-one had been noticeably improved, but not to the extent of the previous class. Of the remaining patients, six had died, three from natural causes and three from causes attributable to the operation. Many of those operated upon had been subjects of mental disease, giving little hope for a favorable outcome. Of the entire number, 52 were discharged as mentally recovered. Of these, 23 showed more rapid mental improvement under the recognized hospital treatment after the operation had been performed than before. The character of mental alienation present in these 23 cases was: Melancholia, chronic, 7 cases; melancholia, acute, 7 cases, mania, acute, 5 cases; dementia, primary, 4 cases. He thought the efforts of some to benefit patients by producing a premature menopause had done much harm. In his entire range of operations on the insane there had been no instance in which a patient's mental condition had been aggravated by a proper surgical procedure. Of the 83 abdominal sections for various conditions, 12 per cent. were among those discharged as mentally cured. Among these 9 patients it was necessary to remove both adnexa in only two instances. These operations were two myomectomies, with suspension of the uterus, three suspensions of the uterus for adherent uterus, two supravaginal hysterectomies, one ovarian cyst, and one Bassini operation for hernia.

Of the 229 minor operations, 14 patients were among those discharged as cured, or about 6 per cent. He did not attribute the cures to other causes than the improved physical condition of the patients after operation. It was of the utmost importance that the physical health of the patient should be brought to its highest state of perfection at as early a period as was possible after the mental breakdown. He thought the following facts were well established: (1) If the operation had been properly done and the patient had not been subjected to uncalled-for castration, the mental condition was never aggravated. (2) Under the stimulus of the improved somatic state, some patients showed greater mental changes under the moral and therapeutic care than was shown before such relief was given. (3) At times this improved mental state continued to one of recovery. The primary object of surgical operations upon the insane should be to improve the physical status of the patient.

Operative Surgery upon the Insane.—Dr. Warren S. Bickham read this paper. He said that in our present state of knowledge it was never wise to operate to cure insanity, but we should operate to relieve patients of accompanying physical conditions, the exact relation of which to the mental state being, at present, not within our power to fully know. The outcome of such a course was that the physical ailment was cured in the great majority of cases and the mental ailment in a certain percentage of cases. Even where there was no mental improvement noted, the patient was generally made more comfortable and useful by the operation. One should operate upon the insane for the same conditions as for the non-insane. The best method of obtaining the direct value or the reverse of operations on the insane would be to select certain groups of insanities in the larger institutions, operate upon the demonstrable lesions in half the number and carry out a non-operative course in the other half, and then compare the mental condition of the two groups after a reasonable length of time. At present many collections of statistics were untrustworthy and misleading. The best outlook for improvement following operation was in those cases where the operations restored or greatly improved the general health. A tangible physical condition might indirectly predispose to insanity by lowering the bodily health of the individual, and in such cases operative interference was especially indicated. Improvement and sometimes even cure seemed to be the result of the shock of the operation. Such accidents could not be considered the result of intelligent effort. So far as operating upon the brain itself was concerned, an operation should be undertaken to remove a demonstrable lesion, especially where localized phenomena existed and where the operation was performed before the cells involved had been injured beyond recovery, benefit was to be expected. Contraindications to operating upon the insane were two: First, the possibility, inherent in all operations, that the patient might

not survive the operation itself; and, second, as to whether there was likelihood of increasing the degree of insanity through the act of operating. Authentic cases where such an accident had occurred were exceedingly rare. He spoke of the non-fitness of the majority of surgeons to do their own localizing, and said that for the highest development of neurology, in the broadest sense, some neurologists should become surgeons and some surgeons should be better neurologists. His personal work in operating upon the insane had as yet been too limited to be of very great value. Of twenty insane patients operated upon for the correction of demonstrable lesions of general surgery, one died as a result of anesthesia pneumonia and suppurative meningitis, but none of the others were made worse by the operations. As to their insanity, the physical conditions of all were believed to have been bettered, and the cure of the insanity of two was considered to have followed operation, whether causatively or coincidently might be inferred.

Dr. William H. Thomson said that there was no one measure that would more surely make a hyperacid urine alkaline as prolonged immersion in tepid water; in fact, all the acid secretions of the body were rendered alkaline. The Romans knew this, and, therefore, they forbade anyone partaking of a heavy meal before taking a bath. A good deal of the benefit from taking mineral baths was not due to the mineral ingredients, for the skin would not absorb the minerals, but the nerves were powerfully affected, especially in the direction of sedation. To this fact was due the muscular relaxation, better brought about by a warm water douche than anything else. He recalled a case of universal contractions with persistent flexures which followed an attack of spinal meningitis. The patient begged not to be touched because of the suffering it entailed. The fingers were drawn into the palms, causing ulcers; ulcers also appeared upon the knees and buttocks; in fact, anywhere that the flexed parts touched other parts. It was said that the patient could live but a short time. Dr. Thomson gave a favorable prognosis, and had the patient douched three times a day with hot water, one-half to one hour at each sitting, with the result that the patient was soon able to walk out of the hospital with the contracted muscles relaxed. This was due to the suspension of the surface irritation, which acted upon the motor nerves, causing muscular contractions. Warm baths reduced the acidity of the secretions, the hyperacidity of the blood, and were also a powerful agent in their sedative effect upon the peripheral nerves; therefore they had a practical application of this method of the highest value in the treatment of excitable conditions of melancholia or maniacal conditions in the treatment of the insane.

Dr. Brooks H. Wells said that he could discuss only the psychical effect caused by surgical operations on the generative organs of women. He did not believe that surgical operations caused insanity, except possibly in rare instances, where a predisposition existed and where both ovaries were removed. Neurasthenic or hysterical psychoses might be greatly intensified by any operative procedure. On the other hand, he did not believe that insanity was ever caused by a surgical operation *per se*, yet he emphasized the fact that anything which tended to improve the patient's bodily condition might aid in curing any psychosis from which she suffered. Therefore operations should be done in the insane as in the sane, when such operation would remove physical pain or disability. In general, the milder and more recent the insanity, the greater was the indication for operation. In certain cases of acute insanity caused by sepsis, any operation which might remove the infection was urgently indicated, not only to benefit the physical condition, but the mental as well.

Dr. Achilles Rose said that the warm bath surrounded the surface of the body with an equal temperate medium, doing away with the fluctuation of the loss of heat, and acted soothingly. The thermic irritation of the peripheral nerve endings, while it lessened the sensation of pain, excited at the same time by way of reflex action, especially in the muscle, an increased metabolism. The fatigue was caused by more than normal accumulation of the products of this function. To oxidize and eliminate these products, a certain amount of metabolism was required. The specific effect of the warm baths was to afford immediate facility for oxidation. The changes of the physical and chemical condition of tissues, the augmentation of the organic function, the acceleration of the blood circulation, the dilatation of the blood-vessels, all depended on the specific action of the continuous warm bath on innervation. The effect produced by the thermal irritation of the extremities of the nerves was manifested primarily at the point of contact and along the centripetal organ itself, and was also conveyed from there by the centrifugal motor tracts. In general the products of inflammation and infection were taken up by the circulation and eliminated more extensively and quicker under the influence of the warm bath; at least such was the case in local affections, as, for instance, in arthritis and in erysipelas of the extremities; it also applied to cerebrospinal meningitis. He said the theory that had been prevailing that functional work was taken off the internal organs when there was a superabundant flow of blood to the skin, was erroneous. It had been proven that hyperemia produced by heated steam spread to the lower strata, and from this it followed that dilatation of the main vessels was not necessarily followed by contraction of the visceral vessels. It had been assumed that an increased blood supply to any part of the body would be followed by a diminution in another part. In reality, however, the quantity of blood was constantly changing and the regulation took place in the capillaries. The visceral vessels were dilated in really the same way as the skin vessels, and physiological observation had shown that, as the vessels became dilated, the blood flowed more rapidly. Physiology did not furnish a single instance in which the speed of the circulation decreased with simultaneous dilatation of the vessels. In the vascular system he said there were two forces, the pressure and the suction, supporting each other. The heart was not a mere pressure pump; it was as well a suction pump. The suction or siphon action not only played an important rôle in the cardiac function, but everywhere else in the body where vascular dilatation created a vacuum; the power of the siphon action caused an acceleration in the flow of blood as the vessels became dilated. Dr. Rose believed there was a great future for the employment of the continuous bath in all diseases in which increased metabolism was desirable as the principal condition of a cure.

Dr. George W. Jarman said that he was not so positive as some that people did not go insane from operations, and he referred to two patients in his own practice who went insane following a surgical procedure, and undoubtedly owing to the operation. One had a rapidly-growing ovarian tumor on both sides, both tumors being very large. He felt certain that the patient was sane. He operated, removing both ovaries; there was no healthy tissue to be noted in either ovary. Within six months this patient went completely insane; whether *post hoc* or *propter hoc*, he was unable to say. The same result followed in another case, where he did a complete hysterectomy for a large bleeding fibroid tumor. Here were two cases that came under his own direct observation in which insanity followed operation, and he said he was positive that he had seen two others operated upon by other gynecologists with the same result. This condition seemed to follow only where both ovaries were removed. He believed the deductions drawn by Dr. LeRoy Broun to be correct. Insane women require operation for the same reason that the sane did.

Dr. LeRoy Broun closed the discussion. He referred to a paper published in 1893, which gave valuable statistics and showed definitely that in the previous ten years there were only twenty-five patients who had been admitted to the hospitals in America and in Canada who claimed to have become insane subsequent to operations. This was indeed a remarkably small number.

SECTION ON MEDICINE.

Stated Meeting, Held May 22, 1906.

DR. WARREN COLEMAN IN THE CHAIR.

A Case of Infection with the Bacillus of the Intermediate Group.—Dr. CHARLES NORRIS and Dr. GORDON LINDSAY reported this case. A brief review was presented of the cases of infection with members of this group since the time that Bollinger first called attention to the gastro-intestinal symptoms which follow the ingestion of unsound meat, and the demonstration by Gaertner of the etiological connection of the *B. enteritidis* with an epidemic which occurred in Frankenhausen. The patient was admitted October 12, 1905, to the service of Dr. Nammack, at Bellevue Hospital, to whom the authors were indebted for the clinical history. Two weeks before admission to the hospital the patient had a chill, followed by fever and sweating, and immediately went to bed. Chilly feelings and fever were present every evening. She complained of abdominal pain, and had three or four watery diarrheal movements every day. There was a heavy brownish coat on the tongue. There was tenderness over the hepatic and splenic regions, and slight tympanites. The urine contained albumin and numerous hyaline granular casts. Diazo reaction was negative. Temperature 103° to 105°. Patient died within twenty-four hours of admission. Autopsy was performed twenty-four hours after death by Coroner's Physician O. H. Schultze. The anatomical diagnosis was: Diphtheritic enteritis, localized phlegmonous gastritis, localized suppurative peritonitis, extreme congestion of suprarenals, hemorrhagic infarction of lungs, fibrous pleurisy right lung, and hemorrhagic phlegmons of the subcutaneous tissue of legs. At the cardia of the stomach there was an area of infiltration and thickening, measuring 6 cm. in diameter. Wall of the stomach at this point was greatly thickened (15 to 20 mm.). The submucosa, muscular, and serous coats were edematous and infiltrated with pus. Peritoneal sac contained a small amount of free pus. No ulceration of the mucosa over the area of infiltration was present. Spleen was congested and large. Capsule was thickened, and covered with a thin layer of pus. Liver was large and congested. Kidneys showed a slight parenchymatous degeneration. The suprarenals were extremely large and hemorrhagic. The tissues behind the right suprarenal were hemorrhagic. The lesions in the small intestine began about three and one-half feet from the duodenum. The valvulæ conniventes were intensely swollen and covered by a greenish slough. The lower part of the ileum showed numerous areas of intense congestion, covered by greenish slough, which on removal left an ulcerated surface. Peyer's patches were not affected. The lymph nodes at the hilus of the mesentery were swollen and edematous. Cultures were made from the spleen, liver, gall-bladder, and the infiltrated area of the stomach. A bacillus of the intermediate group was obtained in pure culture from these locations, and a mouse inoculated subcutaneously with the intestinal contents died over night, and the same bacillus was recovered in pure culture from the heart blood.

A second case of infection with a bacillus of the same group was presented. The patient, except for chronic tonsillitis, had always enjoyed good health. On June 17, 1901, illness was ushered in by vomiting, malaise, and prostration. She entered the service of Dr. Wm. H. Thomson of Roosevelt Hospital, to whom they were indebted for the history and the privilege of reporting the case. Death occurred two days later, five days after the onset of the first symptoms. The vomiting was severe and continuous, marked by great thirst, fever, prostration, and delirium. Frequent bright, greenish stools were passed, and severe abdominal pains were experienced during the last day. The diagnosis was acute gastritis or gastroenteritis, with toxemia. Autopsy was made thirteen hours after death. The lungs were hyperemic and dry, without areas of consolidation. The bronchi were congested. Heart muscle was slightly pale. The intestinal serosa in places was dull. No fluid in the peritoneal cavity. Ascending colon was firmly contracted, and the rectum empty. Spleen was small, firm, and light red in color. Splenic follicles slightly enlarged. Suprarenals appeared normal. Parenchymatous degeneration of the kidneys. Stomach was almost empty, and free from odor. Slight injection of several of the rugæ. Stomach was otherwise normal in appearance; likewise the duodenum and pancreas. Gall-bladder contained greenish bile, and one small calculus. The liver was slightly enlarged, brownish-red in color, and cloudy on section. Mesenteric lymph nodes were enlarged, succulent, and hyperemic, and presented many hemorrhagic areas in their central portions. Peyer's patches of the lower ileum were somewhat enlarged and raised, and in places hemorrhagic. Otherwise the small and large intestines were normal. Anatomical diagnosis: Acute parenchymatous nephritis; acute hyperplasia of mesenteric lymph nodes, and of the lymphatic tissues of the intestines, due to an acute general infection. Cultures were made from the liver, spleen, kidneys, and mesenteric lymph nodes, upon Hiss' plate medium, gelatin, and glycerin-agar. From these locations a practically pure culture of a bacillus of the intermediate group was obtained. No typhoid bacilli were recovered. A few colonies of the colon bacillus were recovered from the spleen and kidney plates. Short bacilli which decolorized by Gram's stain were seen in the cover-slip preparations made from the organs cultivated. The blood-serum of the heart blood taken at autopsy did not agglutinate the bacillus isolated. The bacillus was found to correspond in every particular to *B. psittacosis* of Nocard, and to the "Seemann" paratyphoid bacillus of Schottmüller. The clinical course of the case, an acute gastroenteritis of unusual severity, differed widely from those which have been described under the name of paratyphoid fever. No history of the ingestion of unsound meat or other source of infection was elicited from the family in which the girl was living, and no other case of illness had been observed in the apartment. The difficulty of tracing the source of infection in large cities was pointed out, and they believed that the milk derived from cows suffering either from infected breasts or from gastrointestinal disturbances was responsible for many cases of this kind of infection. The two cases that they presented they considered could not be consistently grouped under the head of paratyphoid fever, since the cases of infection with a bacillus of this group had presented clinical pictures which could not be harmonized into anything like a distinct group of clinical symptoms or of histological appearance such as existed in infections caused by the typhoid bacillus. They believed that the opinion of Wells and Scott, that fatal paratyphoid cases were rarities, rather than overlooked through imperfect bacteriological studies, was not justified, the statement being true only of those cases of infection with the intermediate group, which ran a course similar to typhoid fever. The authors preferred to call the cases reported infections or septicemias due to bacilli of the intermediate group of intestinal origin.

Dr. WARREN COLEMAN protested against making a diagnosis, basing it upon bacteriological grounds. Very few of these cases are observed in the laboratory; it seemed to him that the classification should be based from a clinical standpoint and not from the bacteriological.

Instrument for Measuring the Coagulability of the Blood.—Dr. HARLOW BROOKS presented a modification of Biffi's instrument for measuring the coagulability of the blood.

A Case of Melanosarcoma.—Dr. C. N. B. CAMAC and Dr. M. I. SCHOENBERG presented this clinical report.

A Case of Toxemia of Pregnancy.—Dr. C. N. B. CAMAC reported this case.

The Relation of Serum Treatment to the Etiology of

Graves' Disease.—Dr. S. P. Beebe read this paper. He called attention to the fact that most attempts to cure Graves' disease by means of serum therapy had been based upon the assumption that the chief function of the thyroid secretion was to neutralize a toxin which arose during the course of metabolism. The results from these efforts had not, as a whole, been favorable. The basis for the serum which he had prepared was the hypersecretion theory of the cause of exophthalmic goiter. He outlined the arguments which he thought could not be reconciled to any other view than that of hyperactivity of the thyroid gland as the most important factor in the etiology of the disease. The results of experiments agreed with the hypothesis, and the following conclusions were drawn: (1) Highly specific cytolytic serum could be developed by the injection of liver nucleoproteids. Serum developed by the injection of liver nucleoproteids acted only on the liver; that developed from kidney nucleoproteids acted only on the kidney. (2) The serum was hemolytic and hemagglutinative in high concentration in test tube experiments, but in the concentration in which it was given in the animal experiments such properties were not exhibited. (3) A latent period of somewhat varying length was found to elapse between the administration of the serum and the onset of symptoms. (4) The animals in which the serum was developed, rabbits, gave serum of widely varying degrees of potency under the same treatment. The dogs to which the serum was given showed some variation in their reaction to the treatment. The same animal species had to serve as the source of the nucleoproteids as was later to be subjected to the injections of the cytolytic serum. Although this work with cytolysins prepared from dog tissues was the basis for the later preparations of an antithyroid serum, the method of developing the latter was not in all respects similar to the former. In order to neutralize the toxin, it was necessary to include thyreoglobulin in the injection mixture, and to inhibit glandular activity, and to act as a cytolytic factor the nucleoproteids were included. From the toxin we should develop an antitoxin, and reasoning from the results in experiments with dogs it seemed possible to develop thyreolysin from the nucleoproteids. A serum prepared in this manner was quite different in principle and properties from those properties obtained from thyroidectomized animals. In the preparation of proteids, normal human glands obtained at autopsy were ground to a fine hash by a special machine. From six to eight times the volume of 0.8 per cent. salt solution were added, and the whole thoroughly shaken and allowed to extract for twelve hours in the refrigerator, chloroform and thymol being added to prevent bacterial growth. At the end of this period coarser particles were removed by straining through gauze; the filtrate was centrifuged, and finally filtered to remove the finest particles. The clear filtrate contained three classes of proteids, namely, nucleoproteids, globulins, and albumins, the first two of which were to be used. Nucleoproteids were precipitated by the use of acetic acid to a frank acid reaction, using litmus as an indicator. He found a very marked difference between normal and Graves' glands in respect to this precipitation. Normal glands did not give a definite flocculent precipitate. The normal gland contained a very small proportion of nuclear material and a relatively large quantity of colloid. The precipitate was scant if the glands were not in a perfectly fresh condition. These proteids were twice redissolved in alkaline sodium chloride solution, and reprecipitated by acetic acid and ammonium sulphate solution. The proteids were then carefully removed and dialyzed in a parchment tube for four days, with the addition of thymol as an antiseptic. The contents of the dialysis sack were made feebly alkaline with sodium carbonate, and the solution, containing the desired proteids, kept in the refrigerator. Before injection the solution was filtered. In other cases he had tried to determine how a serum made from the nucleoproteids alone would compare with that made by including the globulins. If the injected material was acid in reaction or if the reaction was too strongly alkaline, a fatal peritonitis was likely to result. The animals used for developing the serum were rabbits, dogs, and sheep. For some reason dogs had not yielded an efficient serum and their use had been discontinued. It was not possible to predict the activity of a serum which any given animal might produce. Serum had been obtained from a large number of rabbits, both for the thyroid experiments and also in continuation of the work on cytotoxins, and it was possible to say that the best serum could be produced in large buck Belgian hares. The animals should be full-grown young adults, weighing from six to eight pounds, and should be well fed and cared for throughout the immunization period. It sometimes happened that an animal that seemed to be in prime physical condition failed to produce an active serum Injections were made into the peritoneal cavity. The proteid from ten grams of thyroid was employed for an initial dose in a six-pound rabbit, and a subsequent dose determined by a loss of weight. In regard to the properties of the serum, it had been found that the more active the agglutinating powers, the more marked the local and general reaction following injection. In order to have comparable conditions a definite method had been followed in making agglutination tests. The serum was highly specific in its agglutinating power. In regard to the hemolytic properties, he had no satisfactory evidence that the results of test-tube experiments applied in the body, and it was quite conceivable that a serum might be hemolytic *in vivo* in much more dilute concentrations than were required *in vitro*. Clinically, he had found that the serum treatment generally caused an increase in the percentage of hemoglobin and number of erythrocytes. Such a result might be due to the general improvement in health. As to the therapeutic effect, he had noticed a striking improvement in all symptoms within forty-eight hours. Cases which showed such behavior were generally those having an acute development, with a soft thyroid gland. Only a small proportion of the cases showed the striking immediate improvement just suggested. The majority showed gradual slow improvement, which though positive and undoubted, did not afford such convincing evidence of antitoxic action. The majority of cases treated had been of the chronic type. In these cases the gland was more cellular, and presumably the cytotoxic element in the serum could not act with sufficient vigor to cause immediate and rapid diminution in the gland. More rapid destruction might possibly result in a dangerous acute toxemia from the decomposition products of the gland. More recent experiments had demonstrated that it was possible to develop a serum of high therapeutic efficiency from proteids of the normal gland. If we found that the serum from the normal gland was quite inefficient, it would indicate the presence of a special toxin in the pathological gland. Chemical investigation had not revealed any special toxin. The most active serum which he had thus far developed had come from the proteids of certain glands removed at operations. Its activity had been expressed in its agglutinin reaction, local and constitutional reactions on injection, and its therapeutic effect. He accounted for this by the fact that the glands removed at operation were fresh. The differences in reaction which patients showed to the same serum, as well as the differences in the quality of the serum, had to be taken into consideration. If the hypothesis regarding the antitoxic and cytotoxic property, and their dependence upon the injection of thyreoglobulin and nucleoproteid respectively, was correct, we should find it advisable to vary the activity of the serum in respect to these two factors, in order to meet the indications in the various types of cases. Experiments of this sort were under way. When all conditions were considered, he believed it fair to conclude that the serum was an agent of considerable value in the medical treatment of Basedow's disease. It had been used in all manner of cases in which it was possible to make a diagnosis, and in some

cases where the diagnosis was doubtful. Only a comparatively small percentage of these had been of recent development. A small percentage of trials had resulted in failure, a much larger number in improvement, while an encouraging number had been cured.

Dr. Harlow Brooks said he was not able to offer any definite personal opinions regarding the etiology of Graves' disease. He said he had made six autopsies on those who had died of this disease, and he had studied them most carefully, and so many changes were found in the cardiovascular system and kidneys that he doubted if one was justified, from the post-mortem findings, in offering any conclusions as to the etiological factor concerned in the production of the disease. He had two cases under the serum treatment, which he briefly outlined. One case was apparently cured in the early stages of the disease. The second case was now in the third year of the disease, was apparently somewhat benefited by the treatment, but was not yet cured.

Dr. C. N. B. Namac said that the histological findings in the thyroid gland would be of great interest. For instance, the finding of this colloid-like material in the normal gland, which was practically missing in the diseased gland, would have a suggestion of not overproduction, but of the failure of production. This colloid-like material had been proven to be coagulated serum. The contents of the gland had been practically exhausted. With thymus extract, too, in these cases, improvement had taken place. He asked regarding the correlation between the thyroid, the parathyroid, and the thymus glands. The ox thyroid had some of the parathyroid mixed in, which he believed accounted for the benefit received.

Dr. Richard Weil said that the etiology of Graves' disease was a very complex thing, presenting so many variations. We could hardly expect to get a solution of the question of etiology from the action of therapeutic measures. Two cases had been observed over a course of seven weeks, receiving an energetic course of treatment with the serum, and these cases he reported in detail.

Dr. S. J. Meltzer said that Dr. Beebe claimed merits of the serum treatment based upon clinical evidences. Dr. Weil had told of two cases where the pathological serum was used without effect. Dr. Brooks had told of one case where the normal serum was used without much effect, and Dr. Rogers had made the statement that in three cases where the normal serum was used dangerous symptoms were presented. He said that anyone who had been in practice for a number of years knew how much reliability could be placed on the therapeutic measures employed in a disease like Graves' disease. In the literature could be found many cases, as Dr. Camac mentioned, in which the use of the thymus gland produced benefit. Dr. Meltzer recalled a case in which a patient was advised to go to the slaughter-house and take thyroids; by mistake she took thymus glands, with apparent benefit. Dr. Meltzer said that if Dr. Beebe relied upon the clinical evidence, he had no evidence at all. It certainly was a great era in medicine when one, two, or three injections of a serum could cure a disease which had lasted for ten, fifteen, or twenty years. Therapeutics to-day could not be taken as scientific facts, and if Dr. Beebe had any scientific basis for his conclusions regarding the advantageous use of the serum, he did not discuss it. Eight out of forty-five cases were reported cured at the recent meeting of the Association of American Physicians at Washington; but the clinical evidence showed they were only a short time cured.

Dr. S. P. Beebe said that in the beginning of Graves' disease nothing more than an enlarged gland was found, with the same conditions histologically as in a normal gland; but as the process went on there was a decrease in the colloid material; in the beginning there was an increase of it. Cases that had existed for eight or nine years had very little colloid in the cells of the gland. The thymus treatment to him was interesting, and he believed that in Graves' disease the thymus was involved in most cases. Many striking cases of improvement in Graves' disease had been reported. Of sixty cases reported, 90 per cent. showed improvement; the precise percentage of those cured he did not know. Dr. Meltzer had stated that the disease could be improved with almost anything; that was not the universal experience of those who had used the serum. With regard to suggestion, he said that he had repeatedly given Dr. Rogers a normal serum without Dr. Rogers knowing it, and he got no results whatever and he had wondered what the trouble was. The normal serum would give no results.

The Treatment of Purpuric Conditions and Hemophilia.—Dr. J. W. Coe said that in view of the cases reported, it seemed that the calcium, or probably the magnesium salts as well, offered the best hope of relief of any therapeutic measures thus far advised. There was theoretically some danger of causing thrombi formation, but this was slight if we determined with each case the minimum dose necessary to make the patient comfortable. Twenty or forty grains of the lactate once or twice a week was usually sufficient for the chronic cases. The large doses given a patient with acute hemorrhagic purpura was evidence of the harmlessness of the drug when such doses were necessary. The lactate was more easily absorbed than the chloride of calcium, and the taste was much more agreeable. All patients were directed to drink from one to two quarts of milk a day, and some of the improvement probably resulted from this, for Wright had shown that this accelerated coagulation. Summarizing the coagulation on the cases cited, it was seen that in two of the five it was decidedly above normal, in two others a high normal, and in the fifth a low normal. In all the cases the blood must have had a high content of calcium, so that the results in these experiments accorded with those of Wright and Knapp, who demonstrated by chemical means that a blood which contained a small amount of calcium was not always less coagulable, and also that a blood containing much lime salts was not necessarily more coagulable than usual. It had been claimed that the continued administration of calcium chloride was not effectual in keeping up an increased coagulability of the blood, but served to lengthen the time. Whether the effect of the lactate was different in this respect, or the improvement was due in chronic cases to the fact that they had taken the minimal effective dose, could not be said, but concerning the improvement there could be no doubt. In no case had the coagulation time been lengthened by the lactate. Two of his patients, who were intelligent, could, by carefully regulating the lactate, keep themselves infinitely more comfortable than for years. In the course of these investigations many blood investigations were made. The one constant feature was the small number of blood plates. This fact had been observed before, but he believed that sufficient importance had not been attached to it. By following such bloods from day to day, one could not help thinking that there was a close relationship between the fewness of the plates and the liability to bleed. In one case the plates suddenly disappearing, it was suggested fully forty-eight hours before it began that bleeding was about to occur. In two other cases blood taken the same day on which had occurred the most severe attack of epistaxis for months, a total absence of blood plates was noted, when they had previously been present, but much below normal. After the bleeding arsenic was given, with the idea of stimulating the hemogenetic organs. The fact that the blood plates rapidly increased in number after beginning the arsenic, argued in favor of the bone marrow as the seat of origin. As a means of counting the plates Pratt's method was probably the best. This consisted in diluting the blood with a 2 per cent. solution of sodium metaphosphate and obtaining the ratio of plates to the red cells. The actual enumeration was probably more accurate, but the technique was arduous and could not be applied in many cases. Heretofore nearly all observers had agreed that little concerning the plates could be learned from a stained specimen, but it

must be remembered that such investigations were made before the use of the dyes was common. He believed that by making evenly smeared thin specimens and using a stain like Wright's, Leishmann's, or the Jenner of Hastings, fully as good an idea of the plates could be obtained as by counting them. Secondary anemias always showed a marked increase in the plates. In all the cases reported by the writer there was at some time distinct anemia, but the plates were constantly reduced. Another point of difference between the two varieties of anemia was that a leucocytosis was usual with secondary anemias of purpura. Keeping these points in mind, one should always be able to differentiate between a bleeding from a hemorrhagic diathesis and a hemorrhage from other causes.

Dr. W. J. Simpson said he had used lactate of calcium to a considerable extent. He had come to the conclusion that as an hemostatic the chloride of calcium was very inefficient. Since beginning the use of the lactate he had had better results. He said he had used it in nasal and pharyngeal operations with benefit. In nose and throat work he had used lactate of calcium first, to prevent hemorrhage during operations, and, secondly, to guard against secondary hemorrhage. The effects of this agent had been excellent.

Dr. T. W. Hastings and Dr. S. J. Meltzer discussed the paper.

Are Preservatives in Food Injurious to Health?—Dr. E. E. Smith read this paper. He reviewed the causes which made food preservatives a necessity, and their history from the earliest times. Foremost among the questions for sanitarians to consider was the effect of the various food preservatives upon the health of those who consumed the food. The diversity of opinions of different authorities at the present time bespoke the difficulties and complexities of the question. Too often personal considerations entered into and interfered with an unbiased judgment on the question. Thus, even the physician whose practice included men with commercial interests was apt to look at things from their point of view. The best that we could do was to establish separate facts by individual investigators, verified by a sufficient number of investigators, and submit these facts to a final conclusive body of men so organized that personal interests would be neutralized. We could not as yet answer the food question, but we might contemplate how we should approach the consideration of the subject. We might view the subject in three divisions: (1) Are food preservatives themselves directly injurious to health? (2) May their presence in food be indirectly a cause of injurious conditions of food? (3) Is it expedient to permit their use in food? He dealt only with the first of these questions. The fact that we had no certain knowledge of the injuriousness of these preservatives from experience was evidence that the degree of injury was not such as to characterize these substances as poisonous. As to whether they produced any minor degree of injury to health such as would be designated as unwholesome, would have to be decided by the results of experiments. There was no doubt but that substances used as food preservatives could be used in such quantities as would be capable of producing injury to health. In the experimental study of this question we would naturally first determine the character of the injurious action of the excessive amounts of the substance in question, and next we would determine the minimum amount capable of giving rise to any injurious action, and finally we would determine whether the amounts used were sufficiently removed for safety from the minimum injurious quantity to justify such use.

Dr. Geo. B. Wallace said that he differed from Dr. Smith so far as the experimental work was concerned. A considerable amount of work had been done by some German investigator with boracic acid, and the conclusion was reached that there was a tendency for boracic acid to bring about gastric disturbances and diminished absorption of fat and proteid from the intestines. If boracic acid was used for months the results might be harmful; but where the experiment period lasted but a short time there were no deleterious effects.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

The Schott Methods of the Treatment of Chronic Diseases of the Heart. By W. Bezly Thorne, M.D., M.R.C.P. Fifth Edition. 8vo, 140 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $2.00. net.

Diet and Food Considered in Relation to Strength and Power of Endurance, Training and Athletics. By Alexander Haig, M.A., M.D., F.R.C.P. Sixth Edition. 12mo, 139 pages, illustrated muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.00, net.

The Extra Pharmacopœia. By W. H. Martindale, Ph.D., F.C.S., and W. W. Westcott, M.B.-Lond, D.P.H. Twelfth Edition. 32mo, 1,045 pages, leather. H. K Lewis, London, Eng. Price, 10s., net.

Operative Gynecology. By Howard A. Kelly, A.B., M.D., etc. Second Edition, Revised and Enlarged. Vol. I, 4to, 600 pages, Vol. II, 4to, 656 pages, illustrated, muslin. D. Appleton & Co., New York.

A Text-Book of Human Physiology. By Dr. Robert Tigerstedt. Translated from the Third German Edition and Edited by John R. Muriln, A.M., Ph.D. 8vo, 751 pages, illustrated, muslin. D. Appleton & Co., New York.

Christ Among the Cattle. By Frederic Rowland Marvin. Fourth Edition Revised and Corrected. 12mo, 58 pages, muslin. Pafraets Book Co., Troy, N. Y.

General Medicine (Vol. VI. Practical Medicine Series). Edited by Frank Billings, M.S., M.D., and J. H. Salisbury, M.D. 12mo, 363 pages, muslin. The Year Book Publishers, Chicago. Price, $1.25.

A Manual of Otology. By Gorham Bacon, A.B., M.D. Fourth Edition, revised and enlarged. 8vo, 485 pages, illustrated, muslin. Lea Brothers & Co., New York.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., and H. R. M. Landis, M.D. Vol. III, September, 1906. 8vo, 298 pages, illustrated, paper. Lea Brothers & Co., Philadelphia and New York.

Chemistry, General, Medical, and Pharmaceutical. By John Attfield, F.R.S., Nineteenth Edition. 8vo, 756 pages, illustrated, muslin. Lea Brothers & Co., Philadelphia and New York.

Eating to Live. By John J. Black, M.D. 12mo, 408 pages, muslin. J. B. Lippincott Co., Philadelphia.

Malattie dell'Orecchio, Naso e della Gola (Oto-Rino-Laringo-Iatriaq. By Dr. Tommaso Mancioli. 32mo, 540 pages, illustrated, muslin. Ulrico Hoepli, Milan. Price, L. 5.50

Essays in Pastoral Medicine. By Austin O'Malley, M.D., and James J. Walsh, M.D. 8vo, 363 pages, muslin. Longmans, Green & Co., New York. Price, $2.50 net.

Transactions of the Southern Surgical and Gynecological Association. Vol. XVIII. Edited by W. D. Haggard, M.D. 8vo, 456 pages, illustrated, muslin. Published by the Association.

L'Ame et le Systeme Nerveux Hygiene et Pathologie. By Auguste Forel. 8vo, 334 pages, illustrated, paper. G. Steinheil, Editeur, Paris. Price, 5 francs.

L'Autointoxication Intestinale. By Dr. A. Combe. 8vo, 568 pages, illustrated, paper. J. B. Baillière et Fils. Paris. Price, 12 francs.

[illegible] By Dr. Paul Maisonneuve. 8vo, 79 pages, paper. G. Steinheil, Editeur, Paris. Price, 2 fr., 50 c.

Tuberkulose-Arbeiten aus dem Kaiserlichen Gesundheitsamte. 5 Heft., 4to, 295 pages, illustrated, paper. Julius Springer, Berlin.

Procès-Verbaux, Rapports et Discussions du Premier Congrès de la Société Internationale de Chirurgie. Publiés par le Dr. A. Depage, Secrétaire général du congrès. Bruxelles, Hayez, Imprimeur des Académies Royales de Belgique, 1906.

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Dec.	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	January	7
Arkansas*	J. P. Runyan, Little Rock	Little Rock	January	7
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	January	1
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Nov.	13
Delaware	P. W. Tomlinson, Wilmington	Dover	Dec.	11
Dis. of Col'bia	W. C. Woodward, Washington	Washington	January	10
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Lewiston	April	2
Illinois	J. A. Egan, Springfield	Chicago	January	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. F. Kennedy, Des Moines	Des Moines	Dec.	11
Kansas	T. E. Raines, Concordia	Topeka	February	12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Portland	Nov.	13
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Nov.	13
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	January	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov.	26
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln	Nov.	7
Nevada	S. L. Lee, Carson City	Carson City	Nov.	5
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	January	1
Ohio	Geo. H. Matson, Columbus	Columbus	Dec	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Dec.	26
Oregon*	B. E. Miller, Portland	Portland	January	1
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	Dec.	—
Rhode Island	G. T. Swarts, Providence	Providence	January	3
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Houston	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	January	7
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Clarksburg	Nov.	13
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne	Dec.	5

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Arkansas.—Examinations in this State are held four times a year, on the second Tuesday in January, April, July, and October. Anyone entering the State and desiring to practise, prior to the time for a regular examination, may apply to any member of the board for an examination, and, if he passes this satisfactorily, can obtain a temporary permit to practise until the next meeting of the board. He must then pass the regular examination and obtain a certificate in the ordinary way.

Missouri.—The method of dealing with the old practitioner, in allowing 5 per cent. on examination for each five years of actual practice, initiated by the Illinois State Board of Health, has been adopted by the State Board of Health of Missouri. This has been called the "Illinois Method." Reciprocity, of course, cannot apply in the case of the physician who was in practise when the operation of the law in his own State began, and who consequently never passed an examination to qualify him to practise. If he moves to Illinois, however, and wishes to continue in the exercise of his profession, the State Board makes it easier for him by reducing the percentage which must be obtained, by five for every five full years the applicant has been in practise.

Alabama.—In this State there is not only a State Examining Board, but also a county board, so that a candidate can, to some extent, choose his examiners. But as there are sixty-seven counties in the State, so there are sixty-seven standards of examination. This condition of affairs is not desirable, and at its last annual session the State Medical Association determined that the system should be abolished, and that as soon as possible only one board of medical examiners, the State Board, should exist in Alabama.

STATE BOARD EXAMINATION QUESTIONS.

MICHIGAN STATE BOARD OF REGISTRATION IN MEDICINE.

October 9, 10, 11, 1906.

ANATOMY.

1. Describe the chief processes and general characteristics of the humerus.
2. What are the muscles of the forearm?
3. Describe the femoral artery.
4. Describe the collateral circulation after ligature of the common carotid artery.
5. Mention the principal convolutions of the brain. What are the ventricles of the brain?
6. What are the cranial nerves, and what do they supply?
7. Name the subdivisions of the alimentary tract and the accessory organs.
8. What are the lobes and fissures of the liver? Describe the gall-bladder.
9. What is the trigone vesical?
10. What are the muscles of the tympanum? What is the nerve supply to the tympanum?

PHYSIOLOGY.

1. Metabolism. Define and give classification.
2. When can a given amount of starch be said to have been completely digested?
3. Mention and give function of some one large system of veins beginning and ending in capillaries.
4. Give function of liver other than the secretion of bile—and mention varieties of blood found within the organ.
5. Blood. Trace its course through the heart and lungs, beginning at the right auricle. Describe the changes that take place.
6. Describe the function of the stomach.
7. Name all the valveless veins, and state why they have no valves.
8. Give function of kidneys.
9. State function of sympathetic nervous system.
10. Mention four elementary principles essential to health.

HISTOLOGY AND EMBRYOLOGY.

1. Name and describe the various forms of epithelial tissue.
2. Name the elementary tissues of special function.
3. Define and describe the lymphatic circulation.
4. Describe the formation and growth of the nails.
5. Give the structure of Peyer's patches.

CHEMISTRY AND TOXICOLOGY.

1. Define acid and base.
2. What is meant by "valence"? What is the valence of Ca., Na., and K.?
3. How is ammonia prepared?
4. Define the term anhydride.
5. Classify ferments found in the body. Name one member of each class.
6. Give the composition of the gastric juice. Give tests.
7. Give symptoms and treatment of poisoning from bichloride of mercury.
8. Describe opium poisoning. Distinguish between opium and alcoholic poisoning.
9. Describe cocaine poisoning.
10. Give symptoms of poisoning from the continuous use of acetanilide. Treatment.

BACTERIOLOGY.

1. Define bacteria; state methods for recognition, cultivation, and the conditions most favorable for growth, and the different ways of entering the body to produce disease.
2. Give details for the examination of sputum for the tubercle bacillus.
3. Describe method for determining the bacillus of tetanus, and state origin, form, properties, and growth.
4. What are ptomains, toxins, toxoids? What is an antitoxin—an antitoxic unit?
5. How would you make a bacteriological examination in suspected diphtheria? State dosage of diphtheritic antitoxin in pharyngeal and laryngeal cases, and in the different stages; also dosage for immunizing or prophylactic purposes.

SURGERY.

1. Local anesthesia. Describe agents and methods.
2. What is sepsis, giving symptoms and stages?
3. Describe the different amputations at the ankle joint.
4. Describe inguinal colostomy, giving indications for same.

5. Give differential diagnosis of dislocation of the femur.
6. Describe the complications of fracture, with treatment.
7. Describe osteomyelitis, giving etiology, differential diagnosis, sequelæ, treatment.
8. Give the surgical consideration of gastric ulcer.
9. Give diagnosis, cause, and surgical treatment of calculus.
10. Give diagnosis and surgical resources of intestinal obstruction.

GYNECOLOGY.

1. Describe the pathological effects caused by laceration of cervix, and all reflex disturbances therefrom.
2. What pathological conditions follow lacerated perineum; their immediate and remote manifestations, and, if operation be required, how soon should it be made, if not immediately following the injury?
3. What is vaginismus, its cause, and treatment?
4. What are the sources of streptococci poisoning in the puerperium, and in what per cent. of such cases does it occur? How should the local and constitutional manifestations of the disease be treated?
5. What is cystocele? Give symptoms and treatment.

OBSTETRICS.

1. External pelvimetry. Give procedure of taking external measurement, and enumerate the various normal diameters.
2. Tuberculosis. What influence does gestation have on the course of this disease?
3. Mention regulations for diet during normal pregnancy.
4. Give treatment of asphyxia of newly born.
5. Funicular presentation. Give etiology, diagnosis, and treatment.

PATHOLOGY.

1. Hyaline degeneration. Give its etiology and seats.
2. What is metabolism in diabetes?
3. Describe the lesions produced by excessive cold and heat.
4. Describe hypertrophy, and give its etiology and pathological anatomy.
5. Describe briefly the general structure of tumors, and discuss their classification.
6. Describe and give the pathology of congenital atelectasis.
7. Distinguish between fibrinous, catarrhal, purulent, and fibrous pneumonia.
8. Give pathology of chronic salpingitis.
9. Differentiate between caries and necrosis, giving etiology and pathological anatomy of the latter.
10. What is osteomalacia?

PRACTICE OF MEDICINE.

1. What are the remote effects of syphilis of the nervous system?
2. Mention some of the more common diseases of the heart; their diagnosis, prognosis, and treatment.
3. Describe pleurisy, both serous and purulent; diagnosis.
4. What is the prognosis in serous pleurisy?
5. What is the prognosis in purulent pleurisy?
6. What are the symptoms in gastric ulcer? Differentiate from duodenal ulcer.
7. Describe the characteristic physiognomy in typhoid fever, tetanus, and exophthalmic goiter.
8. Give the dietetic management of acute pneumonia, gastrointestinal indigestion, and chronic parenchymatous nephritis.
9. What is the clinical difference between diphtheria and streptococcic infection of the throat?
10. The cause and treatment of scurvy?

EYE, EAR, NOSE, AND THROAT.

1. What is trachoma; its cause; symptoms; course; prognosis; medical and operative treatment?
2. Describe the Argyll-Robertson pupil, and give its significance.
3. Describe the organs of the nerve supply of the function of hearing.
4. What is chronic nasal catarrh—its pathological anatomy, and treatment?
5. Describe the larynx and its cartilages—the laryngeal ligaments and the vocal cords.

MEDICAL JURISPRUDENCE.

1. What do you understand by the term Medical Jurisprudence?
2. A dead body is discovered in some sequestered spot, with or without marks of external violence. How would you proceed to make an examination of said body?
3. Differentiate between wounds inflicted before death, and those inflicted after death.
4. Define insanity from a medicolegal standpoint.
5. What constitutes malpractice?

HYGIENE AND PUBLIC HEALTH LAWS.

1. Define the term hygiene as related to the science of medicine, and state what you understand by health laws.
2. What diseases may develop from the use of impurities in water? Impurities in milk?
3. What deleterious gases accumulate in an imperfectly ventilated school room, and state amount of fresh air required per minute for each child; also state evil effects from the inhalation of air rendered impure by respiration.
4. Name most improved methods of disinfecting living rooms. State what precautions should be observed in typhoid fever, and with regard to the sputum of tubercular patients.
5. What diseases must be reported to the board of health? State fully the duties of the physician as required by our statutes.

MATERIA MEDICA AND THERAPEUTICS.

1. Explain what is meant by empirical use of remedies and their intelligent employment, and give examples.
2. Describe some of the so-called remedies much in vogue during the past fifty years which are now deemed worthless, if not harmful in certain cases.
3. Describe hypnotics, and the two classes into which they may be divided. Give examples.
4. What are anthelmintics? Vermifuges? Vermicides? What are the parasites against which they are directed?
5. What are the physical properties of amyl nitrite? Give its effects and therapeutics.

Nebraska State Board of Health.

May 29-31, 1906.

ANATOMY.

1. Briefly describe the animal cell and the reproductive cell.
2. Name contents of the mediastinum.
3. Describe the occipital bone, naming articulations.
4. Describe the pleural membranes, and name arteries and nerves.
5. Give origin and distribution of the 5th pair of cranial nerves.
6. Give origin and insertion of the flexor muscles of the thigh.
7. Give origin and distribution of the sciatic nerve.
8. Describe the orifices of the diaphragm, naming structures that pass through each.
9. Locate the arch of the aorta, and name its branches.
10. Describe the prostate gland.

PHYSIOLOGY.

1. Describe the red blood corpuscles as to (a) origin and fate; (b) form; (c) size; (d) number; (e) function.
2. What is understood by endocardiac pressure? State the causes of the pressure in the arteries, capillaries, and veins.
3. Give the accepted theory regarding the mechanism of the secretion of urine.
4. Give the successive steps in the digestion of a meal of roast beef and potatoes.
5. Describe the temporary and permanent teeth, and the usual age for the eruption of each.
6. Describe the normal sounds of the heart, and state how they are produced, and where they can be most distinctly heard.
7. Describe the bile and its uses. Give test for bile.
8. Name one property common to all blood leucocytes. Give some of their physiological uses.
9. Write briefly on internal secretions.
10. Discriminate between the corpus luteum of pregnancy and the corpus luteum of menstruation.

CHEMISTRY.

1. Define organic chemistry, atom, and element.
2. How modify cow's milk to approximate human milk?
3. Write an equation showing production of H. and laughing gas.
4. Give chemical tests for strychnine and arsenic.
5. Define fermentation and putrefaction.
6. Describe accurately Heller's test for albumen.
7. What reaction, normal or abnormal, may be produced by that test?

8. What average amount of solids in urine, and how estimated?
9. What are the common determinations in chemical examination of gastric juice?
10. What is the composition of proteids?

SURGERY.

1. Name the most common curvatures of the spine; give etiology, symptoms, treatment of lordosis.
2. Give etiology, symptoms, and treatment of empyema; give diagnosis of empyema, hemothorax, and bronchiectasis.
3. What is a ranula? Treatment.
4. Give differential diagnosis of the following conditions: Intussusception, floating kidney, stricture of pylorus, bubonocele, varicocele, and undescended testicle. Describe fully the technique of operation for varicocele.
6. How would you treat a lacerated and contused wound of the hand?
7. Etiology, symptoms, clinical history of carcinoma of breast. Describe in detail operation.
8. Give technique of amputation through middle third of the thigh.
9. What is the significance of pain in the abdominal region?
10. Describe in detail two of the most common varieties of clubfoot, and give surgical treatment of each.

OBSTETRICS AND GYNECOLOGY.

1. Describe the human embryo at the second, fifth, seventh, and ninth months, giving size and weight.
2. Describe the symptoms, and give the management of an incomplete abortion.
3. Describe a case of phlegmasia alba dolens, giving diagnosis, time of occurrence, cause, termination, and treatment.
4. Differentiate ovarian cyst, ascites, and pregnancy at beginning of fifth month.
5. Describe a case of puerperal fever, giving cause, time of invasion, symptoms, and course.
6. Name and describe fully the contents of the uterus at full term, before labor begins, detailing the presentation and position of the child most frequent, in an uncomplicated, healthy case.
7. Enumerate the symptoms which indicate the death of the child *in utero*, and state what course should be pursued in such a condition.
8. Describe in detail operation for repair of (a) lacerated cervix, (b) for complete laceration of perineum.
9. Give in detail the anatomy and physiology of the pelvic floor.
10. Name the different varieties of metritis; give causes, possible sequelæ, and treatment.

PATHOLOGY.

1. What is pathology?
2. Describe embolism and thrombosis.
3. Define and describe phagocytosis.
4. What is a neoplasm? Give some examples.
5. Describe sarcoma, fibroma, lipoma, myxoma, osteoma, and glioma.
6. Describe a primary and a secondary anemia, and give examples.
7. Describe pernicious anemia, chlorosis, leukemia.
8. Describe phlebitis, varieties, common causes, and course.
9. Describe and differentiate between gastritis, ulceration of the stomach, and cancer of the stomach.
10. Differentiate between arthritis deformans and acute polyarthritis.

PRACTICE.

1. Give symptoms of myxœdema. Give treatment.
2. Name the acute infectious exanthemata, giving period of incubation and specific bacterium of each.
3. Give diagnosis and treatment of acute eczema of the face in an infant.
4. Describe in detail the most common method used in the examination of stomachic conditions. Give diagnostic value of absence or presence of acids and juices, and significance of conditions found present.
5. Describe diagnostic significance of hematuria. Give etiological factors. How would you differentiate whether the kidneys or bladder were affected?
6. Give differential diagnosis of interstitial and parenchymatous nephritis. Give pathology of both diseases.
7. Give diagnosis, prognosis, and treatment of chronic pulmonary emphysema.
8. Give causes, diagnosis, and treatment of chorea.
9. Explain the diagnostic significance of the "knee jerk."
10. Give the abnormal heart sounds, and the point of greatest intensity of each.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending October 27, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	336	159
Diphtheria	238	25
Measles	51	—
Scarlet Fever	90	3
Smallpox	—	—
Varicella	42	—
Typhoid Fever	127	27
Whooping Cough	38	6
Cerebrospinal Meningitis	11	5
Malarial Fever	...	.....
Totals	933	225

The Cerebrospinal Fluid in Pernicious Malaria.—Nicola Pende has made a study of the cerebrospinal fluid in five cases of pernicious malarial fever of grave type, with reference to cytodiagnosis and physicochemical characteristics. The amount of fluid drawn was never more than twenty cubic centimeters. In normal cases there is a great deal of difference in the pressure of the fluid, which in some cases comes out drop by drop, while in others it flows continuously. In the five cases examined the cerebrospinal fluid was altered in its physicochemical properties as well as in its cytodiagnostic phenomena. The osmotic tension is diminished. There is hypotonia in cerebrospinal meningitis, and the same condition is found in the nervous conditions of grave cases of malarial infection. There is also in some cases lymphocytosis, which makes the diagnosis from meningitis extremely difficult. The percentage of chlorides is diminished in malaria. To understand these changes we must consider the serious alterations of the endothelium of the capillaries that has taken place and the obstruction of many of them by parasitic thromboses which interfere with the normal vascular circulation. There is a diminished molecular concentration of the fluid, lymphocytosis, and the presence of pigment and other poisons in the circulation.—*Il Policlinico.*

Treatment of Valvular Diseases of the Heart.—George Murray Waters declares that in fully compensated conditions no medicinal treatment is needed except keeping the bowels well regulated. The patient must lead a quiet, orderly life, free from mental excitement and bodily strain. Tobacco and stimulants must be used in severe moderation if at all; and the skin should be kept active by daily sponge and weekly tub baths of short duration. Moderate exercise, though never to the extent of fatigue or embarrassed breathing, is indicated, but even this should be supervised by the physician in charge. Especial care should be taken in the management of the aortic heart defect, and the patient repeatedly warned against excesses of all kinds and especially sexual indulgence. In the condition of lost compensation, absolute rest is of the first importance. The clogged venous system must be relieved by depletion. This is best accomplished by the use of cathartics such as calomel, blue mass, or compound jalap powder. Digitalis alone or combined with strychnia in moderate doses will strengthen the heart force, regulate the rhythm, and add tone to the organ generally. The writer adds that special symptoms, such as dyspnea, cardiac distress, gastric disturbances, cough, insomnia, and renal inactivity are relieved chiefly by means of the general rules set forth. Special treatment may be required in each according to the condition of the individual case.—*The Columbus Medical Journal.*

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Original Articles.

A PLEA FOR A MORE RATIONAL THERAPY IN TUBERCULOSIS.*

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As long as tuberculosis was looked upon as hereditary, little or no headway could be made in its prevention. It was considered to be a matter of fate, and consequently surrounded by an air of hopelessness. The discovery of the specific cause not only paved the way for the overthrow of the heredity theory, but also made it possible for the disease to be discovered earlier than before, thus bringing it before the medical practitioner at a time when many cases are curable.

Pathologists had seen evidence of healed tuberculosis postmortem; but now the profession is able to find the bacilli in the sputum and then see the patient get well. The evidence of the curability of tuberculosis has been accumulating so rapidly that we know the disease which was considered to be one of the most hopeless a quarter of a century ago is now recognized, not only as the most curable of all chronic diseases, but the proof is overwhelming that, if diagnosed early and treated intelligently, it will afford a mortality even lower than pneumonia and typhoid fever. In spite of all this evidence, we not infrequently hear physicians say that they never saw a genuine case of consumption get well. Such statements reveal not only a limited experience with tuberculosis, "for genuine cases of consumption do get well," but they also show a lamentable lack of appreciation of the most valuable lessons connected with this disease, viz., that tuberculosis can be diagnosed early before breaking down occurs, and before the advent of that complex condition known as consumption, and that the earlier the diagnosis the more favorable the case for treatment. That most cases of far advanced consumption die is not evidence against the curability of tuberculosis, simply a rebuke to the carelessness of the patient in not seeking medical aid soon enough or to the medical attendant for not exercising sufficient skill to detect it when the disease presented.

To-day the curability of tuberculosis is established. No one conversant with facts will deny it. But the question which will bear discussion is, are we curing as many of the cases as we should? Are we curing as many as we can? Are we doing as much in the way of treatment of this disease as is possible, or are we falling into a dangerous rut? Are we worshiping at the shrine of fresh air, good food, and hygiene, and closing our eyes to many other important and helpful measures? Have we advanced only a degree beyond the fetiches of cod-liver oil and creosote to fall worshipers at the altar of fresh air? True, the advance is welcome. It is a wonderful improvement, but whoever would treat a disease so serious as tuberculosis should worship at no shrine except results. He should endeavor to use all remedies and measures which will aid in producing a cure.

As a basis for such a discussion as this, it is well to inquire into the causes which lead up to a cure in tuberculosis. What is it that makes it possible for the organism to overcome the tubercle bacillus and the results of its activity?

Osler is quoted as saying, "Make the patient fat and the local disease will take care of itself," thus making the cure a matter of nutrition. Great stress is laid upon nutrition by all phthisiotherapists, yet all who have had a wide experience know that it is not all. There are many exceptions to Osler's statement. Often we see patients who are thoroughly nourished, and who are progressing favorably toward recovery, begin, through no indiscretion of their own, to go down. The disease does not "take care of itself." Nature cures most of her cases of infectious disease, in spite of a low grade of nutrition. The cure of tuberculosis is more than nutrition. If it were not, we would not see men in robust health become tuberculous; yet every one of us has seen this occur. True, a well-nourished man does not stand in much danger, comparatively speaking, of becoming infected. The inoculation, if of a few germs only, will not produce the disease; however, if there be a great number of germs of a low virility, or fewer of a very virile strain, even well-nourished individuals will not be able to overcome the germs.

Where tuberculosis has made any considerable advance in the system, we have a tendency for it to spread. So many bacilli may invade new tissue at one time that no matter what the nutrition of the patient, the bacilli will gain the day. We, who follow these cases carefully, see this thing happen very often. So, if we can administer any remedies which will increase the natural resisting power of the body and keep the healthy parts bathed in serum rich in antibodies, we are doing more than we can by nutrition alone.

Modern studies in immunity show that bacterial diseases produce toxic elements, which stimulate the cells of the organism to the formation of defensive bodies, which thus tend to cure the disease. To this tuberculosis is no exception; however, for certain reasons, the discussion of which we cannot enter into here, the toxins in this disease do not seem to be set free in the proper manner to be effective, so the disease does not limit itself when it has become well started. If this failure on the part of nature to furnish the natural stimuli for the cells can be supplied artificially, or if the defensive bodies themselves can be supplied, then another aid to cure has been found.

That the use of certain culture products will supply this want has been thoroughly established. The original tuberculin of Koch, his later preparations, as well as numerous preparations made by other men, when used properly, will stimulate the cells of

*Read before the Arizona Medical Society at its meeting in Phoenix, Arizona, April 24 and 25, 1906.

the individual suffering from tuberculosis to the formation of defensive bodies, as is shown by the increase of the agglutinating and opsonic power of the blood. Further proof of their value is shown in certain cases of tuberculosis which fail to respond to ordinary open air, dietetic, and hygienic treatment, but improve at once when tuberculin is added to the treatment. There are also certain sera which seem to furnish the antibodies already formed which are of some value, the best known of which are the Fisch, Maragliano, and Marmorek.

Aside from the matter of nutrition and culture products, we can do much for those suffering from tuberculosis by alleviating certain symptoms, relieving certain complications that may be present, and putting the diseased organs in that condition which is most favorable for a cure. These, then, are the lines upon which we should base a rational therapy for tuberculosis. Not any one of them should be employed to the exclusion of the others, but all should be worked out into one harmonious whole. Of those remedies and measures which have been put forth as "cures" for tuberculosis in the past, nearly all have some merit, although the merit is not always where it is supposed to be. Cod-liver oil certainly increases nutrition when well borne, although there are more palatable ways of accomplishing this end. Creosote will often improve nutrition by its action upon the digestive system. When given in too large doses, however, even in suitable cases it does harm. It also has a beneficial effect upon the mucous membranes of the air passages, but to think that it will kill the bacilli by its antiseptic action is positively absurd. The pneumatic cabinet is based upon the idea of exercise for the lung; nitrogen gas, upon rest for the lung. The various culture products find their basis in the natural defenses of the organism. Perhaps none of these measures is wholly bad, but none of them should be put forth as a "cure;" they are aids to a cure. They, and many more remedies and measures, find a rational basis for employment in the treatment of certain cases of tuberculosis, but they are not to be used in a routine manner. The treatment of tuberculosis is a matter of careful individualization.

Recognizing the importance of nutrition, it should be one of our chief aims to maintain this at the highest point. Everything which interferes with it must be eliminated. The hygienic-dietetic-open-air treatment, which is deservedly so popular throughout the world to-day, has for its basis the betterment of nutrition. One of the most noticeable, and perhaps the most important effect of the open-air treatment of tuberculous patients, is its effect upon digestion and assimilation. Coincident with the beginning of this treatment we note a marked improvement in the appetite. When digestion has been previously slow, and attended with more or less unpleasant symptoms, we not infrequently observe a disappearance of all embarrassment. Assimilation improves, and the patient takes on flesh. The effect of the open air is to enable the patient to digest and assimilate more food and to furnish the appetite which demands it.

The best effect of open air can be obtained only by using it discreetly. While in itself harmless, doubtless more lives have been wrecked while trying to follow this mode of treatment than by any other measure. Open air is not a cure for tuberculosis; it is only a measure for the production of a certain end. If used properly, it is one of the greatest aids to nutrition that can be employed; if used improperly, it will defeat its own purpose.

An individual suffering from tuberculosis should not be told that open air will cure him, but that proper living in the open air will be one of his greatest aids. Many an individual has eaten good food and remained in the open air all the time, and yet killed himself. The oft-repeated advice of well-meaning eastern physicians to their patients to "go West, live in the open air or rough it, and keep away from physicians," is responsible for the deaths of hundreds of patients annually. Not open air, but the proper use of open air, is one of the chief aids in the cure of tuberculosis.

Open air should be supplemented by proper food and carefully regulated rest and exercise to make it most effective. While we recognize that rest is a wonderful aid to nutrition, and that overexertion decreases the resisting power of the patient, yet there comes a time in the treatment of nearly all cases of tuberculosis when exercise short of tiring will increase nutrition and hasten recovery. The physician must be the judge when this time comes.

Beside prescribing open air, a carefully selected diet, and the proper amount of rest and exercise, the physician must control and regulate the entire life of the tuberculous patient. He must guide him even to the minutest detail of his life. Nothing of importance should be left to the patient's judgment until he has proven himself competent.

Another measure of great value in improving nutrition is hydrotherapy. The careful and intelligent application of water offers us one of our most valuable and most flexible aids to nutrition, and should never be omitted.

Climatic conditions affect the state of nutrition very decidedly. While sunshine is not indispensable to the treatment, as is shown by the results obtained in many places where there is a large percentage of cloudy days, yet those of us who are fortunate enough to be able to give our patients the benefit of almost constant sunshine realize its value. Its cheering and tonic effect is a very potent factor in aiding nutrition. A climate which not only affords an opportunity, but which invites the patient to be out of doors a great portion of the time, and which also affords a large amount of sunshine, is a great aid in the treatment of tuberculosis.

Modern research points to the possibility of the laboratory giving us cures for all bacterial diseases. Vaccination of bacterial toxins is assuming an important and rational place in treatment. It is now about fifteen years since the first efforts at specific treatment in tuberculosis began. This first trial of tuberculin marks one of the saddest pages in the history of the treatment of this or any other disease. Never were hopes raised higher, and never were they dashed lower. The misuse of tuberculin in the early nineties not only resulted in the death of many patients, but it so embittered the medical profession against it that it will still take time before the remedy can be assigned its proper place. During all these years those suffering from this disease have been denied the help which could have been rendered by this immunizing treatment. The persistence of a few men, however, such as Spengler, Petreschky, Turban, Goetch, Trudeau, and von Ruck, who were convinced of the value of tuberculin, has finally made the profession reconsider and give a more favorable opinion.

Laboratory experiment, as well as clinical evidence, shows that tuberculin will aid in the cure of tuberculosis. Its effect on local lesions, such as can be seen by the eye, in the larynx, for example, proves its value beyond question. The increase in the agglutinating and the opsonic power of the blood

of those patients who are treated by it, shows that its action is that of a specific immunizer.

Tuberculin stimulates the cells of the body so that they throw out more specific antibodies into the bloodstream, and should be employed in the treatment of this disease. So we can do more than nourish our patient; we can artificially increase his resisting power. We can make him more able to destroy the tubercle bacilli and the toxins which they form.

Since the important researches of Wright and Douglas upon the opsonic power of the blood have shown us that Buchner and Nuttall were right in ascribing an antibacterial action to the serum of the blood, we can see the wisdom of keeping areas which are infected with tubercle bacilli well bathed in serum. The action of the Finsen light is to cause an irritation, with an increased flow of blood to the part. Poultices to certain lupus patches have hastened their cure. Bier's method of treating tuberculous joints, as well as acute inflammations, by passive congestion, can be explained in this same way. In this way we can also explain the action of violet light upon pulmonary tuberculosis. By causing an active hyperemia it is aiding in bathing the parts with serum. Thus, all these measures which tend to divert more blood to the part involved are of value, and should be used in connection with tuberculin, for by so doing we are bathing the diseased areas with a blood which is rich in antibodies.

Another measure which is of value is the giving of raw meat or muscle juice. Experiments of Richet and Hericourt, also of Philip and Galbraith, show definitely that the employment of raw meat and raw meat juice causes a much greater retention of nitrogen than when the meat has been cooked. It is also the belief of these writers that there is something specific against the muscle waste, in the ingestion of the raw muscle.

In order to be most successful in the general therapy of tuberculosis, all distressing symptoms and complications should be carefully managed. It is rarely necessary to give medicines for cough, night sweats, shortness of breath, loss of appetite, indigestion, or fever of the early or moderately early cases. The careful management of the patient, putting him to rest in the open air, together with the proper hydrotherapeutic measures, will usually relieve all these symptoms very quickly. Organic diseases of the stomach should receive most careful attention, for a good stomach is indispensable. The bowels should also be kept active. In more advanced cases, sometimes these distressing symptoms will have to be relieved by appropriate drugs.

Among the most distressing complications are dry pleurisy, which can be best relieved by strapping, and pleurisy with effusion, which should be removed if it causes embarrassment of the heart or respiration; tuberculous laryngitis, which will yield most readily to tuberculin, local cleanliness, rest, and wet packs; and tuberculosis of the bowel, which will require careful regulation of the diet and such harmless astringents as bismuth in large quantities, or lead and opium in intractable cases. The tuberculous patient is also subject to all other "ills that flesh is heir to," and when present they must be treated carefully.

Mixed infection is a very serious complication. Tuberculosis does not long remain a simple process. Germs, other than the tubercle bacilli, soon gain entrance to the diseased areas, thus complicating the condition. Just what part mixed infection plays in the pathology of tuberculosis is as yet uncertain, but the advent of other germs is generally looked upon as being a serious complication. Mixed infection unquestionably hastens destruction of tissue in the local areas and causes the liberation of toxins which are responsible for many grave constitutional disturbances.

Mixed infection is doubtless present early in the infection, long before we are wont to recognize it by the symptoms which are usually ascribed to it, and it is undoubtedly the part of wisdom always to bear this in mind in treatment. When the symptoms have once become marked the patient should be put to bed in the open air. The temperature should be relieved by sponging, the patient should be encouraged to eat plenty of good food, taking solid food at that time of the day when the temperature is low, and relying on milk, eggs, and muscle juice mostly at other times. All distressing symptoms should be relieved, and the patient kept in as cheerful a condition as possible. Every effort should be made to keep up the patient's nutrition. It is not at all uncommon to find patients who are thus carefully treated run a course of fever for weeks, and yet gain in weight.

The most dangerous germ found in these cases of mixed infection, and the one which is nearly always present, is the streptococcus. If we can overcome it, the other germs will usually cause little trouble. A very efficient remedy against these germs is streptolytic serum. The difficulties in its use are that it is expensive, it requires to be used in large quantities for a long period, and its action is not always certain. But it is undoubtedly a remedy worthy of use and a great aid in this usually-considered helpless condition.

Aside from mixed infection, fibroid changes, necrosis, and in some instances calcification, occur in the diseased areas. From the blocking up of the blood-vessels in the lung there is a damming back of the blood, with more or less passive congestion of the internal viscera; the heart has an extra burden thrust upon it, and its muscle, weakened by the strain, often becomes damaged. Cavities form in the lung; contraction occurs. That part of the lung which is not affected hypertrophies, and becomes emphysematous, thus adding more burden to the heart; the general system is poisoned by the toxin; wasting occurs, and all organs suffer more or less. This gives us the picture of consumption. This is what we are trying to relieve when we attempt the treatment of advanced cases of tuberculosis. Tuberculosis is a disease, consumption a condition resulting from the disease. When we have done all we can for such cases we have done little enough. Fresh air will do much for them, but it comes far from being the only thing that can be done. Every such case must be made a study of itself, and then, by careful attention to details of treatment, much can be done, even for many of these advanced cases.

Until the medical profession becomes more alert at early diagnosis, we cannot hope to treat our cases in that early stage when at least three-fourths of them should be cured, but must direct our efforts toward the relief of the cases as we find them. There is one thing gratifying, however, in the treatment of advanced cases of tuberculosis, and that is that much more can be done for them than is usually supposed. Some of those who are even far advanced can be cured, many of them can secure an arrest of their disease, and most of them can be improved.

In order to obtain such results, however, we should worship no idols, neither cod-liver oil, creosote, climate, open air, or tuberculin. We should grasp the full meaning of the pathological process

with which we are struggling, and then endeavor to apply our therapeutic measures accordingly, remembering that it is far better to attack an enemy at every vulnerable point than at one alone. While I am a firm believer in the open-air, dietetic, and hygienic treatment of tuberculosis, and recognize it to be one of the greatest advances of modern therapy, yet I should dislike very much to see our therapeutic efforts stop here. My plea is for a broader view and a more rational therapy, not only one based on nutrition, but one which considers the disease in all its varied aspects.

NEURASTHENIA.

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NEURASTHENIA as a definite form of nervous disease was first described by Beard of New York, in the *Boston Medical and Surgical Journal*, 1869, followed by a paper read before the New York Academy of Medicine in 1878; he further elaborated the subject in a work entitled "Nervous Exhaustion," which reached a second edition in 1890; later he published "Sexual Neurasthenia," where he attempted to place a number of different nervous troubles under the same heading, including hypochondria, hysteria and sexual perversion.

Neurasthenia is a disease most often found in hospitals in its uncomplicated form, but often accompanied by other morbid conditions which mask its symptoms, rendering diagnosis difficult. During the writer's connection with Mount Hope Retreat, and also in private practice, he has had the opportunity of observing a considerable number of cases, and he attempts in this paper to give a symptomatic picture of the disease for the benefit of the general practitioner, who is usually the first consulted by the patient. The treatment by the general practitioner is usually entirely symptomatic, consisting of bromides in increasing doses, with the addition of hypnotics, the various coal-tar products, and headache powders, with little or no effort to treat the underlying condition; the patient becomes worse or fails to improve, finally consulting a specialist or entering an institution.

These patients usually come from the city, though, perhaps, if the statistics of the relation of the cases to the population from which they are drawn were obtainable it would be found that there was little or no difference; many of the cases I have met with were in farmers and country business men. In practically all cases, however, the disease affected those who worked with their brains, and it is very rare indeed to observe it in the laboring classes, suggesting that want of physical exercise is a factor in its etiology. The disease appears in adult life, rarely in youth, and probably never in children. In my experience there has been a greater proportion of cases among women than men, but this probably is incidental to the nature of the practice.

There are certain principal symptoms, or, better, stigmata, of the disease, some psychical, some physical, a knowledge of which is necessary for a diagnosis.

Headache, which exists in about 90 per cent. of all cases, has the peculiarity that it is at its worst in the morning, gradually decreasing as the day advances, and disappearing at night, only to recommence the following morning; during the day there are usually slight ameliorations of the pain, especially at meal time, increasing again as digestion advances. The pain is a heavy, dull, numb feeling in the head, with perhaps occasional lancinating pains or paroxysms of intense agony. The decrease of the pain at meal time is of short duration, for when digestion is at its height the pain is increased, accompanied by flushings of the face, giving the appearance of plethora with a feeling of intense malaise and depression. Toward evening the headache declines; usually there is a severe attack after the evening meal, after which it may disappear entirely during the night, so long as the patient keeps the recumbent position; but, on standing up, it returns, and in the morning commences again.

The headache is either bitemporal, surrounding the head like a vice, or more often it is in the occipital region, the whole of the back of the head to the nape of the neck having the sensation of a grinding or crackling, which may be so intense that the patient imagines he can feel the sensation with his hand. At other times the whole head is affected; the skull may feel too small for its contents; at others there is a sensation as if the brain were boiling; the forehead is flushed, giving a sensation of heat to the hand, but the body temperature is normal, or nearly so.

Though the headache ceases or lessens at night, the patient suffers from insomnia which may be of either of two kinds. In one he falls into profound, heavy sleep immediately on lying down, only to awake in two or three hours to spend the rest of the night in tossing about till morning, a victim of a thousand miserable sensations, turning from side to side from a feeling of discomfort, especially in the lower limbs, of shooting pains, prickling, stinging, and general teasing sensations, followed by a feeling of numbness which is almost unbearable. He may doze for a short while at last, but he is compelled to rise, tired and unrefreshed, the headache returning as soon as he puts his feet to the floor. Should he doze for a few minutes the arm under the body becomes numb, paralyzed, dead; in a minute or two the sensation disappears, but the condition is renewed, and he takes all sorts of uncomfortable positions to avoid its repetition, effectually dispelling any tendency to sleep; at other times the lower limb appears to have a sort of shock or sudden contraction, which is very disquieting. In other cases complaint is made of a feeling of emptiness in the epigastrium, with gurglings in the intestines, more marked in the morning. Urination is often frequent during the night, suggesting Bright's disease or diabetes, but there is no sugar in the urine, and only traces of nucleoalbumin are present. Under the above conditions sleep is evidently impossible, though toward morning the patient may pass into a doze or sleep for a short time, but is soon compelled to rise as tired and miserable as when he went to bed.

The other form of insomnia differs from the above in that immediately after the evening meal the patient has apparently an almost uncontrollable desire to sleep, but once in bed he is wide awake, the entire night being spent in short snatches of semi-unconsciousness, in which he hears the clock strike every hour; the least noise seems to his tired senses magnified one hundredfold;

the pressure of the bedclothes irritates him, and he passes the whole night without any sleep which is of benefit to him. It is evident that the patient can have no desire for his daily avocations, the headache commencing as soon as he gets up, and the day of misery and ennui repeating itself. Another peculiarity is that as the patient is dropping off to sleep he awakes with a sudden start, and his rest is disturbed by "night terrors," delusions, feelings of dread and disturbing dreams.

Another symptom is a vertigo presenting special characteristics. It is not like the vertigo of Ménière's disease, in which there is a true loss of equilibrium and the patient falls—it is a sensation of emptiness of the head, accompanied by a weakness of the limbs; a cloud comes before the eyes, all appears gray with black moving spots, objects near and far are confused and seem to be on the same plane. These phenomena resemble accommodative asthenopia, which often coexists with vertigo; examination of the eye reveals little or nothing; the pupils may be dilated, usually equal in size, reacting a little slowly to light, and the retina is normal. These attacks of vertigo are most apt to occur on the patient rising from the recumbent, or sitting, to the erect position, or when any emotion is evoked, however slight. A form of agoraphobia may exist, the patient being afraid to walk along the street or to pass through a door, for fear the walls will fall upon him, or an open space may produce intense sensations of fear. The vertigo shows itself most often in the morning, and, like other symptoms, it is less frequent during and immediately after meals, generally disappearing in the evening, and never occurring in bed.

In some cases there are pains in the spinal column, either in the cervical or at the junction of the lumbar and sacral vertebræ. The pains radiate in the former case toward the shoulders and arms, causing a sensation of weight and oppression; in the latter case the same feelings are experienced in the lower limbs. The patient locates the pain in the column exactly, but examination reveals nothing, except perhaps a slight hyperesthesia; there may be a sensation of feebleness and numbness suggesting paraplegia, but the sphincters are normal; the reflexes may be normal and equal on both sides, though exaggeration is not infrequent. The headaches and vertigo suggest organic brain trouble, the pains and symptoms from the cord suggest spinal trouble, and mental depression, insanity; and careful analysis of the clinical symptoms is necessary to form a correct diagnosis.

The stomach and intestines are also more or less affected in neurasthenia, suggesting autointoxication; there is retarded and difficult digestion; on rising the tongue is coated and the mouth sticky; the appetite is poor; during eating and immediately after the painful sensations are milder, or they may disappear altogether, the general condition improving. A light breakfast is usually well digested, but it is necessary that another light meal be taken in an hour or two, or the patient will suffer. The condition of the stomach is one of continuous secretion of hydrochloric acid with a want of motility; it is therefore necessary that the neurasthenic be fed frequently at short intervals, and on no account should he eat a large meal. Although the hydrochloric acid is being continuously secreted in small quantities, the glands are in a state of fatigue, and are therefore unable to respond to the demand for the excess of hydrochloric acid necessary for a large meal. After a test meal the analysis gives various results; usually the amount of free and loosely-combined hydrochloric acid is normal, or slightly reduced, though at times there is a marked hyperchlorhydria. The test meal is never a very satisfactory method of diagnosis in a nervous patient. In the first place, the Salzer meal is not very appetizing, and is more than the patient cares to eat, consequently the "psychic juice" is not secreted in full amount; the Ewald breakfast is not appetizing, especially with American bread; in Germany the "Brödchen" is much more pleasant to the palate, which may have something to do with the larger amount of free hydrochloric normally found in examinations made in that country. To give a nervous patient a test-meal at 8 A.M., another at noon, and to draw his stomach at 1 P.M., during which time he is on a mental rack as to the terrible ordeal he is about to go through with the tube, is not calculated to produce normal digestion and give accurate results. Judging from the urinary analyses in these cases, one would consider that there was a marked hyperchlorhydria, and I believe that there are cases in which not only is the secretion continuous to a greater or less degree, but, on taking a full meal, there is a hypersecretion of hydrochloric acid which prevents proper peptic, and also retards pancreatic digestion. In many cases the digestive symptoms are secondary to the nervous trouble, though careful attention to the diet and digestive organs mitigates the suffering, especially the insomnia. It is evident that no disease can be treated successfully unless the nutrition is normal; the absorption of partially-digested proteids or imperfectly-converted sugars cannot but be detrimental to the general condition. Tympanites and acid eructations follow a heavy meal consequent on the general atony of both the stomach and the intestines, producing a certain amount of autointoxication, but the pathological condition of the nervous system is often primary, the digestive symptoms disappearing as the patient improves. The intestinal trouble consists usually in obstinate constipation, with occasional attacks of diarrhea, in which, on microscopic examination, there will be found blocks of mucus, evidence of membranous enteritis, a very common accompaniment of neurasthenia. In women there is often a mucomembranous dysmenorrhea. The general condition of the patient suffers, and flesh is lost rapidly, though in some cases the "embonpoint" is preserved.

The urine is clear, limpid, and large in quantity, suggesting hysteria, though at times it may be less abundant and dark in color. The urea nitrogen is low, the ammonia and uric acid normal, but the residual nitrogen is markedly excessive, and there is usually a marked phosphaturia; the proportion of chlorides to nitrogen is below normal, while the carbon-nitrogen factor is normal or low. Indol and ethereal sulphates may be high or normal, depending on the condition of the bowels, but the neutral sulphur is invariably high.

The heart suffers with the other organs; the maximum pressure is low in proportion to the mean, and extremely variable. Under normal conditions the taking of food raises the mean pressure, but in neurasthenia so marked is the arteriolar contraction of the abdominal vessels, that an intense flushing of the face takes place, with a

feeling of congestion of the brain, and a beating of the cephalic arteries. At other times, owing to the relaxation of the abdominal vessels, there is an accumulation of blood in the abdomen, causing a general sensation of cold; the hands and feet, especially, being cold. To a certain extent the vertigo is due to the same cause. On taking the erect position from the recumbent there is under normal conditions a rise of arterial mean pressure of about 10 mm. Hg., and a slight increase of the pulse rate; in the neurasthenic, on the contrary, there is a fall of mean blood pressure, on taking the erect position, of from 20 to 30 mm. Hg., and a very marked compensatory increase of the heart rate. This is, however, insufficient to overcome the want of arteriolar contraction, and an anemia of the brain is the consequence, producing a vertigo for a few minutes until the arteriolar contraction takes place, when the vertigo passes off; in other words, the compensatory vasoconstrictor mechanism necessary for the erect position is deficient, reacting slowly to the stimulation of standing up.

The physiology of the blood pressure has been but recently investigated, since Leonard Hill and Bernard introduced their sphygmometer, it being the only one which will record both the maximum and mean pressures; the Riva-Rocci instrument usually used in this country is of little use clinically, as it records only the maximum pressure, and, owing to its depending upon the sense of touch of the operator, the results are usually too low. Oliver and Hill have shown that any mental work or emotion raises the mean blood pressure, and it follows that continuous mental strain upon the vasomotor nerves will result in their enfeeblement; and, further, Sir William Broadbent has shown that continued mental strain produces a dilatation of the heart, the result of the continuous increased back pressure upon the ventricle. The effect of mental strain in the causation of neurasthenia will be referred to later, but enough has been said to show that primarily the neurasthenic condition is the result of a decreased sensibility or accommodative power of the vasomotor system.

Angina of a special type is common in neurasthenia; there is a little precordial anxiety, but no painful radiations to the left arm; the thorax seems as though it were held in a vice, the pulse, instead of being, as in true angina, small, thready and intermittent, is full and regular; the heart beats are strong, even violent; the sounds distinct. Sometimes there is hyperesthesia in the precordial region resembling somewhat the condition found in hysteria; though the attacks of this angina are severe, there is no danger of collapse. There is also a shortness of breath, oxygen hunger, the patient sighing frequently.

The functions of the genital organs are depressed, loss of power and desire are frequent causes of complaint. Coitus may be possible, but is followed by a feeling of intense lassitude, with increase of pain in the lumbosacral region. More rarely, the patient is troubled with nocturnal erections which coitus does not relieve, sometimes accompanied by emissions, increasing the weakness and mental depression. At other times coitus is incomplete, ejaculation following almost immediately an erection. These symptoms suggest disease of the cord. In other cases, each defecation is followed by an emission of a thin fluid containing spermatozoa; in this condition the prostate and vesicles should be examined for abscess and the discharge stained for gonococci. The writer treated a case which appeared to be a typical one of neurasthenia without headache, in which the patient recovered completely on the treatment of the prostate for a gonorrheal abscess; the spermatorrhea is due to atony of the seminal vesicles, and can be cured by cold douches in the rectum. Cases with the above symptoms have been classed as sexual neurasthenia, melancholia being a marked psychic symptom.

Another symptom, which, however, is rarely present, is a certain amount of tremor, usually slight, vibratory, affecting at the same time both the upper and lower extremities; the tongue is very rarely affected, but there may be a tremor of the lips, causing difficulties of speech which suggest paresis.

The mental condition presents a general depression of the faculties without perversion; usually the mental activity is increased, sometimes decreased; intellectual work becomes difficult, and, above all, the inability of the patient to make a decision on any matter, however trivial; the memory, though slow, is intact, and the judgment is normal. With an effort the patient is usually able to recover his mental aptitude completely, differing in this form from the true melancholic, in whom there are mental perversions, and from the paretic, who has more or less lost control of his ideas. The neurasthenic will describe his mental condition exactly, and the psychic depression from which he suffers without any impossibilities, exaggerations, or delusions, except that he has an exaggerated view of the severity of his case, with the idea that he is going insane, and that he will never recover. Restlessness is often a marked feature, the patient being unable to remain in one position, or to sit still for more than a minute or two at a time. Irritability in some cases is very marked, the patient breaking out into uncontrollable fits of temper on slight provocation, perhaps swearing and breaking the furniture, the symptoms resembling those of acute mania. Timidity may be a very marked symptom.

Constitutional neurasthenia is another form of the disease, according to Charcot and other writers, but the symptoms are the same, the subjects being those who are either congenitally, or from some acquired condition, less able to bear the nervous and mental strain of the struggle for existence, and who, therefore, more easily succumb to the strain of life. I do not believe that the pressure of civilization is greater now than in former years; if more work is accomplished, more responsibilities carried by the individual, than formerly, it must be remembered that the advantages of modern methods and appliances render such efforts more easy; and, besides, if the working strain is greater the opportunities for diversion and recreation are also greater than formerly. There is, perhaps, one condition in modern life which tends to produce nervous and physical breakdown, and that is that to-day the large majority of business men take but little exercise.

Our forefathers either had to walk, to ride horseback, or drive; in the latter case the time consumed on a journey was longer than in these days of express trains, and was to a great extent a rest from business cares, combined with a

change of scene and environment, which could not but be beneficial to the overworked man. We, however, see men to-day who have led active business lives for half a century or more, hale and hearty at eighty years of age, and again we see men whose responsibilities have been light, and whose anxieties have been few, succumb to nurasthenia.

In the so-called constitutional neurasthenia the clinical history reveals but little of the etiology of the case; as an example, a young man of thirty comes to the office with many of the symptoms detailed above; in his history is neither heredity, alcoholism, nor syphilis—those ever-ready refuges for the perplexed diagnostician; he may never have had any severe illness, and possibly the ordinary diseases of childhood have been so mild as to have almost escaped his recollection; he is possessed of a private income which renders him free from the anxieties of working for a living, and is, perhaps, working in some office more to employ his time than for pecuniary gain.

There is one point, however, in many of these cases which show the cause of the neurasthenic condition, viz., that puberty was delayed, that the patient ceased to grow at the age of about sixteen or seventeen; that he was backward mentally, not perhaps as calculated from the standard of the school, but rather in his psychic development, associating with boys younger than himself, and finding amusement in boyish or childish games. At about eighteen or nineteen the average boy becomes a man; he puts away childish and boyish things; but in this case he has remained a boy till perhaps twenty, or even longer. In women, in whom this form of neurasthenia is more common than in men, menstruation may not have commenced till eighteen or nineteen years of age, and always been more or less scanty and irregular. The genitalia of the male are often small and poorly developed, and there has never been much sexual desire. Such cases are not true neurasthenia; they may belong to the class of cases known to the French as "type Loraine," or they may be cases of infantilism, in which the thyroid has failed to develop fully, or has atrophied early; or they may be cases of anangioplasia. The mean blood pressure is high; the arteries feel hard and small, suggesting arteriosclerosis; the heart beat is rapid and forcible. These cases do not belong to neurasthenia, properly speaking, their etiology being very different, and consequently their treatment also. The prognosis, as regards perfect recovery, is, however, not good; the symptoms may be ameliorated, but the patient will probably spend the rest of his life under the care of a physician, dying at a comparatively early age from some intercurrent disease, owing to the reduced resistive power of the system.

True neurasthenia is found among those men who lead strenuous lives, having great responsibilities and anxieties, without taking a sufficient amount of recreation and physical exercise, combined with irregular and bolted meals. The importance of the digestive apparatus cannot be overestimated; its complications render it liable to get out of order; consider that the saliva, the pepsin, hydrochloric acid, enterokinase, pancreatic juice, with its three ferments, the bile, the succus entericus, and other ferments, which are as yet imperfectly understood, have all to secrete sufficiently, and in proportion, in order to convert the food into the condition in which it is most easily absorbed and assimilated, and that, if any links in the chain are omitted, the nutrition will suffer, not only from decreased assimilation, but also from the absorption of imperfectly digested food products which must act as poisons to the system.

The etiology of neurasthenia can be classed under four heads: (1) Mental strain; (2) disturbances of digestion, malnutrition, and autointoxication; (3) toxemia from infectious diseases; (4) traumatism, and shock.

It is a matter of general knowledge that emotions affect the digestion, anxiety and grief cause loss of appetite, coated tongue, constipation, etc., producing malnutrition and autointoxication, which, in their turn, act upon the already overstrained nervous system. In many cases of neurasthenia the digestive disturbances antedate the nervous symptoms; in others, the nervous symptoms are the first to appear, the one reacting upon the other in a vicious cycle.

Toxemia from grip, scarlet fever, diphtheria, and other diseases sometimes leaves the patients a nervous wreck. Traumatism and shock are a cause of the same condition as seen in those nervous troubles dating from railway accidents, etc.

It is apparently the vasomotor nervous system which is principally affected. All emotions act upon this system of nerves. Leonard Hill has shown how mental work raises the mean blood pressure 30 to 40 mm. Hg.; if the nervous mechanism is continually under a severe strain for months or years, it is evident that it will become fatigued, and refuse to act normally to stimuli. I have observed that there is a reversed postural blood pressure in neurasthenics; under normal conditions, on taking the erect position from the recumbent, the mean blood pressure rises from 10 to 30 mm. Hg., while in neurasthenics, under the same conditions, there is a marked fall, sometimes as much as 40 mm. Hg., with a great increase in the pulse rate, showing that the vasomotor system fails to respond to normal stimuli. In neurasthenia the blood pressure is variable and erratic, falling suddenly when it would normally rise, producing vertigo; at other times rising excessively, causing flushing of the head and neck, while the hands and feet may be cold. The vasomotor system regulates the blood supply to the various organs, and it seems probable that many of the nervous symptoms classified as separate diseases are due to a defect of the vasomotor nerves controlling the blood supply to some particular portion of the nervous system, the variations in the symptoms depending upon the part affected.

There is yet another etiological factor which is of great importance from a therapeutic standpoint, viz., a gouty constitution. In these cases the urine is intensely acid, and the carbon nitrogen factor very low. The most marked symptom is irritability of temper, sometimes so great as to resemble an attack of acute mania.

There is no specific treatment in neurasthenia. Removal of the cause of worry, if possible, increased physical exercise, anything to interest the patient in some form of recreation, attention to the digestion, to the removal of the toxins from the system, and to the building up of the whole system in every possible way. Drugs, such as the bromides, the coal-tar derivatives, etc., should be used as little as possible on account of their

effect upon the assimilation, the circulation, and the blood; the coal-tar preparations are particularly contraindicated on account of their destructive action on the red corpuscles. Bromides depress the heart and the vasomotor system, and should be used with caution. The difficulties of the physician are much increased by the intractability of the patient; he will refuse to leave his business, or perhaps he is unable to do so; he will not take his treatment regularly, will absent himself from the office for a week or two at a time, returning perhaps to scold the physician because he is not better, or perhaps he will seek a new doctor every month; it is no uncommon occurrence to have a patient produce a pocketful of prescriptions from different physicians, upon all of which he will dilate with a curious mixture of astuteness and perverted knowledge, which would be amusing if it were not tedious. The first duty of the physician is to gain the patient's confidence, and, by firmness and sympathy, hold him to his treatment, a task often of great difficulty, requiring great tact and patience.

ELECTRICITY IN THE TREATMENT OF DISEASE.*

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In opening this discussion upon the therapeutic applications of electricity, it is very evident, at the outset, that in the short time permitted by the program I cannot make any adequate presentation of the subject, and I know that a systematic review of all the medical uses will not be expected of me. Current medical literature and the textbooks are crowded with the reports of an immense number of diseases and morbid conditions in which electricity, in one form or another, has been recognized as serviceable in therapeutics. Perhaps the best use I can make of the time at my command this afternoon will be to devote it to the consideration of a few applications that I have found especially serviceable in my own experience. In concluding, I will make a comment based upon personal observation with regard to the proper field of usefulness of this potent force. In order to obtain the best results in practice it is important that we shall bear in mind the limitations of electricity in clinical medicine, because if these are disregarded we may expect to meet with certain disappointment. Extravagant claims made by too enthusiastic advocates are not only unjust to this valuable therapeutic resource, but they are also unjust to the patients who are led to expect impossibilities.

I think it will lead to a clearer view of electricity from the medical standpoint if we lay aside for the moment any preconception we have in our minds with regard to its being a mysterious, life-giving force, capable of working miracles upon the human body, and as being at all times constructive, energizing, and beneficent in its effects in pathological conditions. This I know is the popular idea, which has been largely founded upon the seductive and boastful advertisements of charlatans, who have found this a fruitful field in which to work on the credulity of the ignorant public. "There is no sacred disease," said Hippocrates, "or all diseases are equally sacred." So we may say with regard to remedies, there is no mysterious remedy, or all remedies are equally mysterious.

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Mercury, arsenic, and other potent drugs may, according to circumstances, act as caustic agents and destroy tissues, or they may act as tonics and favor physiological changes. In the same way electricity may be used in medicine to destroy tissue, or, on the other hand, to favorably influence metabolism, depending upon the form in which it is used and the skill with which it is applied.

Let us now briefly consider the forms in which electricity is utilized in medical practice. We observe, in the first place, that it is used both indirectly and directly. Among the indirect applications of electricity are those in which it is employed as a source of heat, light, magnetism, and x-rays. As illustrations of the former I may mention the galvanocautery, the electric light, and the Roentgen apparatus; also the electro magnet. Illustrations of the direct application are the galvanic, the static, and the induced currents, obtained from the ordinary medical coil or from the large commercial dynamo. The latter, however, is much more powerful than is required for medical purposes, but it may be reduced by transformers and controllers, or "stepped down" so that it can be used therapeutically, as well as for heating and lighting the doctor's office.

The first point that I wish to make is that electricity is always the same in itself, but, like the other agents I have named, it may be given in different dosage and in different ways, so that entirely different therapeutic results may be obtained. Success in therapeutics, whether in the use of electricity or any other remedial agent, depends, as we know, very largely upon the personal skill and good judgment of the physician who makes use of it. Incidentally, I may observe that this method of regarding the subject will help to explain why certain conditions, such as neuralgia, may be treated successfully either by galvanism, static electricity, or by the Roentgen ray; these apparently different forms of electricity being skilfully employed to produce apparently the same local effects.

Taking a broad view of the subject, we observe that electricity is employed in therapeutics to accomplish certain definite ends. The clinical fact that these objects may in some cases be attained by several different methods or forms of application I have already alluded to. It is also true that others apparently, so far as we know, can only be accomplished by special apparatus and by a single method or technique. In fact, particular means are often employed to obtain definite results, because at present they appear to be the best which have yet been devised to fulfil the special conditions.

With regard to the modus medendi, or the physiological action of the agent, we may observe that electricity may be used to produce the following effects:

1. To produce local necrosis, or an eschar. Limited applications may not go so far as to cause tissue or cell destruction, and may only produce local vascular changes, or, in other words, they may act as rubefacients or counterirritants. Powerful currents, if passed through the body, will, on the contrary, abruptly terminate and abolish all physiological processes.

2. To disturb the electrical relations of the elements of nerves and muscles. This is shown by muscular contractions, produced when a nerve trunk and a voluntary muscle are brought within the influence of a current of appropriate strength. It is to be observed here that the electricity primarily gives no additional strength to the nerve or muscle, but simply calls into action energy which is already

there. However, by its power to call into play the latent energy of the muscle, it causes movements of the muscle, which in turn leads secondarily to increased blood supply and improvement in nutrition. Illustrations of this are very common, as in treating muscular paralysis.

3. To modify metabolism. Its effects in this direction are well illustrated by the Roentgen apparatus. Exposure to the *x*-rays causes local nutritive changes in the skin, the linugo hairs fall out from the operator's hands, the skin becomes glossy and thin from the atrophy of the glands, chronic ulceration may occur, which in turn may be followed by malignant disease. It has been repeatedly observed that unguarded exposure of the body to the *x*-rays causes degenerative and atrophic changes in the deeper parts, especially in the fundus of the eye and in the generative organs. In therapeutics this inhibitory and atrophic action may be skilfully directed against cancerous or other new growths. The latter having less power of resistance than normal tissue, are made to undergo retrograde change and to wither away. This is especially noticeable in epithelioma of the skin, and also in accessible organs such as the rectum and mammary gland.

4. To act as a temporary stimulant to nutritive processes, and especially to the nervous system and the circulatory apparatus. This is illustrated by the good effects upon nutrition produced by the static current and electric bath, in anemia, neurasthenia, atonic dyspepsia, chronic rheumatism, and incipient tuberculosis.

5. To accomplish certain local effects by stimulating physiological functions. This is shown in the use of electricity to increase the flow of milk from the mammary gland in the nursing woman. The use of the rectal electrode in overcoming constipation I have called attention to elsewhere. The increased function of the ovaries produced by the induced current or by the static spark is very useful in overcoming dysmenorrhea. The systematic application to the scalp causes improved nourishment of hair follicles, and not only prevents baldness, but also actually increases the growth and thickness of the hair.

6. To destroy parasites upon the surface of the body. Many infectious diseases of the skin caused by vegetable microorganisms are promptly cured by the *x*-rays. Among these I may mention tinea favosa, and tricophytina, tinea barbæ, trichorrhexis nodosa, impetigo contagiosa, acne pustulosa, pityriasis versicolor, lupus, both exedens and erythematosa, and others that will occur to you from the accounts given in the medical journals.

7. To produce electrolysis. By means of needles introduced into the skin and the passage of a suitable galvanic current, decomposition of fluids and solids occurs, and as a result there may be absorption of new growth. This is utilized in treating keloid or hypertrophied tissue of the nose or throat, and in the destruction of pigmented moles, and the removal of superfluous hair. It also has an application in the treatment of stricture of the urethra by Neumann's method.

8. To produce intense light. The method, introduced by Finsen, which has been modified by the use of the electric source of illumination, has yielded really remarkable results from its action upon lupus, and on some superficial malignant growths. The electric-light bath has been vaunted as a great restorative agent, but its utility is doubtful. In its operation the entire body is exposed to several hundred incandescent lights. In studying its effects it is difficult to separate the effects of the heat of the bulbs (which acts like a Turkish bath) from the effects of the light itself. We know that light is very irritating to the nervous system, and that the intense sunlight of tropical regions makes these unfit for a permanent residence for white races of men, as shown by Major Charles E. Woodruff of the United States Army in his recent work on the "Effects of Tropical Light on White Men." At all events, the electric-light bath does not act like the electric bath, but simply as a light and heat bath.

9. To produce high degree of heat. I need not stop to speak of the uses of the galvanocautery in surgery. It is a complete substitute for the actual cautery, and is superior to it when used as the caustic loop in removing vascular growths on the tonsils, especially in cases of hemophilia.

10. To produce magnetic effects. The electric magnetic coil is used to extract iron fragments from the eye in surgery. It is also utilized in the electric balance for detecting the location of a foreign body such as a bullet embedded in the tissues.

The use of the *x*-ray in photography and in diagnosis, as in the skiascope, does not properly come within the province of the therapeutic applications of electricity.

I have now mentioned quite a number of useful applications of electricity in medicine, and I have by no means exhausted the list, but I fear if I pursue the subject further I may exhaust your patience.

The second practical point I wish to make with regard to electricity, and with which I will close these rather desultory remarks, is this, and I regard it as a most important one:

Electricity, in most cases, is to be regarded as only an adjuvant to other treatment. While giving the special electric application we should also give appropriate remedies to act upon the glands of excretion and secretion. We should consider the state of the blood and give hematinics to increase the blood corpuscles and hemoglobin, or give antidotes to certain toxins, or eliminants to carry off gouty, rheumatic, or other pathogenic agents, in addition to our prescription of electricity. Massage, exercise in the fresh air, a proper diet, regulation of habits of the individual, all these are accessory agents and should be conjoined with the electrical treatment if we wish to obtain the best results. Such, indeed, is the intelligent medical use of this agent in the hands of the qualified physician. Without such therapeutic accessories, electricity, like massage, is very restricted in its usefulness and tends toward charlatanism.

POST-OPERATIVE GASTRIC PARALYSIS —ACUTE DILATATION OF THE STOMACH.

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THROUGH the excellent monograph and review of forty-four collected cases by H. C. Thomson, in 1902, the attention of the profession was especially directed to the subject of acute dilatation of the stomach. Twelve of Thomson's cases were associated with surgical operations, and recently reported cases are nearly all of this type.

Of stomach dilatations, the ordinary acute postprandial type is seen not infrequently, is easily recognized, and is readily overcome by prompt

treatment; on the other hand, because of its lack of recognition, and because of its influence on the prognosis in surgical conditions, the post-operative paralytic type is of the greatest clinical importance.

I have recently seen three cases of acute dilatation of the stomach, each representing a distinct type of the affection. One was of the post-operative paralytic type; the other two were without paralysis, and were due, respectively, to the ingestion of a heavy meal in a chronically dilated stomach, and to the artificial dilatation with gas of a stomach which had an obstructed pylorus. In these three cases the precursors of the dilatation, and the condition of the stomach during the dilatation, were different.

Case I.—Miss N., aged twenty-three years, an actress, seen with Dr. Harold D. Meeker. Family history negative as to nervous or gastric trouble; one brother has tuberculosis. Ten years ago the patient had mumps, followed by severe pain in the left lower abdomen, lasting a week (oöphoritis accompanying mumps?). Never any gastric derangement, but some constipation, so that she had the habit of taking salts about once a week. Five years ago she had a gonococcus infection. On January 21, 1906, Dr. Meeker performed a curettage, and removed both tubes and one ovary. The operation lasted one hour and fifteen minutes, under gas and ether anesthesia, with Bennett inhaler. General condition throughout operation poor. After the operation her temperature was 100°, pulse 100, respiration 22. For six hours she had the usual post-ether nausea and discomfort, then complained of severe epigastric pain, and shortly afterwards vomited some yellowish fluid, with small amounts of mucus. Eight hours after operation the pain was very severe, and ⅛ grain of morphine sulphate was administered hypodermically. Temperature, 101.6°, pulse 120, respiration 22. A pint of hot saline solution given by rectum was retained. There was much retching and vomiting every ten or fifteen minutes.

At 11 P. M., nine hours after operation, the stomach was washed out, and a large quantity of bile-stained fluid removed. Following this lavage she did not vomit for two and one-half hours, and till 9 A. M., vomited only four times, though she slept but little. The next day the pain continued and the abdomen was greatly distended, so turpentine stupes were applied, and 1-80 grain of eserine sulphate was given hypodermically, and repeated an hour later, to move the bowels. A small quantity of milk, given at 9 A. M., was vomited half an hour later, with several ounces of greenish fluid. Retching continued, and she vomited four or five ounces of bile-stained fluid about every hour. At noon (temperature 101°, pulse 132, respiration 22), an enema containing turpentine, glycerin, and milk of asafetida was administered, and three hours later the bowels moved freely, with the expulsion of some gas. In spite of this the distention and the vomiting continued. At 4 P. M., lavage, and the administration of six ounces of peptonized milk through the tube, gave rest for three hours. At 6 P. M. she was given a nutrient enema, and at 7 P. M. the vomiting began again.

At 7:30 P. M. I saw her for the first time. As had been noted by Dr. Meeker, there did not seem to be any marked tension in the region of the abdominal incision above the symphysis, but there was great ballooning higher up. On pressure two inches below the umbilicus there was no pain and no marked resistance, but, on pressing above the navel, the pain was intense and the resistance pronounced. The vomiting was not expulsive; it was preceded by much retching, and the fluid seemed to flow out of the mouth without great effort. A stomach tube was passed, and a large quantity of rather grumous, deep-green fluid was removed. It contained a few particles of orange, which we discovered had been surreptitiously given by a friend just before the operation, and was without free hydrochloric acid, though acid in reaction. Lavage was continued for ten minutes, and then six ounces of peptonized milk were given through the tube. The pulse was 140, and feeble. She did not vomit again for four hours, and then the vomitus was almost free from milk.

The diagnosis of acute paralytic dilatation of the stomach having been made, the patient was put on hypodermics of strychnine sulphate gr. 1-30 every three hours, and was to be given by mouth one dram of chloroform water every two hours, each dose to be followed in five minutes by two drams of peptonized milk. She was to have a nutrient enema twice a day, and lavage twice a day, six ounces of peptonized milk to be left in the stomach after each lavage. Only twice again did the patient vomit, each time about four hours after lavage, a greenish fluid, containing a few milk remnants.

By the next evening the distention was much less and the patient was comfortable, so the amount of peptonized milk to follow the chloroform water was increased to half an ounce. The maximum of temperature for the day was 100.5°, of pulse 120, of respiration 22. The following day, the third after operation, the maximum temperature was 99.5°, pulse 113, respiration 20.

The amount of peptonized milk was steadily increased, and three days later the patient was getting three ounces every three hours. On January 30, nine days after the operation, the chloroform water, lavage, and nutrient enemas were discontinued, and the diet made plain milk. From this time she rapidly graduated to light diet, and then to modified regular diet, without further disturbance.

Case II.—Miss A. S., aged forty years, a cook. Was summoned to her in great haste, and found her lying on the floor, upon which she had collapsed a few minutes previously. The story was that, while at dinner, half an hour earlier, and after having eaten heartily of boiled ham, cabbage, etc., she had felt faint and dizzy, and had complained of pain in her stomach. She had belched some wind and tried to vomit, but could not; and presently, while on her way to a couch, had collapsed on the floor, where I found her. On my arrival her expression was anxious, she seemed unable to speak, and gasped for breath, her skin was cold, cyanotic, and sweating, and her pulse rapid and feeble. The abdominal wall was fat, but there was marked ballooning of the whole abdomen, so that it was tense, like a drum. The navel was at the most prominent part of the swelling. Having only a pocket case with me, I hastily administered a hypodermic of 1-10 grain of apomorphine, and, mixing some rhubarb and soda tablets with water, gave this by mouth. In a moment she belched much gas, then began to heave, and presently brought up an immense quantity of thick fermenting liquid, which contained large chunks of ham, cabbage, potatoes, etc. The vomitus filled a good-sized basin, and

smelt strongly of fermentation. The relief was almost instantaneous, and in a few minutes her pulse was strong and below 100, her breathing was easy, and with our assistance she got into bed. I saw her the next morning, and, though still a bit weak, she seemed to have recovered from the attack, and complained of hunger. She told me then that she had suffered much from digestive trouble, was always bloated, frequently belched gas, and now and then would vomit food that she had eaten twelve or fifteen hours before. Her teeth were in bad condition, and her stomach percussed to about two inches below the umbilicus. I did not see her again.

Case III.—Mrs. R. S., aged fifty years, housewife, was referred to me in the Department of Applied Therapeutics at the Vanderbilt Clinic, as a case with disease of the digestive organs. Her chief complaints were: belching of large quantities of gas, occasional vomiting of sour fermenting food, and the loss in weight of 60 pounds in six months. On inspection there was seen constant moderate peristalsis, beginning at the left free border of the ribs and passing at first downward, then to the right below the umbilicus. Just to the right of the mid line, and from two to three inches below the navel, was an area of intermittent vibratory palpation, with a loud, harsh auscultatory gurgle, and an indefinite mass felt uncertainly through a tense rectus muscle. The test breakfast gave a large quantity of stomach contents, with a total acidity of 44, no free HCl, some organic acid, no lactic acid, rennet ferment very active. The stool gave a strong reaction for occult blood. This was a case of pyloric stenosis, presumably carcinomatous, with apparently a large stomach displaced downwards.

In order to note the influence of inflation on the position and palpability of the tumor, and in the belief that the stomach capacity was greater than normal, unusual (and unjustifiable) amounts of sodium bicarbonate and tartaric acid were administered. Almost instantly the patient cried out, and fell back in collapse, and the stomach was seen tightly blown up. The patient's face was deathly pale, the pulse almost imperceptible. A stomach tube was hurriedly passed, and large quantities of frothy fluid escaped, with immediate relief to the patient. Half an hour later she walked home without assistance. She refused operation.

These three cases, then, may be summarized as follows: In Case I. the acute dilatation was due to paralysis of the stomach, pylorus, and probably part of the duodenum, a condition which quickly followed an operation for the removal of both tubes and one ovary. The retching and the bile-stained stomach contents indicate that the pylorus was open, and was presumably involved in the paralysis. The bowels were not paralyzed, as they moved freely under treatment. There was no history of any previous stomach derangement.

Noteworthy in this case, as in some of the other reported cases, is the large amount of secretion, in appearance like that obtained from the fasting stomach in cases of gastrosuccorrhea, with the addition of bile; and the fact that vomiting does not seem to notably lessen the distention, or belching bring forth any large quantity of gas.

Would it not be better to employ the term "Gastric Paralysis" for these post-operative cases, as it is directly analagous with the much-used term "Intestinal Paralysis," and is more indicative of the actual condition than is the name "Acute Dilatation?" Besides, in these cases, the dilatation is undoubtedly only incidental to the paralysis.

In Case II. the acute dilatation supervened upon a chronic dilatation. The immediate etiological factor was an abnormally large meal of material so imperfectly masticated that it would not pass the pylorus, ingested into a stomach which already contained an accumulation of fermenting contents. The pylorus was active, and, probably owing to the iritating fermenting stomach contents, tightly closed; the stomach wall still retained its muscular power; and the nerves and centers were intact and functional, as shown by the prompt response to the hypodermic of apomorphine. Surely in this case there was acute dilation *without* paralysis.

In Case III. the acute dilatation was due to the sudden generation of carbon dioxide gas, in quantity greater than the stomach could hold, its escape into the intestine being prevented by a pyloric obstruction. The muscle of the stomach wall was strong and active, both before and after the momentary overdistention of the viscus, and there was evidently no paralysis. I have seen one other case of this kind in a woman with jejunal obstruction.

Acute dilatation of the stomach, then, may be paralytic or nonparalytic, and post-operative abdominal distention may be due to gastric paralysis, as well as to intestinal paralysis.

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THE EXCEEDING IMPORTANCE OF A CLEAR UNDERSTANDING OF THE VASOMOTORS AND THE UTILIZATION OF THEIR FUNCTION TO GET BEST THERAPEUTIC RESULTS.

By W. C. ABBOTT, M D.,

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Whatever may be the anatomical structure that affords the phenomena we term vasomotor, it is certain that perturbations of vasomotor equilibrium form the earliest evidences of disease in the vast majority of maladies. So delicate is the adjustment of the governing apparatus that the first evidence of approaching disease is almost invariably to be displayed in alterations in the vascular tension of some or other area. Let this be due to the advent of an invading swarm of bacteria, or to the presence of a chemic irritant in the blood conveyed to the part, the first response to any abnormal irritation is to be seen in an alteration of the caliber of some part of the circulatory tract; in fact, such a change is usually requisite for the production of pathological lesions that are recognizable by microscopic investigation.

In venules, arterioles, or capillaries, or in all three, we have first either a condition of spasm by which the vessels are contracted and the blood is forced out into the general circulation, or a state of paresis, the vessels dilated and containing more than the normal quantity of blood which leaks into the area of low pressure from the general circulatory reservoir. Here commences the anatomy of disease—and that frightfully neglected process, the physiology of disease. Too much attention and too much importance have been given to the dead tissues, too little to the aberrations from normality displayed by the still living organs and acting functions. It is with liv-

ing, functionating tissues that we have to deal; with pathological processes while still active, in bodies not yet devitalized, and not with the final end-results of these processes, in bodies that have succumbed. If a patient is still alive to-day, he should have enough vitality to keep him living for a succession of to-morrows, provided we can successfully cope with his malady and prevent its making further progress. We may, then, take up the question of eradicating the malady, which is another matter.

The physician who accustoms himself to study the conditions presented by the vasomotors soon learns to detect the earlier perturbations, to recognize local "jangles," and to apply his remedies before the difficulty has progressed beyond the simple disorder of tonicity-excess or -deficiency. It may not be easy to give a nosological designation to these cases, and the physician may have his own opinion as to whether in dissipating the disease and restoring circulatory equilibrium he has aborted a pneumonia or jugulated any other affection; but he knows that just such cases let alone do develop into maladies that can, without the slightest difficulty, be recognized and classified, and that in their fully developed forms may really verify the pessimistic dictum—there is no treatment that cures.

How many diseases of the body politic could be cured in their incipiency by a little, a very little common sense? How many destructive wars could have been checked at the outset if only the principals had had a little more mutual consideration? How many floods could have been prevented had there but been a boy along to stop the beginning crevasse in the levee with a chunk of sod? Even the case of tetanus or of rabies might have been jugulated by a prompt excision of the virulent microbic colony at the start, to say nothing of the ease with which most acute affections may be jugulated. Innumerable similar instances could be adduced showing the efficacy of well-placed intervention at the beginning of morbid processes.

It will be objected that this treatment of a symptom is unscientific in that it does not strike at the cause of the illness, but is aimed at a result, and a superficial one at that. This is another of those illogical jumpings at conclusions without warrant which we have so often cited. How do you know the treatment that removes a symptom does not remove its cause? Is it not *prima facie* evidence that it does so when the results disappear? Take any symptom-complex that presents itself, it evidently depends on some pathological aberration, but just what we are, in the vast majority of cases, unable to say. But whatever it may be, it is a fair inference that the treatment that restores to health, or that causes the disappearance of that symptom, must remove the cause—otherwise, if the cause is still active, why does not the symptom remain? This, of course, does not aply to the smothering of pain by morphine or of fever by cold, although there are not wanting those who claim actual curative action from these measures, and we admit the possibility.

There is a certain degree of fetich worship in regard to this "cause" of disease. A dagger inserted in the heart causes a wound—removal of the dagger hardly cures it. A swarm of microorganisms descends on a toxic patch of tissue in the lungs—removal of the intruders does not necessarily leave the lung intact. There is failure to distinguish between the original cause of a malady and the results of that malady. Each demands treatment; each responds in a different manner to therapy. How long we bungled over cases of cerebral syphilis before we appreciated this truth, and learned that we must intervene as quickly and as powerfully as possible in order to prevent damage to the delicate tissues which not all the mercury out of Spain could restore! Remove the causes of disease, to be sure; treat the cause whenever you find it still acting, but don't limit your therapeutic activity to that one method or argue that there is no room for any other indication.

It is the all but universal presence of vasomotor disequilibrium in the whole wide field of clinical medicine that compels such constant reference to the four great vasomotor remedies in the practice of our art—aconitin, veratrin, digitalin, and strychnine. These, singly or combined, form an essential part of the therapy of so many cases of so many maladies, that they, above all other remedies, are constantly mentioned in my work. That the causal indication is not neglected is shown by the interminable injunction to first clear the bowels and disinfect them, and to keep doing so, since observation has shown with what frequency the absorption of toxins from the alimentary canal coincides with the occurrence of disease in limited areas where the vital resistance is presumably lowest.

Whether autoinfection occasions disease directly from chemical action or, by still further lowering resistance, opens the door to invading microbes makes little difference—the indication for establishing intestinal exosmosis is similarly almost universal. The man who appreciates the importance of these two pathological principles, the fact of autotoxemia and the constant presence of vasomotor instability, has a broad foundation on which to build his practice. To this he can at every step add something—he never has to unlearn these two lessons. Making these the basis, never neglecting them in any case, we find that every patient displays indications for something more, but never with a frequency comparable with that of these two.

We constantly find the necessity of referring back to the newer works on physiology, and we glean every scrap of pathological information we can find, for we cannot afford to be ignorant of a single fact that may explain our cases. So also we must possess hundreds of remedial agents, although nine-tenths of our work may be done with a score. But it is in the remaining tenth that we find the greatest pleasures of the practice of medicine, when by the exhibition of some definite active principle that has not been needed for years we meet an indication that has not presented in that period, but for which we have had the remedy waiting.

I beg my readers to pardon me for the importunity with which I beseech them to consider these truths. I cannot help it; I do so want them to know of these exquisitely differentiated remedies that I cannot help being urgent. And, knowing these things so well, how important they are for the profession and for suffering humanity, when I find that one does not really know there is a difference between hyoscine and atropine I am ready to lie down and die.

Habitual Constipation and Latent Inflammations of the Peritoneum.—R. Romme declares that an individual who suffers from habitual constipation may have a latent and unrecognized lesion of the appendix, of the adnexa, of the gall-bladder, or of some other abdominal organ. The etiological rôle of habitual constipation in appendicitis is well known. Villard to a certain extent reverses the terms of this problem, and in place of considering constipation as an efficient cause of appendicitis he thinks rather that obstinate constipation is often the result of a latent appendicitis more or less unrecognized.—*La Presse Médicale.*

SYPHILIS OF THE NASAL FOSSÆ.

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It is apparent to every physician who labors in the clinics of New York that syphilitic affections are becoming increasingly common, and in the opinion of many legislation will have to be resorted to in order to check the progress of this loathsome disease, the ravages of which are more pronounced in the nose than in any other organ.

The tertiary lesions are those that the rhinologist is usually called upon to treat, these producing the characteristic ulceration and necrosis that is so injurious to the functions of the nose, and so disfiguring to its shape. The primary lesion—the chancre—is seldom seen in the nose, and when it does occur it is usually in the vestibule, which is accessible to infection by the finger nail. Secondary lesions are frequently seen in the nose, in the form of mucous and erythematous patches. They appear from two to twelve months after infection, in groups, being separated from the healthy surface by a distinct outline. These lesions are the most contagious in syphilis, more virulent even than the chancre itself. Physicians should bear this in mind, and patients should be apprised of it, so that the chances of infection may be minimized. Secretion obtained from secondary lesions is capable of producing syphilis by inoculation, and the blood of an individual with secondary lesions is fatal to monkeys. The true tertiary lesions, the gumma and the ulcer, are neither contagious nor inoculable. What is regarded as the specific organism of syphilis, the spirochete of Hoffmann, is constantly present in all secondary lesions, in primary sores, and in syphilitic new-born infants. It should be observed that in the tertiary stage there often occurs what appears to be a mucous patch. Closer examination will show that it is in reality an ulcer.

In the nose, secondary lesions are frequently overlooked on account of the mildness of the symptoms—merely those of a cold in the head—and it is not until patches are also seen in the throat that the true condition is brought to light. Whenever a patient complains of symptoms of rhinitis, accompanied by loss of hair, nocturnal headaches, swelling of the glands of the neck, and other signs of syphilis, it is evident that the rhinitis is of syphilitic origin. Among young children syphilitic rhinitis occurs oftener than is generally believed, but in many instances the condition is not recognized until the destructive changes are well under way and are irreparable. It differs from a simple rhinitis in that the symptoms are severe and persistent, and show no signs of being self-limited. A child with this condition has that peculiar obstructed nasal respiration known as snuffles, which greatly interferes with its nursing, and the nose constantly secretes a watery mucus, which causes excoriations and sores about the orifices of the nose and mouth. The harsh, brassy cry of many of these infants is an evidence that the larynx, too, has been invaded. The general appearance of a syphilitic infant is quite characteristic. The shrunken body, the pale, colorless, and mummified face, and other evidences of malnutrition, stand out glaringly. Inherited syphilis resembles the acquired form in its course and general manifestations, and frequently it remains quiescent until the patient has reached adolescence. In most instances syphilis in infants runs its course rapidly, destructive changes occurring, perhaps, from six to twelve months after infection. Fortunately, the reparative process in infants is such that the nose seldom becomes deformed through the ravages of the disease.

In adults, the nose is the place of predilection for the destructive lesions, which appear from two to ten years after the chancre. Some observers maintain that tertiary lesions are but relapses or recrudescences of secondary lesions, but their noncontagiousness and noninoculability oppose this view. In certain forms of syphilis, such as the malignant and the Asiatic, the disease passes through the cycle of changes with great rapidity, and destructive lesions may appear as early as six months after infection. Not infrequently the exciting cause of an intranasal lesion is traumatism, which stirs into activity a latent syphilitic process. Whether destruction of tissue takes place slowly or rapidly, syphilitic lesions in the nose present certain distinguishing features that to the experienced eye are unmistakable evidences of the disease.

The gumma is the lesion that precedes all destructive changes in the nose, although it may assume a different form and run a different course in different individuals. The round tumor-like variety, so common in other parts of the body, is seldom seen in the nose, and when it does appear it is usually upon the septum, resembling a deflection. A gumma in the nose is so well protected and free from irritating influences that it usually develops insidiously, and may not break down until the lapse of months and even years. Pathologically considered, a gumma consists of an infiltration of small, round cells or inflammatory corpuscles, involving soft as well as dense structure. A progressive gumma undergoes a number of changes before it disappears. First it becomes infiltrated, then it softens and degenerates, then it ulcerates, and, lastly, it becomes firmly cicatrized. The points of predilection in the nose are the septum, the turbinates, and the nasal floor, in the order named. The gumma may start from the surface, and secondarily invade the deeper parts, or else it may begin in the interior of the bone or cartilage, and break through the overlying structures. In the nose more frequently than elsewhere a gumma breaks down, and destruction occurs without the patient's knowledge, and often it is not until breathing is interfered with, or the odor becomes offensive, that the patient becomes aware of its presence. A gumma in the nose resembles a carbuncle, being elevated, purple in color, and separated from the surrounding surface by a distinct outline. Touched with the probe, it is firm and insensitive, later on becoming soft and taking on a high color, like a maturing abscess. At this stage it pits upon pressure, is sensitive and vascular, and secretes a watery mucus. As soon as it has undergone complete degeneration, it disintegrates and becomes an ulcer, and this ulcer enlarges until the entire infiltrated area is uncovered. Intranasal lesions, like the deep syphilodermata, are restricted and localized, adjacent parts not becoming involved until the already diseased area has first been destroyed.

As said before, the most common site of an intranasal gumma is on the septum, and a lesion

here is usually of a larger size than when it occurs elsewhere in the nose. The lesion usually starts in the bony septum and creeps forward until the cartilage is implicated and destroyed, eventually leaving a clean, round hole in the septum that looks as if it were punched out. A perforation in the lower part of the septum, involving either a part of the bone or cartilage, produces no deformity. It is only when the entire cartilage, or else the supporting plate of bone is destroyed that the nasal arch loses its support and causes the nose to sink in. It is fortunate that the nasal arch resists destruction as well as it does, otherwise nasal deformity would occur more often.

A lesion in the upper part of the nasal fossa is far more injurious than one in the lower, owing to the fact that an ulcer above is soon covered with a dense scab, which seals the surface and prevents the escape of the morbid secretion. This, in turn, attacks the deeper parts and undermines the nasal skeleton. This does not occur in the lower part of the nose, owing to the facility with which foreign substances are washed away by the abundant supply of nasal mucus. Another favorite place for a gumma is upon the inferior turbinate bone. Such a lesion is difficult to detect, because it is usually situated well back in the nasal chamber, and resembles a turbinal hypertrophy. A lesion upon the turbinate is often accompanied by distressing symptoms. There is a severe nocturnal headache and a dull, aching pain in the side of the face that may last for months. As soon as the gumma breaks down, the pain and headache subside, and a purulent discharge makes its appearance. A syphilitic deposit upon the floor of the nose may exist for a long time without being detected. Frequently the first intimation that we have of a deposit in this region is a hard swelling upon the roof of the mouth, which soon breaks down and exposes to view a sequestrum of dead bone. This is soon detached and cast off, leaving a hole in the palate which greatly interferes with speaking and with eating. It frequently happens that while destruction is going on in one part of the nose, cicatrization is taking place in another. Occasionally the diseased bone, instead of becoming necrotic, becomes dense and eburnated, and acts as an obstruction. The excruciating pain that is sometimes complained of in syphilitic affections of the nose, is usually due to the involvement of one of the large nerves that pass through the numerous foramina in the nose. Rarely it is due to the extension of the syphilitic process to the meninges.

A typical syphilitic ulcer in the nose can scarcely be mistaken. It is cup-shaped, the surface is covered with a thick, firmly attached crust, and its edges are elevated and undermined. In some instances the destructive process appears to be self-limited, and, after a certain amount of tissue has been destroyed, repair begins. In other cases there appears to be no limit to the destruction. As soon as denudation, and consequent necrosis, takes place, there occurs that unmistakable and disagreeable odor known as syphilitic ozena; a smell like that of crushed bedbugs, that clings to the patient, and appears to saturate his very clothing. In this disease, as in most other forms of chronic rhinitis, the bad smell is seldom apparent to the patient, or at least not in the same degree as to those about him. This is partly because he has insensibly grown accustomed to the odor, and partly owing to the impaired sensibility of the olfactory membrane. Decomposition and crust formation are present in all forms of intranasal ulceration, and the fetor that accompanies destruction of bone is as constantly present in simple forms of atrophic rhinitis, in which the destruction is molecular, as in syphilis, in which it is *en masse*. The discharge of offensive crusts, mixed with blood and pus, from the nose is characteristic of a syphilitic ulcer. Often the discharge contains pieces of foul-smelling bone that have a worm-eaten appearance, the dislodgment of which may produce severe, and even dangerous hemorrhage. After the activity of the syphilitic process has abated and the lesions have healed, the formation of dense scar tissue takes place. Except a deep burn, no lesion is followed by greater cicatricial contraction than a deep syphilitic ulcer. The scars have the same radiate appearance of syphilitic scars elsewhere, being dense, glistening, and tense. Where the destruction is extensive, the resulting contraction may be so great as to lead to troublesome stenosis and marked deformity.

The most noticeable sequence of syphilitic intranasal ulceration is the repulsive and highly disfiguring flattening known as saddle-back nose. The practically incurable nature of this deformity, and the insidious manner of its development, makes the timely treatment of all syphilitic affections of the nose a matter of the greatest importance. Syphilitic nasal deformities are of three kinds: Those in which the septum is destroyed and the nose is sunken; those in which some part of the external nose is destroyed, and those in which both the former and latter conditions are combined. Unusual deformities are those in which the lateral walls, as well as the septum, are destroyed, so that the nose is completely flattened and its profile is not seen above the face. In extreme destruction there is atrophy of the soft parts, and the tip of the nose is turned up and greatly reduced in size, giving the face an ape-like appearance.

The treatment of syphilitic affections of the nose is both local and general. The constitutional treatment is that of the disease in general, and continuous rather than intermittent medication is advised until the lesions are healed. Although the lesions are usually of the tertiary variety, in which potassium iodide is indicated, they are more promptly controlled by the mixed treatment. In my experience most lesions can be brought under perfect control by internal medication, but, in exceptional cases, hypodermic injections of mercury, or inunctions of the same drug, are necessary to check the progress of the disease. Inunctions are particularly applicable in children, and they may be supplemented with the administration of the syrup of the iodide of iron. Adults can begin with 5 grains of potassium iodide and 1-5 grain of the protoiodide of mercury after each meal, with plenty of milk, gradually increasing the dose until the lesions have disappeared. Then the dose can be reduced and given intermittently. Just how long antisyphilitic medication should be given in order to confer immunity has not yet been determined, but it is wise to continue treatment for at least two years after the ulcers have healed. Local treatment consists in cleanliness, the removal of necrotic bone, stimulation of the ulcer, and prevention of adhesions and deformity.

Few lesions are more amenable to medication

than those of syphilis, providing it is begun before the destructive changes are well under way. It is a good plan to give antisyphilitic remedies for all suspicious intranasal lesions, for not infrequently a tumor or an ulcer, supposedly malignant or tuberculous, disappears entirely upon the administration of mixed treatment.

No attempt should be made to correct a deformity due to syphilis until the patient has been subjected to a course of medication covering a period of two years, otherwise the surgical procedure may excite irritation and ulceration.

A nasal deformity can be greatly improved by subcutaneous injections of paraffine. It is better to inject a small amount at different sittings than to inject too much at one time, thus avoiding sloughing and other mishaps. Artificial bridges and supports have been tried and found wanting. For a perforated palate, a dental plate of hard rubber gives the most satisfaction.

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OBLITERATIVE ENDARTERITIS OF FEMORAL DISTRIBUTION WITH GANGRENE OF THE FEET.

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Although Jaesche in 1865, and Burrow in 1867, had described cases of proliferative changes in the intima of arteries with subsequent obliteration, it remained for Friedlander in 1876 to describe the lesion and to recognize it as a pathological entity. Winiwater three years later added to the scanty literature upon this topic a detailed description of obliterative endarteritis with gangrene of the feet. Since then there have been from time to time contributions in German, French, Russian, and English. I have failed to find any word in American literature upon this subject. If the last had been said, and this particular chapter of disease had thereby been closed, any attempt to add a word would be futile. The conditions, however, are not such; nowhere in the realm of medical science are the etiological factors more obscure. The condition is not recognized as a clinical entity; the textbooks barely give it recognition, and much confusion reigns in cases thus far reported.

Obliterative endarterial changes in the femoral distribution present a symptom complex and clinical picture truly distinctive, and quite as characteristic as similar changes occurring in the brain. The disease is slow in progress, terminating in gangrene of distal parts, and is usually confused with Raynaud's Disease and erythromelagia. The importance of the intima in physiological and pathological processes must be distinctly recognized. The prime function of an artery is to maintain a patent channel for the blood stream, and this depends upon the integrity of the intima. Physiological obliteration of blood-vessels as occurs in obsolete channels, such as the ductus arteriosus and the umbilical vessels, is accomplished almost entirely by a proliferation of the endothelium of the intima. A similar process occurs in the proximal ends of arteries following amputations. Under pathological conditions we recognize primary changes in arteries occurring in the intima. The only primary change in the middle coat is simple degeneration—calcification. Primary change does not occur in the adventitia. The intima is, in fact, the essential part of an artery; the middle and adventitious coats are mechanical necessities enabling it to fulfill its function. The endothelium of the intima responds to irritation similarly to endothelium elsewhere, resulting in proliferation of new cells. Owing to the resistant elastic lamina of the middle and outer coats, proliferation is directed centripetally, and, in consequence, the lumen of the vessel is encroached upon. According to Foster, the blood flowing through the blood-vessels is in a state of unstable equilibrium, which may at any moment be upset with clotting as a result. It would seem that the altered relationship between diseased intima and blood, or rather between diseased intima and fibrin ferment, maintains the fluidity of the blood in a less stable state. Endothelial proliferation may be only fairly advanced in an artery of the dimensions of the femoral or popliteal, the lumen of which may be entirely choked by a canalized fibrin thrombus. The thrombus can be dragged out for some inches through the cut end of the vessel. The canalization may not be sufficiently large to admit the passage of a straw. This variety of thrombus is the result of a concentric lamellation of fibrin upon the inner coat of an artery. The thrombus is long and tubular, and is not firmly adherent to the vessel wall. It receives no nutrient vessels from the wall of the artery. Endarterial obliteration, as described, is therefore the result of the combined action of a slow neoplastic agency occurring in the intima, together with thrombus formation by fibrin deposit. The disease under discussion is characterized by the slow lamellar thrombotic process, and corresponds to the slow advances of the clinical phenomena. During the course of the disease, however, thrombosis by clot may supervene and invite a more acute gangrenous process.

I have the good fortune of retaining under observation one instance of this disease for a period covering five years, and of a second for a much shorter time.

Case I.—I. G., large florid male, Russian Jew, age forty-two years. Peddler by occupation. Denies any acquired or inherited specific taint. Uses alcohol and tobacco moderately. Attributes present condition to no known cause, other than to climatic exposure. Seven years ago began to have pain in left foot and toes. Pain was of burning character, and was nearly constant. There were occasional anginal attacks in the muscles of the leg. Pain was not aggravated by moderate pressure. The foot and toes were red in color, but presented no alteration upon change of posture. Cutaneous sensibilities to temperature and pain were normal. Medicines, hot-air treatment, and baths were without avail, under which regimen he remained for two years.

At the end of this time a gangrenous ulceration appeared upon the great toe, and was soon followed by a similar area upon the toe adjacent. The symptoms enumerated above persisted. It was noted that at this time there was no dorsalis pedis pulse to be felt upon that side. No note was made of other pulses in that extremity. The foot was amputated through the ankle. During a period of nine months subsequently the wound refused to heal. The leg was then amputated above the knee, and from the proximal stump of the popliteal artery was drawn a long, white,

canalized thrombus three inches in length. The wound was closed, and healing ensued.

At the present time, five years after the amputation through the thigh, he again complains of great pain in the stump, together with a deep cyanosis. He was free from pain until a year ago. There is no pulsation in the femoral artery of that side. An attempt was made to feel the external iliac pulse per rectum, but the vessel could not be reached.

The patient now, and for the past year, has had pains of similar character in the right foot and toes. There is little or no change of color, and no change with foot dependent. The dorsalis pedis pulse on the right side is absent. The femoral pulse is palpable, and apparently not diminished. There is no other determinable vascular disease. There is neither albumin nor sugar in the urine, nor has there at any time been hematuria. Unfortunately, there was no further examination made of the amputated extremity.

Case II.—A. G. Tall, slender male. Russian Jew, age twenty-eight years. Peddler by occupation since landing in this country two years ago. Previous to that time had been a farmer. Parents living and healthy, as are also four brothers and three sisters. Smokes moderately, and has never used alcohol. Has never had syphilis. Has always been well in recent years until onset of present complaint. About one and a half years ago began to have anginal attacks in calf of left leg; the pain would extend to the foot and toes, and sometimes would last for several days without cessation. There was nothing to be seen upon the leg or foot to account for the pain, which was deep-seated, and difficult to locate exactly. It was described as of a boring and burning character. Various salves and baths were prescribed for the pain without avail.

For seven or eight months the pain has diminished in the leg, but persists, and is worse in the foot and toes. During the past four months the pain has been extreme and constant in the large toe and toe adjacent. An ulceration has developed upon the great toe, and the distal three-quarters of the foot has assumed a dull red color. This color persists in horizontal and pendant positions. The ulceration upon the great toe is upon the under inner surface, and towards the tip. It refuses to granulate. There is no pulsation in the dorsalis pedis artery on this side, nor can pulsation be felt in the popliteal with leg flexed at right angles. The femoral pulse is good.

The reflexes are normal, as are also the cutaneous sensibilities to pain, touch, and temperature. No blood pressure estimation could be made, owing to the absence of a pulse at the periphery. Otherwise the patient's general condition is good. There is no further evidence of arterial change.

The patient was told the serious nature of his apparently slight affection, and was advised to remain in the horizontal position. He was given nitorglycerin and iodide of potassium. In the course of ten days of care in hospital his pain was very severe, and had to be controlled by opiates. Meanwhile, the ulceration upon the great toe extended and became foul, and the adjacent toe became first cyanosed, and then black. Both toes were amputated. During the course of the succeeding two and a half weeks the wound sloughed, the edges became black for a considerable distance, and a foul, yellowish discharge exuded from the wound. The leg was amputated above the knee. The wound healed by primary union.

Examination of the amputated extremity revealed the dorsalis pedis artery entirely obliterated, represented by a fibrous strand. No canal was demonstrable. The posterior tibial contained almost throughout its length a canalized lamellated thrombus. With the artery laid open this thrombus was found not particularly adherent, and could be raised from the vessel wall at any point. The vessel wall itself was not much altered. The popliteal artery itself, up to the level of the amputation, was also occupied by thrombus, but differing materially from that in the posterior tibial artery. This thrombus was evidently formed by blood clot. It was reddish in color, it was not canalized, and was also only lightly adherent to vessel wall. The thrombus was partly organized.

The symptomatology of this condition is so well demonstrated in the foregoing cases that little need be added. The likelihood of error seems to be to confuse this disease with Raynaud's disease, but with little care both the symptoms and course of the disease will be found to be entirely different. Michels and Weber have recently reported a case almost identical with my first. Their report includes a careful study of the microscopic findings. The cases reported by Arkwright and Dunlop, if at all instances of this disease, are complicated. The question of etiology is still obscure and speculative. Friedlander considers injury and exposure to cold important factors. Wwedensky believed there was an underlying neuritis, upon which is imposed an arteritis. Sternberg assumes injuries applied to a weakened and depressed vascular system, and Hollis suggests that by the repeated impact of foreign particles against the sides of a small artery, a state of irritation or "molecular unrest" is established within certain endothelial cells. None of these theories quite satisfies the conditions. It would seem that if the cause were endarterial, such as a toxin conveyed by the blood stream, its action would not be selective to a certain arterial distribution. If there be extravascular agencies their nature still remains obscure. The two cases cited above would rather suggest that the disease in its onset is peripheral, inasmuch as the obliteration was farthest advanced in the distal parts.

The disease is slowly progressive, and is not cured by amputation, as is evidenced by the recurrence in the amputation stump of Case I. Wwedensky believed the condition to occur only in Russian and Polish Jews. Michels and Weber also comment upon this fact, the case reported by them having occurred also in that race. My two cases are both Russian Jews. A. Pearce Gould, in The Second Lettsomian Lecture, cites several cases, but no mention is made of this fact. I have failed to find anything racial that might predispose Jews to arterial changes. The ergot in the use of rye bread seems to play no rôle. It is to be hoped that modern research in artery-vein anastomosis may find a fruitful application in this disease.

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THE USE OF OXYGEN IN ASPHYXIA NEONATORUM.

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Quite frequently it happens that while the obstetrician is busy in checking a postpartum hemorrhage, or in repairing a lacerated perineum, it falls to the lot of the attending nurse to look after the needs of the neonatus. In cases of asphyxia, she even assumes the rôle of a goddess in actually "blowing into his nostrils the breath of life." Under the guidance of the attending physician, many a nurse has resuscitated an apparently dead child by the various methods, mechanical, medicinal, etc., known to the modern practitioner.

At the maternity department of St. Luke's Hospital, Denver, in desperate cases of asphyxia neonatorum, a novel method has been adopted at the independent suggestion of two nurses, each unknown to the other. In one case, after having exhausted all his skill, resources, and strength, the attending physician concluded that the child was beyond human aid, and left the hospital in despair. The attending nurse cast her eye on the tank of oxygen which was standing in the corner of the room, and decided to make an experiment of her own, even at the risk of incurring the displeasure of her superior. She turned on a stream of oxygen into the nostrils of the baby, and was overawed to see the infant take its first breath. On the following day the attending physician was amazed to find a live baby in the arms of its mother.

The other nurse, in a similar case, timidly suggested to another attending physician, after he had thrown up the sponge, to use a few whiffs of oxygen. He did not protest against her audacity to express an opinion in his august presence, but grasped at the opportunity of trying a novel procedure. He was repaid by having saved a human life, and by the gratitude which shone in the eyes of the parturient and nurse.

Having obtained the permission of the physicians and nurses to publish the above, and after consulting the recent text-books on obstetrics, the available current literature, and several prominent obstetricians without finding any record of the use of oxygen in asphyxia neonatorum in this country, I concluded that the subject deserved to be brought to the attention of the medical profession for the purpose of further research, discussion, and experiment.

I hope I shall not be accused of mere gallantry if I mention the names of the two nurses who suggested the new method—Miss Marguerite Bullene, day head-nurse, and Mrs. Oca Cushman, night head-nurse of St. Luke's Hospital. Even should future research not accord to them the honor of priority, they deserve credit for having revived an old method of resuscitating the apparently dead newborn in the city of Denver, where this method was certainly unknown.

Has oxygen ever been used, or its use suggested, in resuscitation of the drowned?

142 Court Place.

Obstruction of the Biliary Passages.—Delbet does not think that the hypotheses which have been offered to explain the lesions of the gall-bladder are sufficiently convincing, for this is a very complex subject. The causes which must be investigated are the nature of the obstruction, the condition of inflammation of the biliary passages, and the location of the obstruction. The last factor plays a very important rôle. Supporting his point of view, Delbet refers to a case of cancer of the pancreas which, by compressing the ductus communis choledochus, brought about atrophy of the gall-bladder. The nature and the seat of the obstruction, however, are not the only conditions to be considered; account must be taken of the bladder wall. Not only does inflammation cause retraction of the gall-bladder, but it also brings about distention. Inflammation of the mucosa may bring about a hypersecretion and lead to that condition which is wrongly called dropsy of the gall-bladder. Inflammation of the other layers bring about more easily a sclerosis. A complicating factor is that in many of these cases there are two successive stages, a temporary period of dilatation and another period of definite retraction.—*La Tribune Médicale.*

Inflammation and Peritonitis Considered as Physiological Processes.—John D. Malcolm, in the conclusion of his paper on this subject, says that it seems probable that an obvious and definite aseptic peritonitis is a not uncommon condition; that aseptic inflammation may be described as consisting of the local physiological changes in and around damaged tissues which are brought about by an injury, and which increase in activity for not more than three days after the injurious action ceases—the object of this increased physiological activity being the removal by absorption, without obvious loss of tissue, or the demarcation, with a view to separation, of those parts which have been so damaged that their period of usefulness to the animal economy has ended. The result in some cases, however, is a revival of tissues which have been deprived of their blood supply. Septic inflammation may be described as consisting of the local physiological changes in and around damaged parts which are brought about by an injury and by the presence of irritating microorganisms acting on the damaged and adjacent tissues, or which are brought about by the action of such microorganisms on undamaged tissues—these changes continuing and varying in activity in proportion to the duration and intensity of the irritation. The objects, which are not always attained, are the removal by absorption or by extrusion of the noxious microorganisms, and the removal by absorption, without obvious loss of tissue, or the demarcation, with a view to separation and extrusion, of those parts which have been so altered that neither their absorption nor their recovery is possible. The idea that a destructive or an impaired action is a part of the process of inflammation must be carefully excluded. Briefly, inflammation, whether aseptic or septic, consists of the series of phenomena necessary for the removal, or for attempting the removal, of effete and irritating matter from a damaged area by the physiological processes of absorption, of extrusion, of demarcation and of revival, or by one or more of these.—*The Scottish Medical and Surgical Journal.*

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ANTHRACOSIS AND PULMONARY TUBERCULOSIS.

THE opinion that tuberculosis of the lungs is in the majority of cases the sequel of a primary infection, occurring—often many years previously—via the intestine and the mesenteric lymph nodes, has gained many notable adherents of late. Without going as far as Behring, who looks upon phthisis in the adult as the closing act of a drama beginning in the cradle, there is much that is rational in the conception of this mode of invasion of the tubercle bacillus, and experimental corroboration is not lacking. To mention only two of the most recent of the published observations relating to this subject, reference may be made to the work of Bartel and of Schlossmann. The former of these placed guinea pigs under appropriate conditions in the homes of consumptives, and found that those of the animals that became tuberculous in nearly every instance gave evidence of a primary intestinal infection. Schlossmann (see MEDICAL RECORD, August 4, 1906, p. 191) endeavored to demonstrate the route by which the germs probably make their way from the gastrointestinal tract to the lung by selecting animals so young that all likelihood of already existing tuberculous disease could be excluded, and under the proper precautions injecting tubercle bacilli into their stomachs. It was found that in some instances, after the lapse of only a few hours, tubercle bacilli had already penetrated to the lung. The experimenter expresses the conviction that the organisms passed through the intestinal wall and gained the mesenteric lymph nodes; from there they entered the thoracic duct, and thence through the venous blood stream found lodgment in the lung.

Ribbert, an authority whose opinion is worthy of the utmost respect, declines to accept this assumption. For him, now as before, the respiratory channel represents the chief portal of entry of the tubercle bacillus in pulmonary tuberculosis, though, of course, he is far from denying that the other mode of invasion does not frequently take place. In a recent communication (*Deutscher medizinische Wochenschrift*, October 4, 1906) he considers the bearing of anthracosis in the present problem and finds in the conditions thus produced a weighty argument in favor of his view. Contrary to those who assume that the deposit of coal dust is *per se* a deleterious process, capable of leading to damage to the pulmonary tissue, he believes that when harm results it is in consequence of a preexisting tuberculosis. In support of this he points out the scattered occurrence of the small—often only pinhead sized—calcareous anthracotic subpleural nodules that by a careful examination can very often be discovered in the lungs of those dying from nonpulmonary diseases. Although it is usually impossible, owing to their lack of all structure, to demonstrate by microscopic examination the tuberculous character of these nodules, the fact that whereas lesions due to the deposition of coal dust alone would be uniformly distributed, they are found fortuitously scattered in small numbers here and there, makes it evident that there must have been some localized inflammatory process to encourage the carbon particles to collect. Under these conditions the pigment grains would be prevented from being disposed of in the manner usual to healthy lung tissue and would become entangled in the connective tissue network. Of the various possible sources for these inflammatory foci, such as syphilis, abscesses, or infarcts, tuberculosis is the most probable. That it does play a rôle in this connection is shown by those calcareous nodules, black at the periphery and cheesy at the center, or possibly presenting giant cells and tuberculous granulation tissue, which are sometimes found.

These and a number of other considerations, the discussion of which, owing to limitation of space, cannot profitably be entered upon here, lead Ribbert to conclude that most anthracotic foci represent the late stages of healed tuberculous lesions. By a similar process of reasoning, the same conclusion is reached regarding the anthracotic bronchial glands. It would seem far-fetched indeed for any one to ascribe the subpleural nodules to bacilli that had entered the body through the alimentary tract, and Ribbert considers that their existence affords striking evidence of the aerogenous infection of the lung, and of the bronchial glands as well. Tubercle bacilli can, of course, readily penetrate the respiratory epithelium without leaving any traces, just as they can and do penetrate the intestinal mucosa.

Acceptance of this doctrine of the tuberculous nature of these very frequent anthracotic nodules has an interesting bearing on the statistics of latent tuberculosis. As our knowledge of the pathology of tuberculosis is broadened, the sweeping assertion that most of humanity is tuberculous, in the sense of harboring in one tissue or another demonstrable tuberculous lesions, seems more and more worthy of credence. Granted this wholesale infection of the human race, there follows the somewhat reassuring corollary that in view of the relatively small proportion of individuals who actually become diseased most of the population must be comparatively immune. In other words, the tubercle bacillus is a serious menace only to those who are in some way predisposed, for it is hardly credible that all the persons who present merely these insignificant latent lesions should have had the good fortune to encounter only nonvirulent bacilli. What the nature of this predisposition is, whether it is altogether innate or to some extent acquired, and whether, if it is acquired, any method will be discovered whereby it can be detected in time and in some way removed, are large questions to which the future may possibly have answers.

THE MEDICAL LICENSE LAW IN NEW YORK.

When one compares the present conditions of medical practice in the United States with those which existed only fifteen or twenty years ago it is evident that great progress has been made. At that time the regulation of practice was only in its infancy, and the attempts which were being made in some few States to protect the public from irregular practitioners of all sorts, and even from out-and-out quacks and ignorant charlatans, were regarded with suspicion and disapproval by many in and out of the profession. The pioneer efforts of the Illinois State Board of Health met with strong opposition, not only from the faculties of the small and inefficient colleges who feared a loss of students and of the fees they paid, but even from educated physicians with no college connection, who resented the slight restrictions then placed on medical practice as an interference with personal liberty. Gradually, however, the idea took root, and one State after the other passed laws regulating practice and establishing educational standards, to which all not already following their profession must conform before receiving permission to treat the sick. There is now practical unanimity regarding the necessity of medical license laws, and every State has such laws in force. The conditions have changed, and vastly for the better, but they are far from perfect. A lesser evil has been substituted for a greater one, for it is unquestionably an evil that the educated physician practising his profession lawfully and skilfully in one State should become a criminal and a quack in the eye of the law if he attempted to continue his activity, after removing to another State, without submitting to a second examination under a licensing board. A federal license law has been suggested as the remedy for this evil, but the form of government under which we live renders this impossible. Each State is sovereign in this respect, and the federal government cannot coerce it. The only remedy lies in universal reciprocity, but this is manifestly impossible as long as the requirements in each State are not uniform. At present no two State medical license laws are the same; some are rigid and some are lax, and if reciprocity were now general, the poorly prepared candidates, in whatever place they intended to practise, would naturally come up for examination in the States where this was the most easy, and the general standard would fall to the level of the lowest. Until the laws in all the States are made uniform, or practically so, universal reciprocity in medical licensure must remain impossible.

The Educational Council of the American Medical Association has been very active of late in the endeavor to raise the standard of preliminary and professional education in the various States, and the work it has done is commendable, but we question whether it will ever succeed in bringing about uniformity in the medical laws. The solution of the problem rests with the practitioners in each State. If they will interest themselves in the subject, and will use their influence to obtain amendments to the present laws, the time will come when all the States will have requirements which are practically equal, and then universal reciprocity will naturally follow.

New York State was among the first to enact a medical license law, good in its way, but not perfect. It is the Empire State of the Union, with the largest population and the greatest number of medical practitioners, and it ought to establish a standard to which the medical laws of the other States would conform. But before it can set itself up as an example for other States to follow, it must amend its requirements in several important respects. The *Post-Graduate* for October contains a thoughtful article by Dr. Frank Van Fleet on "Needed Reforms in the Medical Laws of the State of New York," which is worthy of study by legislators in other States as well. The writer, whose familiarity with medical legislation in this State qualifies him to speak with authority, pronounces our present law defective on four counts: "(1) It is cumbersome; (2) It discriminates in favor of certain classes; (3) It does not accomplish the purpose for which it was enacted; (4) It is unjust in its method of enforcement." The first objection calls for no comment, for it is a question of form rather than of matter. The second count relates to the fact that there are three distinct examining boards, composed of regular, homeopathic, and eclectic physicians, respectively. This provision of the law is bad, in that it does not safeguard the people against ignorance in the one branch which is the end and aim of medical study—the cure of disease. A man who has passed the examination before any one of these boards is a legally qualified physician and entitled to treat his patients in any way he pleases. It is conceivable that a student with a knowledge of only the homeopathic or eclectic materia medica may be qualified by his own board, and then decide to throw over sectarian practice; but he is really unqualified so far as regards therapeutics, and has practically been admitted to practice without examination in the most essential branch. Again, if the State recognizes two "schools" as distinct from regular practice, there is no reason why it should not recognize a dozen others. So long as this distinction exists the osteopaths have a strong argument for their demand for a separate board to examine their candidates and grant them a license to practise their own or any other therapeutic eccentricity. If they should gain their point it is difficult to see how recognition could then be refused to the naturopaths, the vitapaths, and even Mother Eddy's nihilists.

The law is also defective in that it does not define clearly the practice of medicine. Everyone knows instinctively in what this consists, yet a judge in this city not long since ruled that the practice of medicine consisted in the giving of drugs. One might treat a mild case of typhoid fever without giving a single dose of any drug listed in the Pharmacopœia, yet no sane man outside of the legal profession would contend that he was not practising medicine in caring for the patient. The law is also unjust, in that it throws the burden of enforcement upon the county medical societies—homeopathic, eclectic, or regular—instead of using the machinery already provided for the conviction and punishment of other malefactors.

So far as the requirements, preliminary and professional (materia medica and therapeutics ex-

cepted), are concerned, the New York law is all that could be desired, and no other State can object to reciprocity on this ground; but in some respects it should be amended. There should be but one examining board to examine all candidates, and as long as the State recognizes the two schools in addition to regular medicine, representatives of each of these schools should be in the board; the law should clearly define in what consists the practice of medicine, or, as Dr. Van Fleet prefers, "the practice of the healing art;" and, finally, it should make provision for the punishment of offenders against the law, and not leave this to the initiative of individuals or societies. The State of New York should have a medical practice law as perfect as any law can be —one which could be taken as a model in the framing of the laws of other States, and it would so be taken if it were really model in all its provisions. Then what now seems to be the Utopian dream of universal reciprocity would become a fact, and a physician licensed after examination to practise in any one State would be entitled, after complying with the necessary formalities, to follow his profession anywhere in the United States or its dependencies. It rests, then, with the physicians of the individual States to secure the enactment of perfectly satisfactory and practically uniform medical practice law, and thereby bring about universal reciprocity in medical licensure.

Plans of the Sea View Hospital.

The plans of the proposed hospital for tuberculosis on Staten Island, to be called the Sea View Hospital, were recently submitted for approval to the State Board of Charities. The plans call for the erection of eight buildings, each four stories in height, for the wards, a dining hall and kitchen building, an amusement hall, and administration buildings, at a total cost of $2,000,000. The approval of the plans was strongly opposed by Dr. Stephen Smith, who objected not only to the cost but also to the plan of construction. The present approved treatment of tuberculosis, he said, is by means of fresh pure air and sunshine—practically outdoor life. This result can best be secured in simple one-story structures, varying in design from the tent, the shack, the lean-to, to the pavilion with numerous windows extending from floor to ceiling and wide verandas. He objected therefore to the plan before the Board which provided for four-story buildings each accommodating one hundred patients distributed in four wards one above the other. These buildings are to be of reinforced concrete and therefore permanent, whereas hospital buildings for infectious diseases should be susceptible of ready renewal. Since he believed the food of the patients should be made up chiefly of milk and eggs with fruits and cereals, Dr. Smith took exception to the expenditure of over $340,000 for a dining hall and kitchen building. He thought also that the buildings designed for the accommodation of nurses, attendants, and help, and the "Amusement Hall" were on much too large a scale and too expensive. Indeed, the proposed cost of the entire hospital was, he held, excessive. He said that it is estimated by competent authority that a hospital or sanatorium for the exclusive treatment of tuberculosis could be constructed in all its appointments for a sum not to exceed $400 per patient, but the plans for the Sea View Hospital called for an expenditure of $2,638 per patient. If the buildings were economically constructed, on strictly scientific, medical, and sanitary principles, the money apportioned would provide for 5,276 instead of 800 tuberculous poor of New York. Dr. Smith's main objections would seem to be well taken. There is a manifest tendency at this time to a liberality bordering on extravagance in hospital construction, and it is legitimate to inquire whether such expenditure is altogether justifiable.

Lymphocytosis of the Cerebrospinal Fluid.

The lymphocytosis which is often observed in tabes may be accounted for by the anatomical localization of the disease, for tabes is believed to begin as a diffuse meningitis which extends to the posterior roots and columns. The irritation of the meninges is sufficient to account for the increase in the number of lymphocytes in the cerebrospinal fluid. A similar condition has also been noted during the second stage of syphilis, in which the nocturnal headaches also point to meningeal irritation. Involvement of the nervous system during tertiary syphilis is quite constantly accompanied by a cerebrospinal lymphocytosis, whereas it is present in only about one-half the cases in which a gumma is localized in some other portion of the body. In syphilitic hemiplegia we also meet with a lymphocytosis of the cerebrospinal fluid, while this is not present when the condition is due to cerebral softening or hemorrhage, so that in this instance it may be accepted as a differential diagnostic sign. It is not possible, however, to clear up the diagnosis in every case by merely finding a lymphocytosis of the cerebrospinal fluid, as pointed out recently by Widal. In the case in question, that of a woman of seventy-one, the clinical picture was that of a subacute myelitis, and a closer examination showed a condition similar to a Brown-Séquard paralysis. Fluid obtained by lumbar puncture disclosed evidences of a marked lymphocytosis, although this might also have been due to a herpes zoster of long standing or to an unrecognized syphilitic infection. The lymphocytosis afforded no clue, therefore, to the true condition, adding thus one more to the numerous instances showing that a laboratory finding can be considered of value only when it is weighed with the other features of the case.

The Storage of Iron in the Organism.

There exists considerable difference of opinion regarding the fate in the organism of iron administered for therapeutic purposes, and many have seriously doubted whether it is really taken up by the system under these circumstances. Some light may be thrown on this question by observations recently made by Grober (*Medizinische Klinik*, No. 30, 1906) in patients suffering from chronic ulcer of the stomach. The subjects of this condition, usually women, are almost always anemic or chlorotic, and more or less emaciated. To a number of these Grober administered a diet consisting of milk and other articles known to be free from iron, or containing only a small proportion. The patients were kept in bed absolutely quiet. Within a few days there was a decided improvement in the general condition, and at the end of a week a well-marked increase in the hemoglobin content of the blood could be demonstrated. In other cases in which the hemoglobin had been reduced by gastric hemorrhages and the fear of a recurrence prohibited for days the taking of anything more than a few swallows of

cold milk, the same increase was observed. During a period of starvation the hemoglobin is not therefore reduced, as might be expected, but, on the contrary, becomes increased. Iron compounds are being constantly disintegrated in the human organism, and the iron is excreted chiefly by the intestine. Notwithstanding this it seems that the hemoglobin content may remain unchanged, or even be subject to an increase. There must be stored away in the organism somewhere a supply of iron in reserve, regarding the locality and form of which we are still in ignorance. Further observations on this subject will meet with deserved attention.

Plastic Operation for Hydronephrosis.

The operative treatment of hydronephrosis has developed along various lines depending on the individual indications, but in the main there are two leading types, the conservative and the radical. The former has been largely developed by Trendelenburg, who endeavored by plastic methods to change the dilated pelvis of the kidney in such a way that new drainage facilities would be provided and urinary retention avoided. This is accomplished by freeing the ureter at its emergence from the renal pelvis and suturing it to the deepest portion of the distended sac. Free drainage of the pelvis is thus accomplished in a manner approximating the normal. An extended trial of this method has been made by Läwen (*Zeitschrift für Chirurgie*, Vol. 79) in a series of thirteen cases of hydronephrosis, in which nine patients were completely relieved. In consideration of the unfavorable conditions which are present in many of these patients a larger percentage of cures can hardly be hoped for, and one must regard the result here attained as excellent.

News of the Week.

An Epidemic of Typhoid Fever at Wesleyan.—Several cases of typhoid fever have developed at Wesleyan University, Middletown, Conn. An investigation by Prof. Conn of the University has shown that the cases were due to contaminated oysters eaten by students at banquets of the various fraternities on October 12. It was at Wesleyan University that a similar epidemic, a number of years ago, found to be due to the eating of infected oysters, called attention to this mode of transmission of the disease.

Hospital Conference.—At a meeting of the Hospital Conference of the City of New York, held at the Academy of Medicine on October 30, it was decided to study systematically the following subjects relating to hospital management: Hospital expenditure, uniform accounting, State inspection and municipal aid, the distribution and classification of hospitals and hospital beds in relation to the needs of the community, ambulance service, dispensaries, medical organization and medical education, paying patients, cooperation of hospitals with each other and with other relief agencies, the treatment of patients in their own homes. A resolution was adopted providing for the appointment of a Committee of Investigation to consist of ten members. This committee will be subdivided into committees of one, to each of whom will be assigned one or more of the preceding subjects for investigation and report. It is provided that the Committee of Investigation shall have the right to offer reports and to make recommendations to the Conference as a body, but each member of the committee shall have the right to present to the Conference at any regular meeting a report on the subject especially assigned to him, and the reading of such reports shall constitute part of the regular order of business of the Conference. The substance of any report made to the Conference by an individual member of the Committee of Investigation, may be published by him unofficially as a personal document; but no report shall be published as an official document of the Conference unless it shall have been adopted by the Conference by vote and unless, following its adoption, its publication is ordered by the Conference on the recommendation of the Executive Committee.

Manhattan Eye, Ear, and Throat Hospital.—The new building of this institution was dedicated on October 30, by a service held in the Agnew Memorial Library in the presence of a large number of medical and lay guests. The new building is seven stories high. It has a frontage of seventy-five feet and a depth of one hundred feet, and stands on a plot of ground covering four lots on Sixty-fourth street and three lots on Sixty-third street. The ground, building, and equipments cost about $700,000. The hospital is of brick, with white marble trimmings, and is fireproof. The main wards are on the lower floors, and in the rear are sun balconies for convalescents. On the top floor are three operating rooms and laboratories for research work. On the fourth floor there are twenty-seven private rooms, with a special entrance and elevator. The Agnew Memorial Library, on the third floor, is in memory of Dr. Cornelius Ray Agnew, the founder of the institution. In the hospital will be 150 beds, or three times the number in the old building at Forty-first street and Park avenue.

The City's Tuberculosis Hospital.—The sum of $225,000 has been appropriated for the erection of buildings on the site selected by the municipal authorities for the proposed tuberculosis hospital at Otisville, a settlement in Orange County, seventy-seven miles from New York City. The land has an altitude of about 1,400 feet, and it is proposed to provide for the accommodation of about two hundred patients, who will be either persons in the incipient stages of the disease or convalescents from the hospitals. It is expected that the construction and equipment of shacks for patients will cost $80,000, and the dining room and kitchens $20,000 more. A barn for forty cows will cost $18,000. The power plant is to be built for $30,000, and the rest of the appropriation will go for dormitories, employees, roadways, paths, and general improvements.

Jewish Hospital for Deformities and Joint Diseases.—This institution was formally opened on November 4, and a reception was held by the officers and directors. The hospital is installed in a remodeled three-story building on Mount Morris Park at 1917 Madison avenue. In the basement are the offices and reception rooms for patients. The second floor is devoted to private examination rooms and *x*-ray room. On the third floor are the various wards. Most of the fourth floor is devoted to the operating room. The hospital is the outgrowth of a dispensary opened two years ago by Dr. Henry W. Frauenthal at Fiftieth street and Lexington avenue, and is nonsectarian.

Report of Chicago Pasteur Institute.—A summary of the results of preventive inoculation against hydrophobia has been published by this institute since its inauguration in 1890. A total of 2,775 patients have received the antirabic treatment; of these, 2,474 were bitten by dogs, 100 by horses, 84

by cats, 29 by cows, 23 by skunks, 9 by calves, 9 by wolves, 5 by pigs, 4 by coyotes, 4 by mules, 2 by burros, and one each by a rat and a sheep. Hydrophobic human beings infected 31 patients. Of the patients, 1,406 had received severe and multiple bites on the hands and wrists, 584 on the leg and thigh, 388 on the face and head, 359 on the arms, and 42 on the trunk. Only seven deaths were reported, giving a mortality rate of 0.25 per cent. Seven individuals gave up treatment, two of whom died subsequently from hydrophobia.

Chicago Home for Nurses Finished.—The new $30,000 Harris home for nurses at Wesley Hospital was recently accepted formally by the Trustees of the Hospital at their annual meeting. The home is the gift of N. W. Harris.

Army Nurses in England.—The British Secretary of War has recently had to decide the question raised in the House of Commons as to whether the nurses at Netley Military Hospital may go to dances. The Secretary came to the conclusion that occasional attendance at operas, theaters and concerts is not incompatible with the due performance of the duties of the nurses, but the late hours involved in balls and dances incapacitated them from giving the proper attention to the patients.

Statement of San Francisco Medical Relief Committee.—The Medical Relief Committee representing the New York Academy of Medicine, and the Medical Societies of the Counties of New York and Richmond announces that the total sum transmitted to the Medical Relief Committee at San Francisco amounted to $7,701.10.

To Restrict the Opium Trade.—At the jubilee convention of the National Temperance League, held in London last week, the Rev. Wilbur F. Crafts, a well-known reformer, introduced a resolution to petition all civilized countries to extend the scope of the Brussels convention of 1906, with the view to suppressing the trade in opium and intoxicants among uncivilized peoples. The resolution was adopted unanimously. The speaker stated that the only country in which the consumption of liquor was not increasing was the Congo Free State, where there was an international prohibition by seventeen countries.

Yellow Fever on a Transport.—The departure from Havana of the transport *Sumner* was delayed on November 3, owing to the discovery that one of the infantry officers on board was suffering from yellow fever. The patient, who had only recently arrived in Havana, was taken to Las Animas Hospital.

Radium in the Customs House.—The official status of radium as an import is proving a difficult question for the board of appraisers to determine. The Dingley tariff law makes no specific provision for radium, and importers have objected to the ruling that radium as a chemical salt is subject to a duty of 25 per cent. Application has been made to the board to review this decision, and the matter is being investigated by the General Appraiser.

Sleeping Sickness Cured.—According to reports said to have been received at Marseilles from French physicians in the tropics the majority of one hundred and fifty patients suffering from sleeping sickness have recovered under the use of thymol.

Death Penalty Abolished in France.—At a cabinet meeting held in Paris on October 30 a measure was approved providing for the abolition of the death penalty. This means that the Chamber of Deputies at its coming session will probably enact a law to that effect.

Tuberculosis in the Navy.—In his annual report submitted to Secretary of the Navy Bonaparte, November 2, Surgeon-General P. M. Rixey of the navy calls attention to the fact that tuberculosis is increasing in the navy and Marine Corps. The report states that if gunshot wounds, drowning, burns, and local injuries are eliminated, tuberculosis as a cause of death in those branches of the military service would stand second in 1900, fourth in 1901 and first for the past three years. In 1895 the ratio of cases per one thousand was 3.2, in 1905 it was 6.1.

Typhoid Fever in Jersey City.—Owing to the occurrence of 53 cases of typhoid fever in Jersey City during the month of October as against four cases in September, the Board of Health is taking active measures to impress on people the necessity of using only boiled water for drinking. It is stated that the city's water supply is being polluted in the Rockaway River valley at Boonton and Dover. The action of the Health Board is being opposed by some others of the city officials on the ground that the warning to the people is actuated only by political motives.

New Medical Directory of the State Society.—The eighth volume of the Medical Directory of New York, New Jersey, and Connecticut has been published and is being distributed. It shows that there are registered in Greater New York 6,034 physicians, and in New York State 11,976. Connecticut has 1,279 and New Jersey 2,276. The total number of names is 15,531.

Obesity Pills Barred.—The manufacturers of a widely advertised remedy alleged to cure obesity have been stopped from using the mails in consequence of a fraud order issued by authority of Postmaster-General Cortelyou. The pills were sold at $2 a box with the claim that they would reduce weight at the rate of eight ounces a day.

Newspaper Prodigies.—From Russell County, Ky., comes the report that a man of sixty-three years, resident in Rowena, has remained in a state of catalepsy twelve years. During this time he has received liquid nourishment twice a day, and his physical condition is said to be excellent. It is also reported that at a laporotomy recently performed on an insane man an iron bolt five inches long was removed from the intestine.

International Medical Association of Mexico.—The second annual meeting of this organization will be held in the *Herald* Club Rooms, in the city of Mexico, November 14 to 17, 1906. Excepting the papers by the Spanish members, the proceedings will be in English. The president of the society is Dr. R. D. Robinson of Torreón, Coah., and the secretary is Dr. W. R. Jamison of the same city.

Thurber (Mass.) Medical Association.—At the fifty-third annual meeting of this society, which was held in Milford on October 25, officers were elected as follows: *President,* Dr. O. C. B. Nason of Medway; *Vice-President,* Dr. C. H. Randall of Franklin; *Secretary,* Dr. A. J. Gallison of Franklin; *Treasurer,* Dr. C. B. Hussey of Franklin.

Sixth District Illinois State Medical Society.—At the meeting of this body held in Jacksonville on October 26 the election of officers resulted as follows: *President,* Dr. T. J. Pitner of Jacksonville; *First Vice-President,* Dr. Waldo Fisher of Alton; *Second Vice-President,* Dr. W. H. Hand of Whitehall; *Secretary and Treasurer,* Dr. W. P. Duncan of Jacksonville.

Chicago Urological Society.—At the annual

meeting of this society, the following officers were elected for the ensuing year: *President,* Dr. L. E. Schmidt; *Vice-President,* Dr. J. Allen Patton; *Secretary,* Dr. B. C. Corbus; *Councilor,* Dr. Wm. T. Belfield; *Alternate,* Dr. Henry G. Anthony.

Erie Railroad Surgeons.—The fifteenth annual meeting of the Association of Erie Railroad Surgeons was held at Chicago October 9 and 10, 1906. The next meeting will be in New York, October, 1907. The officers for the ensuing year are: *President,* Dr. D. A. Currie, Englewood, N. J.; *Vice-President,* Dr. T. D. Bain, Kenton, Ohio; *Secretary and Treasurer,* Dr. J. A. Allis, Upper Montclair, N. J.; *Executive Committee,* Dr. C. E. Sawyer, Marion, Ohio, Dr. S. Heilman, Sharon, Pa., and Dr. A. W. Booth, Elmira, N. Y.

Obituary Notes.—Dr. Thomas Stevenson of this city died suddenly on October 27 at the age of forty-one years. He was graduated from the Bellevue Hospital Medical College in the class of 1888, and was a brother of Dr. George Stevenson of this city.

Dr. Samuel Tinlock, one of the few Chinese physicians practising in this country, died of tuberculosis on November 2 at the age of seventy-two years. He had been a resident in New York's Chinatown for the last forty years. He was converted to the Roman Catholic faith many years ago and married a white woman, who survives him.

Dr. Charles Jenkins Finn of Hempstead, L. I., died on November 2 of apoplexy. Dr. Finn was born in Brooklyn in 1856 and began practice in Hempstead in 1876. He was a member of the Board of Education of Hempstead and was one of the surgeons of the Long Island Railroad. He was the family physician of many of the summer residents who have estates in the neighborhood of Hempstead.

Dr. Robert T. Davis of Fall River, Mass., died on October 30 at the age of eighty-three years. He was born at Amesbury, Mass., and received his medical degree from the Harvard Medical School. He was a former Mayor of the city of Fall River and served three terms as Republican representative in Congress. He had been a resident of Fall River for fifty-six years, and was one of its wealthiest and most prominent citizens.

Dr. J. W. Howard of Missoula, Mont., died at Great Falls on October 20 at the age of fifty-three years. He commenced the practice of medicine in Oregon in 1878, and in 1887 went to Montana and settled in Dillon. He also had practised in Butte, Bozeman, and Hamilton before going to Missoula.

Dr. J. W. Cooper of Bellaire, W. Va., a well-known physician of the Ohio Valley, died in Wheeling on October 29, after an illness of several years. He was a son of Dr. Cooper of Wellsburg, W. Va., but had practised for some years in Bellaire.

Dr. Andrew Jackson Runnells of Walpole, Mass., died on October 22 at the age of eighty-three years. He had been a practitioner for more than fifty years, but retired from active work ten years ago.

Dr. Ruel W. Dwight Rice, a retired U. S. Army surgeon, who served through the Civil War, died on October 22 at his home in Alameda, Cal. He was born in New York State eighty-six years ago.

Dr. Archibald Frazer of Ypsilanti, Mich., died on October 27 at the age of sixty-two years. He was graduated in 1870 from the New York Homeopathic Medical College and in 1879 settled in Ypsilanti.

Dr. Luis F. Urcelay of Merida, Yucatan, died suddenly of apoplexy on November 2 while bound for this country on the steamer *La Lorraine.* Dr. Urcelay was the head of the recently completed O'Haron Hospital in Merida, and had gone to Europe in order to recuperate after his arduous work in the hospital.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

PLAGUE COMMISSION—LATE RICKETS—UTERINE TUMOR—TUBERCULOSIS OF CERVIX UTERI—STERCORACEOUS OF THE APPENDIX VERMIFORMIS—ACLAND HOME—GUILD OF ST. LUKE—QUACKS COMMITTED—OBITUARY

London, October 19, 1906.

The inquiry instituted at the instance of the Lister Institute by the Government of India into the spread of plague reinforces the theory that the disease is chiefly transmitted by the flea of the rat. The report of the Commission has not yet appeared, but some of its operations and conclusions have been published by the authority of the advisory committee and are recorded by the *Journal of Hygiene.*

The association of rats with epidemics of plague has been noticed for generations, but the manner of communication was not established. Kitasato and Yersin showed that the bacillus was the same in rats as in men, but it was not until some seven or eight years ago that the flea was suspected to be the carrying agent. The Indian Commission has shown that plague can be so transmitted. Simond eight years ago satisfied himself that the flea could convey plague from one rat to another, but it was thought the rat flea did not infect other animals or men—a view now known to be untenable. The experiments of the Commission show that a common Indian rat infected with plague does not transmit the disease if no fleas are present. On the other hand, if fleas are present, plague may spread from an infected rat to a healthy one confined in a separate cage so as to prevent these animals coming into contact. Plague may be communicated to guinea pigs, and these may be let run among healthy animals, provided no fleas are present. An infected animal may suckle its young without giving them plague, provided no flea is present; but let fleas have access and the plague spreads from one to another, according to the number of fleas present. Other experiments and observations seem to prove that rat fleas in a house which has been disinfected after plague cases will give the disease to guinea pigs, the fleas being caught on these animals and placed on others which succumbed. The bacillus was found in the stomachs of the fleas. If houses in which plague had occurred were found to be freed from fleas, the bacillus disappeared from them sooner than had been previously supposed; but so long as they remained infection would continue.

At the Clinical Society the president, Mr. Clutton, delivered his address. Subject, Adolescent or Late Rickets. His first case he met with three years ago; a man at twenty-one, who at twelve had had to wear supports for genu valgum, and on whom osteotomy was done at sixteen for both knees. At nineteen curvature resembling genu recurvatum began. Patient shown, and skiagrams showed changes in the bone were of long duration, and apparently began at the epiphyseal lines. In the shafts adjoining the epiphyses there was much less cortex than normal and a large translucent medulla, and here the curvature had apparently begun. Diagnosis was established by the active state of rickets in the wrists, as seen in both radius and ulna by *x*-rays. Almost all the long bones showed changes at the ends of the diaphyses adjoining the epiphyses. Two other cases at twelve and fourteen were shown by skiagrams showing the disease in a recent state, the contrast with the older cases being most interesting. Two post-mortem specimens were also exhibited, one from the College of Surgeons and one from the Children's Hospital. A number of skiagrams taken by Dr. Greg at St. Thomas's Hospital were also shown.

Mr. E. Muirhead Little described, with the specimen from the College of Surgeons, a case occurring in a girl of seventeen in whom infantilism was well marked and the changes in the bones were extremely typical of rickets. At the operation the bone was quite soft.

Mr. Lucas, referring to a paper in which he had tried to show a connection between late rickets and intermittent albuminuria, said the emotional state of puberty favored the occurrence of both.

Dr. P. Weber recalled that Wright had shown that calcium salts would cure most cases of cyclic albuminuria, but had little or no effect on rickets.

Mr. R. C. Elmslie showed two cases and remarked on the difficulty of tracing the origin, the history obtainable being incomplete or untrustworthy. In many cases in which he had by the *x*-rays found rickets the condition was quite unknown to the mother., The signs might all disappear by the age of eight, except the puny development and head changes, particularly a curious high forehead. These features he always found in late rickets, and they suggested an early origin.

At the Obstetrical Society Drs. Eden and Provis related a case of intraligamentous fibrocystic uterine tumor weighing about thirty pounds removed by enucleation and incomplete hysterectomy. The patient died the next day, but post mortem could not be obtained. It was thought embolism was the cause of death, as there were complications suggesting such an occurrence.

Mr. Eric Young then read an account of a case of primary tuberculosis of the cervix uteri in a thin, nervous woman of twenty-six, married, healthy up to six months before seen. Thick, yellow discharge, a constant pain in back for five weeks, no bleeding, no glandular enlargement; cervix indurated and swollen, uneven, ulcerated in places, nodular, not friable; uterus freely movable; lungs healthy; no sign of tubercle elsewhere; none in family. Hysterectomy was done. Six months later no recurrence. Dr. Routh said the case was important in reference to the relative frequency of tubercle of the cervix and Fallopian tube. Dr. Lewers had had such a case and the patient remained well for several years after the operation. Dr. Galabin had had a case in which the body of the uterus had become involved so that hysterectomy was the only resource. Dr. Andrews had seen a similar case turn out to be syphilitic.

At the Medical Society of London the vermiform appendix was again under discussion—this time as the subject of actinomycosis, or, as some prefer to call it, streptothrichosis, as other forms of streptothrix than the ray fungus may be concerned in the disease. Mr. T. H. Kellock read the paper and gave some account of seven cases which had occurred at the Middlesex Hospital within the last three years. He described two types of the disease: (1) Simple streptothrix infection in or about the appendix; (2) a graver infection complicated by the presence of pyogenic organisms. In quiet cases slight, long-continued pain and indurated tissue were the clinical features. In suppurating cases early signs were followed by burrowing abscesses. When diagnosis was clear, operation was advised. There was some discussion of the paper and one of the speakers held that a cecal origin could not be excluded in most cases, if any, while as to treatment, operation alone was not sufficient, but iodide of potassium was also necessary to effect a cure.

Professor Osler opened the new wing of the Acland Home on Saturday. He read a letter sent by direction of the Queen, congratulating Miss Acland, to whose exertion much is due, on the success of the institution which bears the name of her great and good father. Dr. Osler remarked that with 3,000 undergraduates it was important to have a home to which they could apply in serious illness. It was established as a memorial of Mrs. Acland and the late honored professor.

The Guild of St. Luke had its annual service at St. Paul's on Wednesday, when above two hundred doctors in robes attended. The master and wardens of the Apothecaries' Company, wearing their blue gowns, trimmed with sable, formed a little procession and were conducted to seats in the choir. Then came the large choir, followed by the robed doctors, walking two and two. Dr. A. Caley read the first lesson (Eccles. xxxviii.) and Sir Dyce Duckworth the second (Luke xiii.). Canon Newbold, warden of the guild, preached from the Third Epistle of St. John, second verse, and dwelt on the work of doctors and clergy in the cause of health, bodily and spiritual, appealing to medical men to join with the clergy in work which both desired to promote.

Two quacks were committed for trial on Wednesday, charged with obtaining money by fraud. For years they have driven a thriving trade by advertising that the Rev. J. Hope would tell incurable patients of a remedy. On application powders were recommended; price, 18/6. Analyzed, they were found to consist of a mixture of sodium carbonate and potassium bromide, colored with bark, and valued at 2d. From January to September they netted £3,300 from ignorant sufferers, some of whom testified that they trusted the reverend gentleman and had no idea that he did not exist.

Dr. E. R. H. Pollard, M.R.C.P.I., 1887, Inspector-General of Hospitals and Fleets and First Inspector-General of the Royal Naval Hospital, Chatham, died in that institution on the 9th inst., aged fifty-one.

Lieut.-Col. C. S. Wills, C.B., late of the R.A.M.C., died on the 12th, after a long illness, aged seventy-two. He entered the army in 1860 and saw much service. In the Zulu War of 1879 he was P.M.O. and Sanitary Officer, Director of Hospitals, etc., was mentioned in despatches, awarded the medal, and retired as Lieut.-Col. and C.B. in 1889.

Surgeon-Major Walter Leach, R.A.M.C. (retired), died on the 13th, aged seventy-eight. He entered the Army Medical Department in 1854 and retired in 1875. He went through the Central Indian campaign, was present at several battles, for one of which he was awarded the medal.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

SALT-FREE TREATMENT OF EPILEPSY—THE BIRTH RATE IN SWEDEN—A MODIFIED RIVA-ROCCI APPARATUS—PROFESSOR HAMMARSTEN'S JUBILEE—COMPETITION FOR THE CHAIR OF SURGERY.

COPENHAGEN, October 16, 1906.

It will be remembered that Toulouse and Richet in 1900 recommended a new treatment of epilepsy, consisting in the withdrawal of sodium chloride from the food. The explanation of the good results was said to be found in the circumstance that the bromides, given to the patient, would show a greater efficacy. The treatment has been tried in many places, but the last word has not yet been said regarding its value. In Denmark the treatment has been tried by Dr. A. Sell, physician in charge of an asylum for epileptics, with nearly two hundred inmates. On the whole, he approves of the treatment, but a recently published research by Dr. Hermann Lundborg, physician of the Upsala Asylum (Sweden), would seem to show that not all cases are favorably influenced by it. Lundborg states that the treatment very often causes a remarkable decrease in the number of attacks, but, on the other hand, not seldom also a deterioration of the psyche. It would seem that the treatment ought only to be applied in asylums, infirmaries, and other places, where the patient is under constant supervision. It is indicated in cases with relatively frequent attacks without pronounced psychical accidents; in cases with transitory psychoses, when these appear in connection with attacks, the intervals being as free as possible; finally, in torpid forms of epilepsy without too pronounced stupor. The treatment is contraindicated in cases with grave complications in lungs, heart, vessels, or kidneys; in cases complicated by hysteria or epileptiform hysterical attacks; in cases of a pronounced erethistic type, and, finally, in cases in which stupor is more or less constant.

Another distinguished Swede, Prof. Pontius Fahlbeck, has published a highly interesting investigation into the birth rate of our time with special reference to Sweden. The many important statements made by the writer cannot but make a deep impression on all those who feel alarmed at the decrease in fertility of the human race in Europe. I shall here reproduce some of Professor Fahlbeck's results. In a table, giving the number of living born per 1,000 of the population, we see that France has gone down from 25.5 in the lustrum 1871-1875 to 21.9 in 1896-1900; Sweden during the same periods from 30.7 to 26.9, Denmark from 30.8 to 29.9, while Norway has remained stationary at 30.3, and Russia, blessed with the greatest relative number of births, shows a decrease from 50.2 to 48.3. On an average the tendency is toward a constant diminution of the birth rate in all European countries. Setting aside the comparatively unimportant amount of illegitimate births (an average for all Europe 6.18 per 100 of all living born), the question arises whether the diminishing birth rate is due to a decrease in the number of marriages or to a decreasing fertility in matrimony. In this connection it is interesting to note that the relative number of marriages is nearly constant in all European countries and equal to 7 or 8 per 1,000. Only Sweden and to a lesser degree Norway form exceptions to this rule. Until 1825 the marriage rate in Sweden was the same as that of the other European countries; but after 1825 the number began to decrease, and now it amounts only to the exceptionally low value of between 5 and 6 per 1.000. As regards Sweden and Norway, the explanation of the diminishing birth rate may consequently be found in the decreasing number of marriages, while it is evident *a priori* that a decreasing fertility must be the causing factor in the remaining European countries. But even the two Scandinavian peoples show a lessening fertility. The yearly number of births per 1,000 married women in the ages from fifteen to forty-five years amounted for Sweden during the period 1871-1880 to 300.9 against 276.1 during 1891-1900; for Norway the numbers were 322.5 and 311.1, for Denmark, 286.4 and 269.8, while France presents the appallingly low figures of 201.4 and 174.4.

The decrease in the birth rate, thus shown generally to exist, is neither caused by physiological alterations nor by an increasing poverty among the masses. On the contrary the wealth of the nations every day becomes greater; for the best authorities compute the annual sum of savings in France alone to be between two and three millions. According to Professor Fahlbeck it is the two-children system adhered to by an ever-increasing number of couples that causes the diminishing fertility. This system, if generally accepted, will, under the most favorable circumstances, yield a birth rate of at the utmost 13.2 per 1,000. Now the death rate is between 15 and 16 per 1,000 and cannot very well be expected to become lower than 15 per 1,000. The system will consequently result in what may be called a suicide of the nation, as in the Hellas of antiquity, where Polybius noted its deleterious effects more than two thousand years ago. To one drawback more connected with the said system the author draws attention. It would appear that if the two-children system had been generally adhered to in former days the peoples would have missed many of their great men, many of whom have been one of the latter links in a long chain of brothers and sisters.

Dr. H. T. Bing, whose investigations into the methods for estimation of the blood pressure I mentioned in my last letter, has now constructed a modification of the Riva-Rocci apparatus, aiming at the elimination of the errors due to the circumstance that the ordinary apparatuses indicate the lateral pressure instead of the end pressure in the artery. He seems to have succeeded, as a series of experiments show, that the values of the arterial tension indicated by Bing's apparatus are higher than those given by an apparatus of the original Riva-Rocci type, and that they are far less influenced by local peripheric or thermic irritants.

The famous Swedish Professor of Physiological Chemistry, Professor Hammarsten, has just celebrated his sixty-fifth anniversary. A stately volume containing researches by his present and former pupils has been published in his honor.

Dr. Schaldemose will be appointed successor to Professor Wanscher, who died six months ago. The competition has been very close, not less than eight of our most prominent younger surgeons having entered it. Each competitor had to publish a work of no small size on a surgical topic of his own choosing and to deliver a clinical lecture with three hours' preparation. Three of the competitors, Drs. P. N. Hansen, Lendorf, and Schaldemose, were then admitted to the final trials, consisting in a lecture on a surgical theme, the same for all of them, and communicated to them twenty-four hours in advance. It is generally reported that the judges found it very difficult to decide which of the three mentioned surgeons was most qualified to succeed to the disputed chair.

Progress of Medical Science.

Boston Medical and Surgical Journal, October 25, 1906.

External Eye Inflammations of Doubtful Origin.—Two cases are recorded by H. G. Langworthy. In the first case a young man of twenty-six suffered from a bilateral orbital cellulitis and exophthalmos simulating cavernous sinus thrombosis and double frontal involvement. The infecting organism was probably the pneumococcus. In the second case a young man of eighteen was the subject of acute bilateral edema of the eyelids of unknown origin. The diagnosis seemed to lie between angioneurotic edema and inflammation of both frontal sinuses. Both patients recovered. The author appends a bibliography of similar cases.

The Routine Treatment of Syphilis with Intramuscular Injections of Mercury Salicylate.—In this paper W. H. Palmer covers familiar ground. Nothing especially new is brought forward. He discusses the question under the headings of advantages of the salicylate over other mercurial salts, the advantages of this method over other methods, the disadvantages of the salicylate, changes produced in the tissues at the site of injection, the preferable injection site, the suspension fluid, the question of sterilization of the solution before injection (which he does not consider absolutely necessary), syringe and needles and their proper care, technique, dosage, and duration of treatment. He refers to an interesting case reported by Kalisch who met with a gumma which occurred at the point where an injection had been given five years previously. The gumma was incised and microscopical examination showed a minute amount of unabsorbed mercury which had probably acted as a local irritant, and in this way had determined the development of a gummatous lesion in this situation.

New York Medical Journal, October 27, 1906.

Tabes Dorsalis in a Negress.—The rarity of this disease in colored women leads W. G. Bowers to report a typical case occurring in a negro woman. He has been able to find twenty-one reported cases in this race, fifteen men and six women. The history presents no peculiar features. The patient was a woman of fifty-three, with symptoms dating back three years. She was in the hospital three and a half months and finally died from cystitis and sepsis following bed-sores.

What May Be Accomplished with Apparently Hopeless Cases of Tuberculosis.—Ten cases are reported by S. G. Bonney. They go to demonstrate the following propositions: (1) They are selected merely to illustrate the possibility of arrest in far-advanced cases. (2) The cases here described represent not simply what might be regarded as decidedly unfavorable cases, but were considered without exception, by other physicians as well as the author, as being utterly hopeless by virtue of every consideration which may ordinarily influence prognosis. (3) With the exception of the three cases, which are of very recent origin, the remaining seven have not simply undergone improvement with the ultimate outcome as yet uncertain, but have actually experienced a complete arrest of the tuberculous trouble, with entire absence of physical signs, sputum, and bacilli, with a complete restoration to former usefulness and activity. (4) The necessity for the practice of strict economy has been no insuperable barrier to the acquirement of complete arrest in a suitable climate and under proper régime. (5) No claim is made that the results obtained were entirely referable to climatic influences. It is contended, however, that such results in equally desperate cases are impossible of attainment in what may be regarded as relatively unfavorable climates, no matter how perfect the régime. (6) No special methods of treatment were employed other than those familiar to every physician of experience in the management of pulmonary tuberculosis. (7) No credit for results obtained is assumed other than that which may relate to an unremitting personal attention to detail, according to the exigencies of the situation and an adaptation of means to ends at times somewhat radical. (8) No case is here reported that is not entirely subject to confirmation by the attending physicians whose names are not cited in the report.

The American Aborigines from a Hygienic Standpoint.—A. L. Benedict presents an interesting study of the early history of the Iroquois and the Confederated Five Nations. They were not nomadic and not pastoral. Most of them lived jointly by hunting, fishing, and the cultivation of some of the more common vegetables. The degree to which vegetable food was used varied greatly according to local customs, soil, fertility, and the state of peace or war. Tobacco was obtainable only by barter and in small quantities. Willow bark was smoked to some extent, but smoking was not common. Alcoholic drinks were practically unknown until introduced by the whites. Semi-starvation alternated with gourmandizing. Almost all animal food was eaten well cooked. As a rule, permanent dwellings, as we understand the term, were not used. Small communities existed, but their location was changed from time to time, according to the need for firewood. Whenever a village was destroyed by fire, war, or any epidemic occurred, the site was permanently abandoned. As a rule these Indians manifested a considerable practical knowledge of sanitary science. Their villages were well located with reference to sandy soil, good drainage, good brooks for fishing, etc. Burial places were placed at a safe distance, and not more than twenty skeletons have been found at any one place. These people were not prolific. Few remains of small children have been found.

Sclerosis of the Coronary Arteries.—Harlow Brooks presents the results of a study of 270 cases noted in 1,000 consecutive autopsies. The disease may occur in comparative youth, being then amenable to treatment, and is not to be looked upon as a purely senile change. The average age of the author's cases has been about forty-five years. The abuse of alcohol appears to have been the most common exciting agent. The next most common cause is nephritis. Then comes syphilis. Other causes have been tuberculosis, cancer, diabetes, rheumatism, and myelitis. Overwork as a causative factor

has probably been overestimated. The conditions producing gout and rheumatism may lead to coronary thickening. The most common type of the disease is that of an endarteritis in which proliferative alterations are introduced in the subepithelial layer of the intima, although certain cases appear to show primary pathological changes of the adventitia in the greatest degree. In the author's experience true arteritis is rare in the coronary arteries. The most frequent change in the heart muscle was fatty degeneration. All the 270 cases except fifteen showed lesions of the myocardium visible to the unaided eye. Brown atrophy was noted in sixty-four; fibrosis was found in twenty-four; hypertrophy was noted in thirty-five; actual dilatation demonstrable on post mortem was presented in twenty. The author discusses the symptoms of the disease and passes on to consider treatment. In early cases, when the condition may be presumed to be present, though not absolutely demonstrable, hygienic measures are of great service. All mental and physical excesses must be avoided. Causative factors must be eliminated as far as possible. Diet must be regulated for each individual case. In the advanced cases which call for the use of medicinal remedies probably the best one at our command is the iodides. When vasodilatation with sedation is required strontium bromide is of great service. Chloral is often satisfactory in this direction. When immediate vasodilatation is required amyl nitrite is the choice. When the myocardium begins to degenerate drugs of the digitalis type are indicated. They must be used cautiously, however, or there may be a danger of fatal arterial spasm. When rapid heart action is present, rest in bed, morphine, and the icebag become imperative. Rest, however, may in some cases be enforced to an injurious degree.

Indications for Surgical Intervention in Diseases of the Stomach.—J. A. Blake divides operations on the stomach into three classes: First, repairs of wounds and perforations; second, improvement of drainage; and third, partial excision. In the first class surgical intervention is immediately indicated. In the second class the only conditions that can be helped are those which interfere with the normal drainage of the stomach. Such are pyloric obstruction, intermediate obstruction, or hour-glass stomach and ulcer. If there is evidence of pyloric obstruction we should not wait for evidence of a tumor, diminished hydrochloric acid, or dilatation of the organ. Hour-glass contraction always requires surgical intervention. In ulcers we may have acute or chronic conditions. In general the former call for medical and the latter for surgical aid, but we must be careful to understand just what is meant by these terms. Perhaps the designations of "early" and "late" would be better. Pyloric ulcers may be excised or treated by gastroenterostomy while cardiac ulcers must be excised. In the third class of cases the author states that when the pylorus with only the adjacent portions of the stomach and duodenum is removed, the operation is known as pylorectomy, while partial gastrectomy usually infers the removal of the pylorus with a considerable amount of the stomach. When only a small part of the stomach wall, such as an ulcer, is removed the term excision is employed. Carcinoma is the main indication for pylorectomy and partial gastrectomy, but not infrequently the pylorus, with the adjacent portion of the stomach, should be removed for ulcers, particularly when large or multiple; in fact, as has already been stated, on account of the possibility of malignant degeneration, the excision of ulcers when practicable is always indicated. In cancer of the stomach there is no question as to the propriety of operating, unless we feel certain that it has advanced so far that there is no hope of good even from a palliative operation such as gastroenterostomy. The author then discusses points of differential diagnosis and shows by collated statistics that the mortality of these extensive operations is steadily lessening. He does not think that we should refuse operation in any case in which there is a chance for benefit, particularly when stomach drainage is being interfered with.

American Medicine, August and September, 1906.

Influence of Rest, Exercise, and Sleep on Gastric Digestion.—Julius Friedenwald, from his observations draws the following conclusions: In persons with normal digestive powers it makes but little difference whether the individuals rest, exercise, or sleep after meals, though after violent exercise or sleep the gastric digestion is very slightly impaired. In patients suffering with superacidity and subacidity it is best to order rest after meals; after violent exercise or during sleep the digestion is impaired in these cases. In patients suffering with motor disturbances of the stomach it is best to prescribe moderate exercise after meals, for rest, violent exercise, or sleep disturbs the digestion under these conditions.

Multiple Chancre.—A. F. Büchler states that while the initial lesion of syphilis is generally single, in a goodly proportion of cases it is found to be multiple. The results of the writer's investigations show that in the two hundred and seventy-three cases of initial lesion of syphilis recorded in recent years, thirty-three, or a proportion of more than twelve per cent. were of the multiple form. Of these thirty-three cases, in twenty-five there were two lesions, in six there were three, and in two there were five. The multiple lesion, according to the writer, was either purely genital, purely perigenital, or purely extragenital in location. In the first group there were thirty cases, in the second one, while two lesions were extragenital in position. Numerous well-attested examples of combinations of these groups have been recorded. As to the mode of evolution of the multiple lesion, the histories here reported are incomplete. However, the development of the chancres in most of the cases was said to be synchronous. In a number of instances the evolution was successive. The interval between the appearance of the first and the successive lesion or lesions, with the exception of one case, never exceeded a week. The writer believes that in the negro the dual chancre is the rule.

Treatment of Cancer of the Breast.—Beverly MacMonagle presents these conclusions: All tumors of the breast are a threat to the well-being of the patient. Positive diagnosis cannot be made in the early stages without microscopic aid. All tumors of the breast should be removed with care to prevent reinoculation. Microscopic diagnosis should be made. This should be followed at once by radical operation if the growth is found to be malignant. This method gives the best chance of improving the results of surgical treatment of cancer of the breast.

Pernicious Effects of Alternating Currents of High Voltage.—Frederick H. Millener has recently made careful investigations in twenty-four cases of individuals suffering from the pernicious influence of the alternating current, especially when of high voltage. He calls attention to the well-known fact of the souring of milk immediately after a thunderstorm. In dairies in which separator machines are used the direct current is invariably employed because souring of the milk does not occur when this is used instead of the alternating current. The writer describes a patient who worked in one of the power plants. These plants are kept scrupulously clean, but the patient in a short time had lost his appetite, his face and hands had become almost chalky white, and his condition was becoming serious. The writer then asks what this mysterious force is which flows through the atmosphere. The other patients whom he has examined show symptoms similar to those here described. He believes that the condition is due to the effect of the alternating current of high voltage. He presents this problem, the solution of which he cannot predict. If a man thus disturbed should apply for life insurance he would be put in the substandard list. This problem is sufficient to warrant further study and investigation.

Scarlet Fever.—Joseph F. Chmelicek Luhan in the last five years has not lost a patient with scarlet fever, nor among his 129 patients has there been a serious complication. He believes that the condition of the blood is the direct cause of cardiac paralysis, to which death is due in so many cases of this disease, especially in children. He isolates the patient in the lightest and best room in the house. A warm bath is given and the bowels are relieved by an enema or magnesium citrate. The patient is kept on a strict diet of milk, with plenty of water and soups. Antipyretics, excepting the tepid bath, are not used. Elixir of sulphocarbolate of iron is prescribed up to the fourth day; after this, elixir sulphocitrate of iron is administered for four days.

The Making and Dressing of Wounds.—Miles F. Porter declares that wounds should be as small as may be compatible with accurate, reasonably rapid work. He concludes his paper with the following statements: Unwise efforts to produce asepsis may cause more harm than the bacteria against which they are directed. The surgeon's attitude toward nature should be that of a modest cup-bearer, not that of a usurper. Sutures, redressings, and drains are, at best, necessary surgical evils; hence, all sutures should be discarded in favor of the bandage and adhesive plaster when these can be made to serve the same purpose, but when the use of

sutures is imperative, then (a) buried absorbable sutures should be preferred; buried nonabsorbable temporary sutures should be the second choice; through-and-through sutures should be used only on compulsion, and buried permanent sutures should be discarded except in work on the hollow abdominal viscera; (b) the physician's aim should be to do the first dressing so that it will be the only one needed until healing is accomplished, and, when this is impossible, efforts should be directed toward preventing the necessity of frequent dressing; (c) when in doubt, the physician should not drain, but, if drainage is imperative, it should be adequate without being harmful, kept up while it is needed, and discarded so soon as it has fulfilled its mission.

The Relation Between Tonsillitis and Acute Articular Rheumatism; with Particular Reference to the Prophylaxis of Postanginal Rheumatism.—Charles F. Kieffer has studied the retained records of Fort Russell for a period of thirty-eight years. These records show 2,275 cases diagnosed as acute tonsillitis. In the same time there were 1,293 cases diagnosed as acute articular rheumatism. The records seem to indicate that the epidemic or infectious form of tonsillitis is followed in a large proportion of cases by rheumatism. In these records 276 cases of articular rheumatism were preceded by tonsillitis, a proportion of 21.3 per cent. The extreme incubation period varied between three days and thirty days, with an average of twenty-four days. The writer has had excellent results in the prophylactic treatment of postanginal rheumatism. On admission, the patient is given a full mercurial purge; the throat is then gargled with a saturated solution of sodium bicarbonate. Then finely-powdered acetyl-salicylic acid is rather firmly applied to the tonsil with a cotton-tipped wooden probe. Applications are made thrice daily. In the series of patients treated in this way not one case of rheumatism developed.

The Use of Nauheim Baths for the Failing Heart of Acute Infectious Diseases, Especially in Pneumonia; with Studies of the Blood-Pressure.—Philip King Brown says that under the immediate influence of Nauheim baths for chronic heart troubles there is a slowing of the respiration, a slowing in the heart rate, an increase in the volume of blood in the peripheral arteries, with a corresponding increase in arterial tension, and in the amount of urine eliminated. The writer has studied the effects of these baths on patients who were suffering from pneumonia. The pulse, respiration, temperature, and blood-pressure were taken before the bath. A full-strength bath was given at once. In practically every instance there was a lessening in the pulse and respiration rate, and a rise in the blood-pressure. In a few cases the effect of various drugs on the blood-pressure was compared with the effect of the baths. In every instance the average blood-pressure was higher and better sustained on the days when baths were given than on the days when drugs were given. The writer believes that the supplemental use of drugs is not to be neglected.

Treatment of Pneumonia.—Woodbridge Hall Birchmore declares that after the intestinal tract is emptied and cleansed and carefully maintained in satisfactory condition, nutrition will not be seriously interfered with. The body can then supply the needed strength for the healing process. To combat the cough ammonium chloride and the mixtures of the bromides have been found of the utmost use. The control of the circulation is best accomplished by the combined use of aconitine and digitaline. The latter causes contraction of the pulmonary arteries, while the former relaxes the systemic blood-vessels. If there is insomnia the writer believes that hyoscine is the best hypnotic.

An Unusual Case of Tic.—Alfred Gordon reports this case. The patient, a man twenty years old, exhibited peculiar forward movements of the trunk. These movements consisted of abrupt, spasmodic, and repeated bending forward of the upper half of the body over the lower. The contraction was found to be limited to both recti muscles. The tic was exclusively abdominal and in the domain of the recti muscles. No other part of the body was involved. The treatment suggested was chiefly psychic.

Journal of the American Medical Association, Nov. 3, 1906

The Dangers of the X-Ray.—D. L. Edsall's study of this subject during the past eighteen months has shown that the rays have effects on metabolism, in some instances most violent, occurring even in normal individuals, and that these are apparently present whenever a general influence is clinically observable. These metabolic changes are due largely, if not entirely, he thinks, to tissue destruction as shown by a relatively large output of uric acid, purin bases, and phosphates, indicating the excess of nucleoproteid destruction. Histologic studies by Warthin and others show that the organs most affected are the bone marrow, spleen, and lymphoid tissues. Edsall says that the effects of a single dose may be more severe than those of a similar dose of any other therapeutic agent with which he is acquainted, and may be either very useful clinically or so dangerously violent as to hasten death, or even to cause it where it might otherwise have been avoided. He has known of two deaths from this cause. He thinks we will have to recast our views somewhat; instead of considering the *x*-ray as an agent only secondarily and somewhat distantly harmful, we should recognize in it an agent as effective as a powerful drug, and one not to be used without good and sufficient reasons and with all needed precautions against its doing any possible harm. The *x*-ray specialist, moreover, should be fully informed as to all possible contraindications, so as to be able to employ reasonable caution in his applications. Edsall compares the *x*-ray to anesthetics, which no one thinks of recommending without due consideration of their possible dangers in any particular case. He mentions two groups of disorders that seem to him to deserve more careful consideration in this connection than others. One of these is nephritis; the other includes patients suffering from any serious degree of toxemia. A possible third group includes patients with decided anemia, especially if combined with toxemia. He believes that there are decided therapeutic possibilities in the action on metabolism of the *x*-ray, but it must be used with a definite appreciation of its restrictions.

The Effects of Pericarditis on the Heart.—N. S. Davis reviews the symptoms and lesions of pericarditis which are liable to be unrecognized because they are secondary in most cases to infections producing other symptoms that engross the practitioner's attention, especially when there is not much serous effusion. The myocardium is not apt to be seriously involved in acute or fibrinous forms of pericarditis, save in cases where the pericardial inflammation has complicated an already enfeebling condition. The effects of adhesions have no characteristic symptoms and rarely interfere with the functions of the heart to serious or even noticeable extent. The most trustworthy symptom is the unchanging shape of the area of precordial dullness during inspiration and expiration, which must exist when a pericarditis fastens the heart to the anterior wall of the chest. Adhesions are not usually very dangerous except in enfeebled conditions or after acute illness interfering with compensation. In most cases pericarditis is not fatal. From 50 to 75 per cent. of patients are estimated as recovering. Rheumatic pericarditis, as compared with that from other infections, is benign. Purulent and hemorrhagic pericarditis, unless recognized and successfully treated, is almost always fatal. A rapidly developed effusion is dangerous, but aspiration or treatment may produce recovery or a prolongation of life. A large slowly developed effusion is not threatening or immediately dangerous, and a small effusion is of no more gravity than fibrinous inflammation. About one-third of all cases are serofibrinous, about one-sixth are hemorrhagic or purulent, about one-twelfth tuberculous, and in an approximate number there is total adhesion, but in one-third there are partial adhesions. The condition of the heart muscle largely influences the prognosis. The chance of prolonging life is slight in cases of chronic alcoholism and the cachexias of cancer, Bright's disease, and tuberculosis. In these it is usually due to a terminal infection and is often the direct cause of death. It is also a much more serious complication with pneumonia than tuberculosis, and is a very grave complication with sepsis. Naturally, it is most dangerous at the extreme periods of life.

Angina Pectoris—True and False.—True angina pectoris, according to J. M. Anders, is a comparatively uncommon condition. Its mechanism is as yet imperfectly known, but two facts are generally acepted: 1. In the vast majority of cases it is accompanied with structural changes in the cardiovascular system; and 2, irritation or disturbance of the cardiac sensory nerves exists. He reviews the theories of its etiology and pathology and inclines to accept as probable the explanation of MacKenzie that impairment of the muscular contractility of the heart acts as an exciting cause

and elucidates many cases. An impaired nervous vitality must also be looked on as a predisposing cause. "But," he asks, "may there not be added peculiar nutritional or degenerative change in the nervous system, brought about by high nerve pressure, which finds its expression in a peculiar neurosis that serves as the predisposing element in angina pectoris?" Angina *sine dolore* must be accounted for, a condition, the main feature of which is an indescribable, almost painless, precordial oppression, that is not uncommon, engrafted on a variety of cardiac structural lesions. It shows that there is a distinction to be made between paroxysmal precordial pains and angina pectoris; the essential difference between true and false angina may yet be found in some at present unknown agency, or possibly in the different impairment of the muscular contractility, this being slight in the latter and carried to a dangerous extent in the former. False angina is characterized by precordial pain without the *angor animi* and without gross organic lesions, and it yields to appropriate treatment. Three groups are recognized, namely, the neurotic, the toxic, and the reflex. The latter class, Anders thinks, deserves consideration by itself, and the fact that certain contributing factors in true angina are present also in this variety renders it of special importance. The differential diagnosis between true and false angina is discussed and caution is suggested in making the diagnosis of the latter. Pseudoangina may develop into true angina, and it is safer for the patient to treat it as for the latter in dubious cases. There may be cases of true angina without apparent cardiovascular lesions, and in rare cases there may be an impossibility of their distinction. In spite of this and of the etiological affinities, Anders agrees with Huchard, Osler, and others in adopting this provisional classification and separating the functional from the organic forms whenever practicable. True angina is related to the functional forms so far as the vasomotor disturbances are concerned, but it also includes pathological lesions whose relations to the symptoms are truly obscure and complicated.

Appendicitis and Gallstones.—Attention is called by J. G. Sheldon to the apparent relationship existing between appendicitis and gallstones. From July 15, 1903, to July 1, 1906, he operated on forty-eight patients with gallstones, and on seven with appendicitis with cholecystitis without gallstones. In these seven cases his opinion was that the cholecystitis was secondary to the appendicitis. In two of the gallstone operations acute infection was present and the appendix was not examined. One of these patients is well, but the other complains of abdominal symptoms and has tenderness over the appendix. In the remaining forty-six gallstone cases the appendix was normal only in four, and in thirty-four of the others the history was plainly suggestive (and in some of them definite) of former appendicitis, dating back ten or twelve years. He reviews the evidence pointing to the origin of the infection causing gallstones, and deduces the probability of chronic appendicitis furnishing the germs through the blood stream. If the liver, through its inefficiency or from the number and virulence of the germs, is unable to dispose of them, and some of them are continually escaping into the bile stream, disease of the bile passages might occur. While this route is not definitely proven, it appears, theoretically and clinically, probable. Hence he concludes that disease of the appendix should be kept in mind in every gallstone operation. The appendix should be inspected when possible, and should by no means be considered normal on account of the absence of periappendicular changes. Unless Sheldon's experience has been altogether exceptional, he thinks that those who follow the above advice will be impressed with the frequent coincidence of appendicitis and gallstone disease, and that if the combined operation is done more frequently the results will be more permanent and satisfactory.

Sterile Salt Solution Injections in Intraperitoneal Hemorrhage.—M. Jampolis concludes: 1. The infusion of physiological salt solution into the peritoneal cavity should be practised in every case of hemorrhage not accompanied by infection, for two general reasons: (a) Its effect on shock; (b) its beneficial action on the peritoneum and the conditions in the peritoneal cavity; in some cases its effect would be palliative, in others, curative. 2. In cases of intraperitoneal hemorrhage accompanied by such severe shock as to render an immediate laparotomy necessarily fatal, the immediate infusion of warm physiological saline solution would certainly do no harm, but would stimulate the peritoneum, counteract existing shock, and prepare the system for any that might follow a subsequent operation. 3. If hemorrhage had ceased and laparotomy was not required, it would be of the utmost value. Besides combating shock, the solution would mingle intimately with the blood, hold the particles in suspension, and hasten absorption without permitting clots to form to be the basis of troublesome and dangerous adhesions. 4. The procedure requires no great skill and can be carried out by any general practitioner.

The Lancet, October 20, 1906.

Some Observations on Enlarged Veins in Children.—Fourteen cases are detailed by A. G. Gibson. He notes the finding of enlarged small veins on the chest and elsewhere in certain hospital cases with general debility, wasting, and listlessness. On the chest they appear as small ramifications flush with the surface of the skin; in front they tend to converge toward the upper part of the sternum, but behind they usually show a stellate arrangement. In some of the most marked cases large veins can be seen as far out as the deltoid region. As a rule no veins are seen below the chest, but the author has seen cases in which there was no abdominal disease showing such venules about the groin. The jugulars can almost always be seen either as blue streaks or distinctly dilated; one or both sides may be affected. Veins can frequently be seen also under the chin, at the temples, and very occasionally on the forehead. A normal adult from a number of causes may present a full jugular vein, but in very few children with no suspicion of disease is such a condition seen. In adults a large jugular vein is always emptied during inspiration, a fact which can most readily be verified by watching the neck of a person breathing deeply under ether; but in children who have large jugular veins together with venules on the chest a deep inspiration produces only a slight collapse, if any, of the veins; this is true of the upright as well as the recumbent position. The cause of this venous distention is undoubtedly tuberculous enlargement of the bronchial glands. Probably in most instances the mediastinal glands are similarly affected. The author notes that we have as yet no absolutely positive means of detecting minute glandular lesions of the mediastinum, so frequently the cause of a general infection, and suggests that the presence of visible veins on the chest, dilated jugular veins which do not collapse on inspiration, visible veins under the chin or on the temples, together with the other suggestive facts (enumerated above) in the history and state of the patient, may lead to an increase in the number of these cases diagnosed during life. It is hardly necessary to mention how quickly these children improve under a liberal diet and ordinary attention to health, and therefore what a valuable weapon for prophylaxis the knowledge of the presence of mediastinal tuberculosis may become.

A Method of Taking Impressions of the Weight-bearing Surface of the Foot.—W. D. Lawrie refers to a method recently suggested by Schüman of Leipsic. Two solutions are used, one of ferric chloride and the other a 5 per cent. solution of ferrocyanide of potash. It is found that it is difficult to handle the iron paper on which the foot rests and to distribute the ferrocyanide solution evenly over the foot. The author has therefore substituted the following method: The materials required are a glass slab, say 16 inches by 13 inches, a roller, and a tube of specially prepared printer's ink. A thin film is pressed out on the glass plate by the roller, and after standing on this the patient transfers his blackened sole to a sheet of paper. It is important to see that the patient puts his weight on the foot during both parts of the process. The result is an accurate and permanent impression of the weight-bearing portions of the foot. The foot can be easily cleaned with soap and water. The impressions may be photographed and reduced in this way to a size suitable for the notebook. Illustrations are shown from photographs of such impressions. A normal impression is by no means the rule. One picture shows the result of wearing high-heeled boots, viz., pes cavus with crowded toes. Another picture illustrates a case of flat foot. The method is inexpensive and easy of application.

Oral Sepsis in Operation on the Throat.—W. Wingrave makes a plea for putting the mouth in as favorable condition as possible before throat operations are undertaken and for the maintenance of this condition during the period of healing. Most cases do well under

ordinary circumstances, but there are some patients in whom the tonsil "stump" is very unhealthy looking, disinclined to heal, and complicated with middle-ear infection and constitutional symptoms. These are almost invariably the subjects of oral sepsis, malnutrition, or neglected sanitary measures—personal and with reference to home surroundings. The nasopharynx is normally sterile, but not so in the ordinary adenoid case. As a rule the less an infant's nose is interfered with, the better. Anterior or posterior nasal douching are not to be recommended. He advises the use, in twelve to twenty-four hours after operation, of a 1 per cent. solution of Peruvian balsam in albolene blown into the nostrils. Carious teeth should be removed. He mentions a long list of remedies which may be used in the mouth by gargling or with young children by the mouth douche.

A New Aspect of the Pathology and Treatment of Leprosy.—R. S. Black calls attention to the condition of the nose and nasopharynx in leprosy. For a long time he was puzzled to account for the marked chemical difference between the maculo anesthetic and nodular forms of the disease. It finally occurred to him that the nodular and mixed forms were simply the maculo-anesthetic form plus the infiltration and edema of the subcutaneous tissue in various areas caused by the active invasion of the bacillus lepræ. In practically all cases of nodular leprosy anesthesias and leucodermic patches can be found just as in maculo-anesthetic leprosy. He also noticed that when a nose had fallen in in some cases of nodular or mixed leprosy the type of the disease in the individual seemed to change and he became practically in course of time a maculo-anesthetic case, the infiltrations being gradually absorbed. He further noticed that some cases of undoubted maculo-anesthetic leprosy were of an extremely mild character. A patient would have a few anesthetic patches on his body with, perhaps, a contraction of the small and ring fingers of one of his hands and would otherwise be in perfect health—in which condition he would remain for years. He also found that practically all the active cases of mixed and nodular leprosy suffered from rhinitis and were discharging bacilli with the nasal secretion in great numbers, whereas except in a few of the early cases he found that the maculo-anesthetic patients had no bacilli in their nasal secretion. The above considerations afforded him what he considered to be a solution of the problem. He thinks that there can be hardly any doubt that leprosy in its early stages begins as a small ulcer on some part of the extensive nasal mucous membrane. We know quite well from our clinical experience of the disease that leprous ulcers in favorable circumstances tend to heal. There can therefore be little doubt that a person can suffer from a leprous ulcer in the nose that may heal and pass entirely away. This is the explanation of the maculo-anesthetic cases. They have had nasal ulceration which has passed away, in some cases leaving perhaps a cicatricial shrinking of the nasal septum, but during the time the ulcer existed leucocytes or white connective tissue corpuscles got detached from the ulcerating spot and along with the bacilli which they were attempting to devour were carried by the blood stream and lodged in various situations in the peripheral nerves, where they got entangled, and the bacilli then proceeded to grow, causing pressure on the fine nerve fibrils and consequently setting up nutritive changes in the skin which these axis-cylinders supplied, thus causing the patches of discoloration and anesthesia. The corollary from this theory of etiology is that if the disease can be recognized in the nose in its early stages, the treatment can be brought into line with that of tuberculosis and diphtheria. We must destroy the local nidus before the system at large becomes infected. He also thinks that the opsonin theory of Wright may be applicable to the therapy of leprosy. This possibility is made more promising by the fact that the *Bacillus lepræ* seems to be a surface growth and that it takes a very considerable time to become established in the body.

British Medical Journal, October 20, 1906.

The Influence of Early Feeding in the Treatment of Typhoid.—F. J. Smith would avoid hard, indigestible, and sharp-edged seeds of such fruits as nuts, grapes, oranges, strawberries, figs, etc., but does not object to giving the strained juice of such fruits as are juicy enough for the purpose. Moreover, he would avoid giving any food too freely or injudiciously, but he does not interdict a bit of bread and butter or an egg simply because a patient's temperature is not absolutely normal. He has on record a series of 113 cases with twenty-four deaths occurring in hospital practice, but of the deaths but four took place after solid food had been given. The remaining twenty had received no solid food. He compares his own cases with those of the other physicians in the same hospital. His own patients were placed on food (bread and butter or rusks, fish, and meat) and were fed about two weeks earlier on the average than the cases of his colleagues. His own cases had 2 per cent. of complications (venous thrombosis, peritonitis, and abscess formation), while the collective cases (1,429) of his colleagues showed 10 per cent. of complications. This remarkable immunity of the "early-fed" cases can only be explained by the better resisting power of the patients. The less frequent occurrence of thrombosis (Smith 1 in 113, colleagues 59 in 1,429) may be accounted for by the fact that the author's cases had a diet containing less calcium than the patients obtained on the ordinary milk diet. Early feeding seems to have but little effect on the occurrence of relapses. Other interesting points of comparison are given.

The Treatment of Typhoid Fever.—The paper by W. B. Thistle is an inquiry regarding the effect of purgatives on the intestinal lesions of typhoid. He believes that the battle is mostly won or lost in the first week of the disease. If nothing is done to limit infection of the glands or of the body, the result is a matter of chance. He believes that the judicious use of purgatives greatly limits the number of bacilli gaining access to the intestinal glands, and thus limits the destructive process in them. He has never encountered during the period in which he has relied on purgation a fatal perforation or hemorrhage. As soon as a case comes under his care he sweeps the intestines clear as quickly as possible with purgatives, giving usually a few grains of calomel followed by half an ounce of some saline. He repeats this process day after day, the object being twofold. First, to prevent additional infection of the intestinal glands, and, second, to abstract toxins from the body by way of the bile stream and the intestinal secretions. The time to cut off or attack the bacilli is, of course, before they are carried to the glands; while they are in the drainage area, which in the case of the intestinal glands is the intestinal mucosa and the intestinal contents. If purgatives are freely and frequently used, and are efficient in the early period of typhoid infection, it must be that many bacilli are removed from the drainage area that would otherwise go to increase the number already in the glands. If the purgative is repeated day after day and at the same time an antiseptic is given, the effect, in so far as the drainage area of these glands is concerned, is identical with the surgical procedure of bathing an infected surface with an antiseptic lotion. The good effect upon the glands is due in both cases to the removal of bacilli from the drainage area, and the consequent curtailment of bacterial infection in the glands.

Spirochetes in Yaws and Granuloma Pudendi.—A. MacLennan records the findings in some smear preparations from yaws. The smears were fixed in methyl alcohol and were stained in a number of ways. In one specimen taken from a papilloma in recurrent yaws numerous spirochetes were observed. The method of staining was by Giemsa's solution and gentian violet. These spirochetes possessed similar characters to those of the *Spirochæta pallida,* but the staining was fainter. Loops in the course of the filament were observed, as in the pallida. In two smears from *Granuloma pudendi* he has found a few spirochetes—most probably the refringens—while in one stained first in fuchsin, then in acetone gentian violet, a number of very long highly-refractive spirochetes were observed. These parasites were much longer than the *Spirochæta pallida,* and the waving was finer and closer. In one forty waves were counted. Though the staining was very prolonged, these spirochetes were very faintly stained. There were also a number of other structures present which were less definite.

The Management of Advanced Cases of Heart Disease.—This subject is considered by R. Saundby under the headings of exercise, Schott treatment, diet, heart tonics, vasculodepressant remedies, bleeding and leeching, tapping, purgation, oxygen inhalations, and hypnotics. We can refer here to only a few of the many practical points he suggests. He gives a high commendation to the baths and exercises of the Schott system, though attaching no importance to the presence of free carbonic acid gas in the water. Rest is called for in a more or less recumbent position: (1) When

more or less dropsy is present; (2) when walking brings on severe dyspnea or pain, and (3) when the circulatory condition is so bad as to cause danger of syncope. Digitalis is the best of the heart tonics. Next come caffeine and theobromine. Nux vomica and strychnine should not be held back until the patient is *in extremis*. Erythrol tetranitrate is his favorite vascular depressant in half grain doses (tablet) every four hours. It occasionally causes severe headache and must be withheld. It may be given alternately with digitalin. For purgation he prefers elaterum. Oxygen inhalations may be tried, but Saundby has little faith in their efficiency. They may be ordered for patients who are in a hopeless condition to satisfy the desire of the friends that something should be tried, but the difficulty being not to get air or oxygen into the lungs, but to carry on the pulmonary circulation with greater rapidity, no advantage accrues to the patient from a higher proportion of oxygen in the air inhaled, as only a definite amount of oxygen can be taken up by the blood, and this is determined not by the quantity present, but by the state of the circulation.

Berliner klinische Wochenschrift, October 15, 1906.

A Contribution of the Serum Treatment of Syphilis.—Engel describes observations made in three cases of syphilis treated by means of injections of an autoimmune serum obtained in the following way. About twice a week 10 cc. of blood was taken from the forearm of the patients, and after heating for half an hour in order to inactivate the complement was injected into the peritoneal cavity of a rabbit. After twelve injections the rabbit was bled from the ear on ten different occasions and from 1-5 c.c. of the serum obtained was injected under the skin of the arms or backs of the patients. Each injection was followed by a sharp local and general reaction. All of the lesions subsided, apparently in consequence of the treatment, and there have been no fresh manifestations during several years. The author describes hemolytic and other tests of the serum produced which lead him to believe that it really contained antibodies, and he suggests that other diseases such as pernicious anemia and some forms of nephritis may be amenable to treatment carried out along the same lines.

The Early Diagnosis of Syphilis.—Danziger is of the opinion that the spirochete question has reached a stage of development which renders it available in the early diagnosis of primary syphilitic lesions. He gives the histories of five cases in which it was possible to identify spirochetes in secretion obtained from genital lesions whose character was still indeterminate and which subsequently developed into chancres. He therefore urges that this method be applied more generally, though he points out that only a trained observer can give a reliable opinion as to the nature of any organisms that may be discovered.

Münchener medizinische Wochenschrift, October 16, 1906.

The Treatment of Fresh Wounds with Dried-Out Dressings.—Asbeck considers that attempts to disinfect fresh wounds are ordinarily ill advised, for in general it may be said that all such may be regarded as not being seriously infected. It is, therefore, unnecessary and even injurious to attempt to cleanse or disinfect such a wound, for it is impossible to wash out or kill any germs that may be present without at the same time impairing the vitality of the body cells. Naturally, any visible particles of foreign matter must be removed. Disinfection and cleansing of the surrounding parts causes the uper layers of the skin to became softened and washes infectious organisms into the wound. The method which he has employed in over 500 cases of fresh injuries consists in covering the wounded area with a compress of gauze impregnated with iodoform or with some of the newer substitutes for this without any preliminary cleansing operation. Plain gauze and absorbent cotton are placed over this and the dressing is completed with a gauze bandage. These procedures are carried out under aseptic precautions. The injured part is then exposed during a period of from one-half to three-quarters of an hour to the radiating heat emanating from some powerful heating apparatus, in factories or forges, the furnaces being used, and in household practice, the kitchen stove. For small injuries the Bunsen burner may be used. When the dressing is to be changed the removal of the adherent gauze is facilitated by the use of peroxide of hydrogen. The rapidity of healing and the freedom from complications under this treatment are said to be astonishing.

The Technique of Skin Grafting.—Waljaschko says that none of the various substances in common use for dressing cases of skin grafting satisfactorily fulfill the requirements of facilitating healing of the wound and of immobilizing the grafts. He has found the following method very satisfactory: A piece of tulle a little larger than the denuded area is boiled in soda solution and wrung out in sterilized gauze. It is then spread over the grafted surface and its edges are cemented to the surrounding skin by means of collodion. The ordinary dressing of sterile gauze is then applied. In order to prevent maceration of the grafts they are never applied overlapping each other, and they also must not overlie the skin at the wound edges. The gauze outer dressing is changed daily, but the tulle is not removed until the tenth or twelfth day. The tulle dressing is particularly advantageous in maintaining the grafts in position in difficult situations such as the chin, the jugular fossa, between the fingers, etc.

Deutsche medizinische Wochenschrift, October 18, 1906.

Hydrocyanic Acid Poisoning.—Tintemann describes an instance of poisoning by hydrocyanic acid which though followed by serious symptoms did not terminate fatally. A young student of chemistry, at the conclusion of some work with this acid in cleaning the test tubes used, allowed one of them to fall into the sink, and in bending over to pick up the fragments inhaled the hydrocyanic acid fumes. He was instantly seized with extreme dizziness so that he saved himself from falling only by grasping the water faucet. After about a quarter of a minute the dizziness grew less and the patient was able to seek the open air, hoping that this would bring relief. Instead of this, severe cardiac oppression, palpitation, and dyspnea appeared so that he was forced to go to bed. It was not until nine days later that the urine became free from albumin and casts, and the temperature remained elevated for about a week. Other symptoms that were prominent during this period were great unrest, obstinate insomnia, severe headache, and total distaste for food. In discussing the case the author lays special stress on the parenchymatous degeneration of the kidneys that was caused and on the elevation of temperature. The former important complication he says has heretofore not been observed or at least has not been reported.

Further Observations on the Penetrating Action of the Hot Water Alcohol Method of Hand Disinfection.—Ahlfeld endeavors to refute the contentions of his opponents by citing further statistics obtained in his obstetrical clinic at Marburg. Krönig, in referring to the particularly strict asepsis of the Leipsic clinic, notes that after the omission of all operative cases and some others, in 2,094 labors a mortality of 0.1 per cent. was recorded, and that in a series of 980 normal cases there was a puerperal morbidity of 42 per cent. Ahlfeld, during the last year, has had in all 750 deliveries, with no septic deaths and a morbidity of only 29.7 per cent. These figures include all cases, operative deliveries, placenta previa, eclampsia, and cases infected on admission. During this period six courses of instruction have been given to midwives and others, so that in addition to the regular staff 200 to 250 other persons made vaginal examinations of the patients. Ahlfeld has the conviction that if his method of sterilizing the hands is used no appreciable danger attends vaginal examination. He gives the detailed statistics of about 3,500 cases, different groups of which were examined 1-5 times, 6-10 times, and 11-15 times, respectively. The percentage of morbidity in the first group was 30.24 per cent., in the second, 31.85 per cent., and in the third, 28.89 per cent., the standard of morbidity being any elevation of temperature over 38° C.

The Extraction of the Torn-Off After-Coming Head.—Borginis says that although owing to the greater frequency of forceps operations, the practitioner is now, fortunately, seldom in the unpleasant position of being obliged to remove a head from which the body has been torn, this condition must still sometimes be dealt with. In some cases in which the usual methods fail he has found the following procedure very useful. The head is fixed from without through the abdominal wall and is then grasped securely with a volsella or similar type of clamp passed through the cervix. To the end of the instrument projecting from the vagina a cord is attached leading over the foot of the bed and having a weight at its extremity. In the course of a comparatively short time the cervix will be sufficiently dilated, even in cases in which considerable contraction had already taken place, to enable the head to be removed without great difficulty by the application of forceps.

Book Reviews.

On Leprosy and Fish-Eating. A Statement of Facts and Explanations. By Jonathan Hutchinson, F.R.S. and F.R.C.S.; LL.D., etc. London: Archibald Constable and Company, Ltd.; Chicago: W. T. Keener & Co., 1906.

The object of Mr. Hutchinson's book is to present facts, statistics, and documentary and other evidence in support of his conviction that "the fundamental cause of the malady known as true leprosy is the eating of fish in a state of commencing decomposition." The author limits his accusation distinctly to bad fish, adding that the fish supplied in the English market is "obviously quite free from the risk of causing leprosy." He believes that the cause of leprosy is some product of decomposition or some parasite present in decaying fish. The free use of salt in communities where fish is eaten in large quantities is the best preventive of the disease. The author has devoted to the study of leprosy a great deal of his time since 1855. In 1863 he wrote a paper in which he foreshadowed most of his present conclusions, and his research in this line, including travel to various parts of the world, has been unremitting. The work practically represents a life-long study of leprosy from the viewpoint indicated. The book contains a mass of most interesting material, carefully and systematically collated, and pleads the cause most eloquently, though unconvincingly. It is a curious instance of a man sticking to a theory against reason and against facts.

Diet and Dietetics. By A. Gautier. Edited and Translated by A. J. Rice-Oxley, M.A., M.D. Philadelphia: J. B. Lippincott Company; London: Archibald Constable & Company, Ltd., 1906.

In this work the translator has made accessible to English readers the painstaking but by no means original work of Gautier. The book is, in fact, a compilation of the observations and views of the recognized authorities on dietetics up to about two years ago, and in view of the vast importance of recent contributions to the study of food metabolism, it is necessarily already somewhat out of date.

The author has divided his work into three parts. Part I treats of "Principles and Methods." After some general consideration of the mechanism of assimilation, normal proportions of the organic fundamental principles of ordinary alimentation, etc., he arrives at his conclusions as to the food requirements of the average healthy individual by an exhaustive study of the quantities and relative proportions of the food supply to the city of Paris for the decennial period, 1889-1899, and accepts the figures which thus represent what the average inhabitant of Paris *actually consumed* during that period as a criterion. Thus, he estimates that the healthy individual, under ordinary conditions of life, requires 110 grams albuminous food, 68 grams fats, and 425 grams carbohydrates. These quantities and proportions are practically those of the older accepted standards of Voit and others, and perhaps will in the end be found physiologically correct, but one is tempted to criticise the method employed for determination of this standard as unscientific and empirical.

In Part II the author discusses at considerable length the various aliments, and despite unnecessary wordiness and tedious discussion there is much of practical interest to be found in this part of the work.

Part III treats of the regimens applicable to varying conditions of health, age, and disease. The chapters comprising this part of the book will be found of least value to the American dietitian, since the regimens indicated in most diseases are made up largely with respect to "dietetic tastes" very foreign to those inculcated by American education.

The work as a whole, while tedious and somewhat boresome to read, and while failing to bring the subject up to date, nevertheless possesses merit, and must have a certain value for the dietitian of whatever country. Insofar the translator deserves credit for making it accessible to English readers.

Lectures on Midwifery for Midwives. By A. B. Calder, M.B., M.R.C.S., Lecturer on Midwifery to London County Council, to St. Mary's Midwifery Training School, etc. New York: William Wood and Company, 1906.

The author has collected in this book his lectures on obstetrics to classes of midwives, and the subject is therefore relieved from all details not pertinent to the aim expressed in the title. There is no class of women to whom the book could be directly addressed in this country, where no systematic control is exercised over midwives, but its contents are nevertheless instructive and valuable to American nurses who may be called upon to do obstetric work. The text is clear and easily read, but the illustrations leave something to be desired. The chapters on asepsis and sanitation are particularly good, and might be read with profit even by many a general practitioner.

Feuchtfröhliches und Feuchtunfröhliches. By Karl Beck. Berlin; Leonhard Simion Nachfolger, 1906.

Aside from his numerous technical contributions to medical literature, Dr. Beck has favored us with several entertaining publications which might appropriately be included among the belles lettres of medicine. The present work contains four descriptive articles on Heidelberg and its student life, and on Reichenhall and Carlsbad, the well-known European spas. Humor and pathos are intermingled in a way which compel the reader to continue to the end when once he has begun the book. These two qualities have prompted the title of the book, for which, however, no exact English equivalent can be given. It is a matter of regret that Dr. Beck's literary ability does not also find vent in a language that would assure a still wider audience among his American confrères.

The Prophylaxis and Treatment of Internal Diseases. Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati; Physician to the Good Samaritan Hospital; Member of the Association of American Physicians, the American Pediatric Society, etc. New York and London: D. Appleton and Company, 1906.

There is a flavor of originality about this book that is most refreshing. The author tells what he himself has learned from experience, and what he himself does in his practice, taking his readers, as it were, to the bedside, and pointing out the indications for treatment, and how they can best be met. This does not mean, however, that nothing is said of other methods of treatment than the one specially favored by the writer, for Dr. Forchheimer shows himself possessed of a catholic mind which is willing to admit that the experience of others may count for something, and he accordingly mentions the modes of treatment, and the remedies which other practitioners have found useful, and leaves his readers free to choose them if they see fit. The book is not a treatise on the practice of medicine, but is, as its title indicates, devoted solely to prophylaxis and treatment. The reader is presumed to have made the diagnosis and to be acquainted with the pathology, and also with the etiology, though the latter is referred to so far as is necessary to explain the rationale of the prophylactic measures advocated. The work is well written in an easy style, concise, yet not unduly condensed, and thoroughly practical in every line.

While thus expressing our admiration for this book, and recommending it as a work of reference which should be on the shelf of every progressive physician, we cannot agree with all its teachings. This is merely saying that no man's work is perfect or above criticism. It is unwise, we think, to teach that a syphilitic is no longer a danger to his family in the tertiary period of the disease, for not a few syphilographers have expressed the opinion that tertiary lesions are sometimes communicable, and if the spirochete exists in these lesions, as some claim, the contagiousness of the disease in this stage must be acknowledged. Again, in the prophylaxis of dengue nothing is said of the agency of mosquitos in the transmission of the disease; yet writers on tropical medicine are coming to look upon this vicious insect as the possible, if not the probable, host of the extra-human form of the assumed protozoan cause. This is as yet problematical, but it is sufficiently plausible to call for mention in connection with the prophylaxis of this painful affection. A more serious omission is that in the section on the treatment of headache. The author deals with nervous headache, gastrointestinal headache, headaches due to circulatory disturbances, headaches in school children, headaches in adolescents, rheumatic headaches, and headaches for which no cause is discovered—and in all of them not a word about eyestrain! Whatever views may be held as to the teachings of extremists regarding the influence of eyestrain in the production of various reflexes—nervous, gastrointestinal, and even scoliotic—it is as certain that uncorrected ocular defects may cause headache as that vaccination will protect from smallpox, and it is most regrettable that the author of this work should ignore such a simple and absolute cure of many headaches, especially those afflicting school children and adolescents, as the correction of astigmatism and other visual defects by glasses. Fortunately, this defect in an otherwise admirable book will not have any serious consequences, since the laity, as well as the profession, is so aware of this factor in the causation of chronic headache that the first person consulted in such cases is usually the oculist. With this exception, the few other deficiencies which we have detected in a very careful examination of the book are of minor importance, and count but little in comparison with the sane and sound admonitions in every page of this admirable therapeutic treatise. To the recent graduate, especially, we commend the book as a safe guide in the treatment of disease.

Society Reports.

AMERICAN ELECTROTHERAPEUTIC ASSOCIATION.

Sixteenth Annual Meeting, Held at Philadelphia, September 18, 19 and 20, 1906.

DR. WILLIAM BENHAM SNOW OF NEW YORK, PRESIDENT, IN THE CHAIR.

PRAYER was offered by Rev. Dean Groton and addresses of welcome were made by Hon. John Weaver, Mayor of the city; Dr. Charles K. Mills, President of the Philadelphia County Medical Society, and Dr. John V. Shoemaker of the Medico-Chirurgical College.

President's Address.—Dr. WILLIAM BENHAM SNOW of New York delivered this address, taking as his theme: "The Past, Present, and Future of Physical Therapeutics." From the earliest times, he said, experimental medicine had been the bane of both physician and patient, and in practice to-day views and methods were diverse. Physical agents in the hands of those trained to employ them would find an important field in future therapeutics because their indications and uses were rational. In their use as much depended upon the skill of the operator as in the case of the surgeon who operates with the knife. Those who rendered the most conscientious service in therapeutics were those who did not confine themselves to one line of treatment—drugs, surgery, electrotherapy, phototherapy, or any other means or methods—but made the best and judicious use of all. The call was for a broad gauge, honest, investigating spirit, and with a willingness to adopt all that was good and a determination to weed out the dangerous and spurious in therapeutics. Unfortunately the number in the profession who had made a conscientious study of electricity, radiant energy, heat and cold, exercise, mechanical vibration, and other physical measures, and had a fair conception of their value in therapeutics, were relatively small. Several general indications were to be observed in therapeutics: (1) prevention, (2) removal of infection and its effects—toxemia and congestion, (3) the removal of the effects of trauma—local stasis, and the products of inflammation, and (4) the establishment of functional activities. Noninfected inflammatory conditions arising from trauma or other irritation called for restoration of circulation and activity where stasis existed, for it was the inertia in the tissues thus established that rendered conditions chronic. For its removal mechanical measures were imperative. Static electricity, radiant heat and light, and the judicious employment of mechanical vibration met in various ways conditions of simple induration. For the relief of infected inflammatory processes, the removal of stasis was dangerous, except during the first days, when the total of infection was not so great that the leucocytes could not destroy it. The general principles involved in the treatment of infectious processes were drainage, increased leucocytosis, by increasing local vascularity, and the employment of dry hot air, radiant light and heat, the *x*-ray and the high frequency currents which destroy the germs *in situ*. The physical agents were invaluable in inducing the restoration of local and general metabolism, in removing contractures, regulating the vascular conditions, and reestablishing functional activities, thereby promoting necessary tissue building and elimination. The time had come and the rights of humanity demanded at the hands of the great profession to whose care their lives were intrusted, to eliminate useless measures, and to adopt and judiciously employ or prescribe only the best as indicated.

When Is Electrotherapy Indicated?—Dr. A. C. GEYSER of New York City endeavored to answer this question. Ignoring all fine technicalities, he explained what was meant by the term electrotherapy. From certain groups of ailments a few were selected and the rationale explained. It was not to be inferred that electrotherapy was "good for what ails one," or that it should be used to the exclusion of any other therapeutic measure. He emphasized the fact that of necessity the successful physician must first remove the cause; secondly, treat the patient and not the disease; and thirdly, before selecting any therapeutic measure, think and use common sense.

Dr. FRANCIS B. BISHOP of Washington, D. C., did not agree with Dr. Geyser that the wave current was a tonic, but that it was a stimulant. The question was raised whether or not cases of chorea required stimulation, since chorea was not always due to congestion of the cord, but to nutritive changes in the cord. In the treatment of nervous cases it should be remembered that they did not all respond to electrical treatment in the same way, and the current should therefore be suited to the condition of the patient. Neurasthenia, for example, the result of some infectious disease, would require different treatment than when produced by other conditions.

Dr. G. BETTON MASSEY, in answer to the reference to cataphoresis in connection with the *x*-ray, asserted that the zinc mercury cataphoresis would cure a case of very extended tuberculous infiltration of the glands of the neck.

A Plea for Conservatism in Electrotherapeutics with Remarks on Dosage.—Dr. A. D. ROCKWELL of New York City, in presenting this paper, called attention to the lack of judicial fairness revealed by a survey of the current literature of electrotherapeutics. As a result of this, the enthusiast became an altogether illogical pessimist and denied the efficacy of the agent that he had crudely tested, and upon the other hand there was an overconfidence characterizing every public utterance or written report. The one encouraging feature in the development of electrotherapy was said to be the fact that a fuller knowledge of physical methods led to a greater exercise of rational judgment in testing them. A good working knowledge of physics and a skilled technique were essentials mentioned in the application of electricity. The first broad general principle to be considered in the therapeutics of electricity was its influence over nutrition, and these nutritive effects, which were secondary, were regarded as far more valuable than the primary effects, whether they were stimulating or sedative. It was to be remembered that electricity might act as a stimulant or as an ugly irritant; or, in many an hyperesthetic condition of the nervous system, as a prompt and unequaled sedative. The necessity of familiarity with Ohm's law was also emphasized. Reverting to the fundamental idea of the nutritional effects of electricity, Dr. Rockwell emphasized the fact that its greatest value lay in its general application rather than in the local, thereby affecting either directly or reflexly the whole central and peripheral nervous system, including the entire muscular and circulatory system under their control. While fully recognizing the value of the newer modalities he accorded to general faradization an individual merit equal to any other of the general methods. An additional argument for its study and general use was its slight expense. The question of dosage was considered of special importance in its relation to the galvanic current, because of its chemical or electrolytic power and its profound influence upon the central nervous system, and because it was the only manifestation of electricity that was physiologically exact and whose slightest variation could be measured with absolute accuracy. In the use of the galvanic current for deep-seated neuritis, for the pain due to parenchymatous degeneration and internal cancer, and especially for exophthalmic goiter, massive doses were said to be necessary. To overcome the objections found in the use of sculptor's clay as an elec-

durance, but without injury to the skin. To overcome the objections found in the use of sculptor's clay as an electrode Dr. Rockwell had devised an electrode consisting of rimmed discs of hard rubber of any diameter desired, the bottom being covered with block tin, practically unoxidizable. Filled to the brim with the clay properly prepared it was ready for use.

Locomotor Ataxia.—Dr. Francis B. Bishop of Washington, D. C., described his technique in treating this disease. In the early second stage he had been able to give patients marked relief. In addition to treatment received at his office, they were instructed to carry out a series of exercises at home laid down by Fränkel.

Dr. F. H. Morse of Boston had seen cases of well-marked locomotor ataxia greatly improved by the use of the negative continuous current to the spine and by the general methods of improvement of nutrition.

Dr. J. D. Gibson of Denver thought the diagnosis of locomotor ataxia ought to be made before there was disturbance of locomotion. He cited a case seen by himself some time before which had been diagnosed by many physicians to be one of neurasthenia. Dr. Gibson had concurred in the diagnosis, but stated to the patient his fear that he would have locomotor ataxia. The subsequent history, although the patient passed from under Dr. Gibson's care, pointed to a confirmation of this diagnosis.

The paper was further discussed by Dr. H. F. Pitcher of Haverhill, and the discussion was closed by Dr. Bishop.

The Uses of Static Electricity in the Treatment of Gastric Disorders.—Dr. George D. Bond of Hillsboro, Texas, said that he had been able to get satisfactory results in the treatment of dyspeptic conditions from the use of a current which might be called a Leyden jar Morton wave current. The connections were the same as in the Morton wave, except that the wire connecting the patient with the machine was attached to the outside of a large Leyden jar, the patient being seated upon the insulated platform. The general electrification, though not so evident as in the current taken from the prime conductor, had an increase of volume and potential. There was contraction and relaxation of the stomach with each charge and discharge and in both its entrance and exit life and energy seemed to be given to this organ. In the past three years Dr. Bond had treated thirty-five cases of stomach disorder by static electricity with gratifying results. Several cases were cited.

Dr. Fred H. Morse thought the general practitioner was confronted with no disease conditions so frequently as those conditions complicated with dilatation of the stomach. He believed that in some of the various modalities of electricity there was a means of successfully treating many of the cases of chronic gastritis whether or not they were connected with dilatation.

Dr. Sinclair Tousey of New York City described his treatment of gastrointestinal disease.

Dr. Henry Finkelpearl of Pittsburg had used both the high frequency and the Morton wave currents and obtained better results from the Morton wave current than from the glass vacuum electrode.

Dr. J. H. Mudgett of Philadelphia called attention to the fact that the Morton wave current had not only a massage effect, but had an effect upon the organs which secreted the necessary juices for digestion.

Electricity in Joint Affections.—Dr. Henry W. Frauenthal of New York City restricted the scope of his paper to the use of the electrical armament in the diagnosis and therapy of affections in and about the joints. His own clinical experience was presented, with the work of other observers. In his results the *x*-ray had been of the greatest value in the determination of fractures extending into the joint, in subluxations, in malformations, in the presence of hypertrophic and atrophic bones at the point of articulation, in the various joint inflammations, and in conditions of the synovial sac and tendons of the joints. It was directed that an *x*-ray photograph of a joint should always be taken in two directions, the one at right angles to the other, and the distance of the tube specified. In tuberculous arthritis it was claimed that by the *x*-ray the points of tuberculous disintegration necrosis could be detected and the advisability of operative interference determined. A citation was given from the paper of Dr. John B. Murphy (*Journal of Advanced Therapeutics*, 1905), showing a great forward stride in the use of the *x*-ray in the treatment of tuberculous joints. In three cases of tuberculosis of the spine Dr. Murphy had had the most gratifying results, and the paraplegia often accompanying the condition had been manifestly improved. In the past five years Dr. Frauenthal had divided his cases of tuberculous arthritis of the spine, hip, knee, etc., into two divisions, each of equal severity, with the patients of the same relative natural resistance. In those treated by the *x*-ray, high frequency, and constant currents the time of treatment was reduced one-half, and pain was relieved almost immediately, while Nature's functions were stimulated into more rapid resolution. To these measures he had added in the past year the therapeutic measures of sunlight, diet, passive congestion (Biers), bodily exercise, mechanical protection of the joint, and psychical suggestion. In the consideration of gout and rheumatism Dr. Frauenthal described the special technique of the electrical treatment of the conditions. The increase of urea and of uric and phosphoric acids found in the urine after a few days' application of the high frequency currents was found to be very marked. The author did not advocate the use of electricity to the exclusion of medical means, but believed it to be a valuable additional therapeutic measure. For the prompt relief of pain he considered it to have no rival.

The Treatment of Lumbago and Other Painful Conditions of the Muscles of the Back.—Dr. Thomas W. Brockbank of Philadelphia regarded this condition more in the light of a local manifestation of a general systemic toxemia than as a special and distinct disease with a pathology peculiar to itself. The chronic and acute types were described with the mode of onset. In treatment the spinous processes were carefully observed as to perfect alignment. In the treatment of lumbago the physicotherapist was said to have modalities ranging from the hot domestic sad-iron to the static spark or the high power incandescent lamp. For the relief of pain the vibrator with ball attachment was used with at first light pressure and short strokes, followed by deeper pressure and longer strokes as tolerance was acquired. A few long indirect sparks were then given on the static platform. With nervous patients the Morton wave current was used, with a long electrode applied to the back. The importance of elimination through the bowels, kidneys, and skin was emphasized, and a few cases were reported in which the methods outlined had given satisfactory results.

The Present Status of Electrotherapy.—Dr. H. H. Roberts of Lexington, Ky., said that with all the advancements of theories, methods, and systems nothing had been received with more confidence and interest than electricity as a therapeutic agent. Although it had passed through periods of prominence and of depression, there had come enlightenment and confidence in electrotherapy. Because of the lack of uniformity in the manufacture of the various electrical apparatus comparisons in the work of operators was said to be difficult. The fear was expressed that the impetus given electrotherapy had caused the occupation of the electrical field by men totally ignorant of the science. Therapeutic results rather than psychological effects were desired by the honest and conservative

workers, and such workers should have a broad and comprehensive knowledge of electrophysics and electrophysiology. Since electrotherapy was a distinct science, the man who administered it should be as familiar with its effects and results as the man who administered medicine. The most essential requirement in the administration of electricity was said to be an adequate knowledge of physical diagnosis. Appreciation was expressed of the increasing realization in colleges of the importance of thorough training in electrotherapeutics.

Tuberculosis Antitoxin.—Dr. J. D. Gibson of Denver, in the treatment of tuberculosis, claimed that in suitable cases there was produced by the *x*-ray an autospecific or tuberculin toxemia arousing a reaction in the host of the liberated toxins which might be of great benefit to the patient. The cases best adapted to the *x*-ray were said to be those in which the germs were in sufficient quantity in the pleura, lungs, glands, or elsewhere to cause by their destruction the toxin desired. The value as adjuncts to the *x*-ray of rest, diet, sunshine, fresh air, change of climate, and medical agents was appreciated by the author. He pointed out the danger of exercise in high altitudes, which many thought was necessary in obtaining fresh air. Skiagraphic prints illustrative of the points claimed in the paper were shown. A number of cases were reported, in nearly all of which climatic and medicinal treatment was unsuccessful until combined with the *x*-ray.

Dr. Martin L. Barshinger of York, Pa., spoke of his highly satisfactory results with the high frequency current in pulmonary tuberculosis and exhibited two patients. The good results were attributed to improved metabolism and pulmonary circulation.

Dr. Frederic DeKraft of New York had controlled the temperature in advanced tuberculosis by the *x*-ray, using a tube with considerable penetration at some distance from the body.

Dr. Gibson in closing emphasized the want of necessity for the *x*-ray in incipient cases of tuberculosis. The fact of the greatest benefit being observed in the advanced cases was in marked contrast to the claims for other agents in the treatment of tuberculosis.

Rhythm the Dominant Factor in Therapeutics and in the Organic World.—Dr. Samuel S. Wallian of New York City in this paper said that the word "rhythmotherapy" was legitimately derived and comprehensively descriptive of a number of modern therapeutic expedients and of broad underlying principles which had hitherto been imperfectly and often inconsistently designated by other titles. Rhythm, he said, was the underlying law of the universe and life itself an incessant succession of rhythmic reiteration, while health was the uninterrupted play of the organ without jar or undue friction. Were rhythm, the underlying principle dominating every manifestation of Nature, eliminated, the entire curriculum of science would have to be reconstructed. Vibration was defined as the voice of Nature, without which she would be a helpless mass of immaterial matter, with no attributes of either cohesion or persistency. Physiology was said to be functional harmony; pathology, functional discord. Essentially then, in the attempt to change pathological into physiological action, there was the effort to establish lost rhythm in an arhythmic organism. That overenthusiasts had failed with the *x*-ray, with high frequency currents, with static modalities, and with mechanical vibratory manipulations, was not to be accepted as competent evidence against the intelligent employment of any of these rational measures. The enterprising practitioner, it was suggested, would study the nature, scope, and possibilities of such potent resources of an art which was yet in the swaddling-clothes stage of its ultimate growth.

The Measurement of the Intensity of the Roentgen Ray, an Element of Safety in Radiography and Uniformity in Therapeutics.—Dr. Sinclair Tousey of New York City said that the quality of the *x*-ray could be determined by measuring the penetrating quality of the ray by the Walter skiameter, depending upon the thickness of the platinum which its ray would penetrate. In the author's radiometer 1 to 10 thicknesses of tinfoil weighing one ounce to 100 square inches were used. Both of these were said to be dependent not only upon the quality, but also upon the intensity of the ray and the acuteness of vision of the observer. Other qualitative measurements were described. The author's method of quantitative measurement measured the intensity of the radiance by finding at what distance one could stand holding a fluoroscope to his eyes and see any trace of fluorescence when the current was turned on. If the radiance would carry six yards, the intensity was said to be six Tousey. If one could stand at a distance of twelve yards, the intensity was called twelve Tousey, and in that case the duration of application should be only one-quarter as long. An intensity of six Tousey with a penetration of three to eight Benoit would permit an extreme duration of application (at one time or in a series occupying a month) would be thirty-four minutes at a distance of six inches. The time might be increased if the intensity were less or if the distance from the tube to the patient were increased.

Dr. William T. Bishop thought Dr. Tousey had brought the matter of measurement to an approximately practical demonstration.

Dr. Tousey in closing called attention to the necessity of keeping the screen covered with a sheet of glass over the fluorescent screen.

Electricity as a Factor in the Treatment of Certain Chronic Diseases of the Stomach.—Dr. Otto Juettner of Cincinnati in this paper claimed that the practice of physiotherapeutic methods in the treatment of chronic ailments had established the superlative importance of the alimentary canal, more especially the stomach, in connection with the etiology and treatment. He believed the stomach occupied a much more commanding causative position than the text-books would indicate. He called attention to the anatomical position of the stomach and its share in the metabolic machinery as causative factors in disorders. Passing over the therapeutic indications, he limited himself to a consideration of certain electrical modalities in the management of these cases. A primary induced current of moderate intensity he regarded as useful as a muscular tonic to the relaxed and weakened walls of the stomach. With the intelligent cooperation of the patient direct application might be made to the gastric mucosa. The technique of this application was described. In many bad cases of gastric dilatation the results had been surprisingly good. It was understood that the hydroelectric applications were not to be used in cases of cancer, ulcer, or acute inflammatory conditions of the stomach. The static modalities appeared to be of little service in the local treatment of the disorders, unless there were used currents of relatively high frequency, in the form of either the static-induced or the static-wave current. The author emphasized the fact that in the treatment of stomach disorders it must be remembered that electricity alone was insufficient, even in the local management of the affected organ, and that the general treatment of the patient was of the utmost importance. Electricity should be combined with epigastric massage. The importance of diet was considered, especially with reference to the weight and bulk of the food. He believed degenerative changes in the nervous system to be the result of primary etiological conditions that were artificial products inasmuch as they could be removed in their early stages by strict attention to the functions of the organs of nutrition. He could not believe that nature ever intended the existence of so-called idiopathic paralyses. In the treatment of the secondary effects of gastric affections the author had found the gen-

eral application of high frequency currents to have a most salutary effect on metabolism and indirectly on the assimilative power of the stomach. He gave these applications once daily for ten or fifteen minutes. As an eliminative agent the incandescent electric light bath was given two or three times a week. The importance of attention to the bowel function was also emphasized.

Methods of Procedure in the Use of High Frequency Currents.—Dr. Frederic DeKraft of New York City said that the modern static machine seemed to be particularly well adapted as a means of charging the Leyden jars of a resonator on account of its extremely high potential discharge. The currents of high frequency and high potential which could be obtained from such machine and resonator were enumerated as the D'Arsonval, Tesla, and Oudin currents. The three methods by which the D'Arsonval current could be utilized were given and the technique explained. The class of cases yielding the best results in the author's hands with the O'Arsonval current had been conditions due to faulty metabolism, improper living, excesses in food and drink, and insufficient exercise. In five cases of obesity a reduction of from eight to twenty-five pounds had been accomplished within two months. Cases of gonorrheal rheumatism were much benefited. Cases of pulmonary affections responded well. The Tesla current had not been largely used by the writer because of its lack of adaptability for the bipolar methods. The Oudin current was said to be possessed of penetrating properties to a high degree. The manner in which this could be demonstrated was described. The several methods in which the Oudin current could be used were given in detail. It was suggested that much of the therapeutic value of high frequency currents was due to the actinic property of its spark and spray discharge and to its power to produce chemical changes in the tissues, as evidenced by the very great increase of the solid constituents of the urine, by the increase of the excretion of CO_2, as well as the positive increase in heat production and increased activity of the sweat glands. The remedial effects of the high frequency currents were considered to be due, in infectious diseases, largely to their power to check the formation of toxins, improve nutrition, and (when used in not too great amperage) to strengthen the natural defences of the body.

Dr. Edward C. Titus of New York City thought the close attention to detail shown in the paper of Dr. DeKraft was worthy of great commendation and his treatment of the joint cases was regarded in the light of a revelation.

Dr. Barshinger had proved conclusively to his own mind, by experimentation, that the current of the high frequency modality did penetrate the tissues.

Dr. Titus called attention to the fact that it was not the high frequency currents, as commonly accepted, that produced the penetrating quality of the current, but currents of low frequency and high potential.

Dr. Donaldson personally thanked the author for enlightening him upon the matter of technique. In the use of the Tesla coil he had seen special benefit in cases of mild pleuritic adhesions with slight temperature and some cough.

Dr. DeKraft in closing stated that the question of penetration was largely one of method. The methods were explained whereby the effect was largely surface, and in which the current passed to the vital spot.

A Clinical Demonstration of Radiotherapeutic Results in Cancer.—Dr. William S. Newcomet exhibited several cases. One case of particular interest was a patient with large round-cell sarcoma of the neck. Two years previous the first operation had been done, when the growth promptly returned. The *x*-ray was used with benefit, but a second operation was necessary. In spite of the *x*-ray the growth recurred and grew until the methods of deep treatment were instituted. The patient has been receiving an average of one hour *x*-ray treatment almost very day and the tumor had been decreasing. Dr. Newcomet described his devised method of treating four patients at one time.

Electrochemical Sterilization as Applied to Malignant Diseases of the Orbital and Nasal Regions.—Dr. G. Oram Ring of Philadelphia directed attention to the value of electrochemical sterilization as one of the very valuable adjuncts in the treatment and inhibition of certain types of malignant disease of the nasal and orbital regions. He believed that the bloodless devitalization of a malignant neoplasm, with the possibility of carrying the sterilization with precision beyond the growth into a region where some latent cells might be present and finally into healthy tissue, was of immense importance. In the treatment of orbital sarcoma, he reminded his hearers that if the modern viewpoint were correct, that every primary malignant growth was at first purely local and further that recurrence was highly probable, then with proper dosage and exact technique a method that made possible the destruction without subsequent stimulation was entitled to an important place in methods of treatment. A case was cited indicating the possibilities for good in electrochemical sterilization of malignant nasal disease after failure of *x*-ray therapy. After prolonged *x*-ray treatment without benefit, cataphoric sterilization under ether was performed. Five minor treatments removed all trace of the disease.

Cataphoric Treatment of Cancer of the Face.—Dr. Samuel McClary, 3d, of Philadelphia, in presenting this paper, stated that when there was no lymphatic involvement cancer of the face was probably best treated by cataphoresis, because (1) only diseased tissue and a small amount of healthy tissue was destroyed; (2) the resulting scar was less conspicuous than by any other method, except possibly *x*-ray treatment; (3) the danger of implantation was eliminated. The technique of the operation was fully described with the after-treatment. In some cases in which the current was not well borne, the bipolar method was useful, in that it did not embarrass the heart or respiration. In connection with his paper Dr. McClary exhibited several patients showing the effects of the cataphoric treatment.

An informal symposium on *x*-ray burns was held, participated in by Drs. Sinclair Tousey, A. C. Geyser, Brockbank, Brinkmann, M. K. Kassabian, and others.

A Résumê of the Radiometric Dosage of the Roentgen Ray Therapy.—Dr. M. K. Kassabian, in presenting this paper, classified and described the various methods in vogue, emphasizing the advantages and disadvantages of each. The twenty-one methods were classified under the following five headings: (1) The measurement of the electric current; (2) the penetration method; (3) the physicochemical method; (4) the ionization method; (5) the photometric method. After elaborating upon each of the above Dr. Kassabian commented on the fact that at present there existed no practical standard or unit of dosage. He urged that the selection of a standard and an exact unit was fraught with much difficulty; although a committee on meters was actively engaged in the work. Every individual, he said, was an equation unto himself, and no one could deduce the amount of biological and physiological action of the rays by measurement of their chemical and physical properties. The unit, to be ideal, must be accurate, precise, and practical.

Dr. A. C. Geyser of New York spoke of the great technical value of Dr. Kassabian's paper. He felt that Dr. Kassabian was absolutely correct in his statements concerning the personal equation.

Dr. Morris W. Brinkmann thought he had never heard a paper with which he so heartily agreed nor one which exhibited such an earnest search for truth.

Experiences with Electric Light in the Treatment of

Various Diseases.—Dr. H. Finkelpearl of Pittsburg, in this paper, stated that elimination was the most ancient method of freeing the body of morbid matter, and that of all the physical agents for this purpose electric light was the remedy par excellence. He reported a few cases treated by light, among which were conditions of albuminuria, jaundice, an affection of the skin (diagnosed by two dermatologists as psoriasis, and as lichen ruber), syphilis, scabies, and neurasthenia. The good results were general in all the cases. The following conclusions were drawn: (1) Radiant heat is more penetrating and consequently drains the deeper tissues much better than any other form of heat; (2) patients who cannot stand a high temperature will perspire at a much lower temperature when electric light is the source of heat; (3) patients will tolerate a higher degree of a longer exposure to radiant heat than to any other form; (4) that it may be given with impunity to people having a weak heart, if the patient is watched; (5) as the head does not have to be included, various substances may be vaporized within, and caused to be absorbed by the open pores, avoiding the liability of irritating the respiratory organs. The paper brought out a very extended discussion.

Concentrated White Light.—Dr. F. Barrett of Westbrooke, Me., presented this paper.

High Frequency Currents in Ophthalmic Practice.—Dr. L. Webster Fox said that his work had been of an experimental character. The current used was obtained by charging the direct currents of relatively low tension into alternating currents of exceedingly great rapidity and high tension through a large Ruhmkorff inductor, Leyden jars, and Oudin resonator. The applications were made directly to the eyelids by a Wappler vacuum spiral tube and directly to the eyeball by specially devised vacuum eye electrodes, single and double. The conditions treated included blepharitis marginalis, granular lids, ulcers of the cornea, iritis, ophthalmoplegia interna, and many others. From his experience with amblyopia he believed that the high frequency current offered a curative measure much more simple and radical than the fusion method with the amblyoscope. His attention had been first called to the treatment in this condition by Dr. David H. Coover of Denver. Dr. Fox, in closing, quoted from Guilleminot, who stated in regard to electricity in general: "If the progress of science finally enables us to master this force, which is the very essence of life, and to subjugate it, as steam has been subjugated to the service of mankind, we shall have ready to our hands the most potent curative agent imagined to modify the volition and ameliorate the condition of living beings."

Dr. S. Lewis Ziegler expressed his conviction of the advantage of the constant current. He had used the high frequency current, but not with the greatest success.

Dr. William W. Eaton of Danvers spoke of the value of the constant current in his hands in conjunctivitis.

Dr. J. D. Gibson of Denver was glad that the influence of Dr. Coover's work had spread so far from home and spoke of the enthusiasm he had aroused in Denver by his work with the high frequency current.

Fluid Extract of Sheep's Thyroid an Aid in the Treatment of Cancer.—Dr. Charles Am Ende of New York had used thyroid extract in the treatment of a number of cases microscopically ascertained to be malignant, and, with the exception of one, all inoperable. He asserted that the extract could be given in large doses for a long time because it was free of the substance of the crude gland productive of congestive and cardiac disturbances. Among its effects were mentioned: Elimination of cancer toxins, probably as an antibody; gain in physical and mental strength, prolongation of life, and alleviation of pain.

Officers.—The following officers were elected: *President,* Dr. Morris Weil Brinkmann, New York; *First Vice-President,* Dr. J. D. Gibson, Denver; *Second Vice-President,* Dr. M. K. Kassabian, Philadelphia; *Secretary,* Dr. A. C. Geyser, New York; *Treasurer,* Dr. Richard Joseph Nunn, Savannah; *Executive Council,* Drs. Wm. Benham Snow, Fred H. Morse, and Francis B. Bishop.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held October 11, 1906.

Dr. Matthias Nicoll, Jr., in the Chair.

Demonstration of a New Gas-Ether Inhaler.—Dr. Victor C. Pedersen made this demonstration.

Report of a Case of Paralysis of the Abducens Nerve Following Influenza.—Dr. Anna S. Wilner presented this paper, which was read by Dr. Barry. The patient was nine years old when the ordinary signs and symptoms of influenza presented. A few days afterward pain in the ear was complained of and the ear discharged. Later there were sharp pains on the side of the head and an intermittent curve to the temperature which ranged from 99° to 102°. The two possible causes for the fever appeared to be defective drainage and malaria, the diagnosis leaning toward malaria, although the spleen was not enlarged. Quinine was given, without appreciable effect. Later the pain on the side of the head appeared now and then. Dr. McKernon was consulted, and it was thought wise to insure better drainage by enlarging the opening. Later the child appeared heavy and drowsy and unwilling, taking no interest in anything. The child was somewhat dizzy and had a staggering gait, and another consultant diagnosed cerebellar abscess and advised operation. He based his diagnosis on the suppuration in the ear, the headaches, stupor, and dizziness. With the eye on the affected side blindfolded the dizziness disappeared. The eye muscles were affected. It was recorded that the muscles most affected in influenza were the internal recti. In this patient there was a paralysis of the abducens nerve and a resulting internal or convergent squint. These nerves were sometimes infected by organisms or influenzal toxins, just as they were in diphtheria. The nerve disturbances in diphtheria were more constant; in influenza they were more erratic. Literature had not informed us whether the lesions were in the nuclei or in the axons leading therefrom. The abducens was not the only nerve affected in this case; there was also a slow and irregular pulse and a sleeplessness lasting twelve hours, probably due to the direct action of the microbes, and accompanied by high fever, an occurrence appearing as a rule earlier in the disease.

Dr. Alfred F. Hess believed that the symptoms presented by the child could have been caused by other organisms, while the heart symptoms could have been caused either by the pneumococcus or the diphtheria germ. He failed to see why the writer of the paper believed the condition to be due to influenza.

Report of a Case of Splenectomy for Splenomegaly in a Child Eight Years Old.—Dr. David Bovaird, Jr., reported this case. The child was born in England and lived there till seven weeks before her admission to the Presbyterian Hospital, May 8. There was no suggestion of specific disease in the family, and the other four children were sound. There was no history of rickets. She was never robust and was easily fatigued. When eighteen months old she had measles, which was followed by pneumonia. In August, 1905, she began to have a persistent cough, with occasional hemoptysis. Shortly afterward she was in the hospital with scarlet fever. There was no history of rheumatism, typhoid, or malaria. Since having scarlet fever she had frequent attacks of epistaxis and a persistent cough, and complained at times of abdominal pain, vague both in location and character, and which was at times fre-

quent and severe. Bleeding from the gums sometimes followed the coughing. On admission to the hospital the notable features were the easily bleeding gums, a liver which extended from the fourth rib in the midclavicular line to one inch below the free border of the ribs, a spleen which extended from the seventh space in the axillary line to the level of the anterior superior spine of the ilium below and on the right to a point two inches to the right of the umbilicus. There were also noted a few râles at both bases behind, and a slight degree of jaundice. During the seven weeks under observation the cough subsided and the general condition improved. There was a moderate degree of anemia, no leucocytosis, and a moderate increase in the lymphocytes in the differential count. The urine was normal. The condition was regarded as splenic anemia, belonging in the class of Banti's disease. After careful consideration the removal of the spleen was advised and performed June 28 by Dr. McCosh. A good recovery followed. The only notable change in the blood following the operation was the development of a leucocytosis of from 20,000 to 25,000 There was no marked change in the differential count. The spleen weighed almost two pounds and appeared normal, except for the presence of a broad, yellowish plaque just beneath the capsule on the external surface, and which proved to be a deposit of fat. The microscopical examination showed only a simple hyperplasia of the organ.

Dr. Henry Ewing Hale, Jr., said that he had seen a girl of seven or eight years with liver and spleen in practically the same condition as the one reported by Dr. Bovaird. The *x*-ray treatment was given without making any impression upon the size of the spleen. After each application of the *x*-ray, there was an increased leucocytic count. Operation was advised, but the patient went to another hospital and was lost sight of.

Report of a Case of Septic Endocarditis.—Dr. W. C. Gardner made this report. He said that septic endocarditis was, in the vast majority of cases, a secondary disease and occurred with pneumonia, rheumatism, gonorrhea, puerperal sepsis, scarlatina, smallpox, erysipelas, typhoid fever, measles, and probably other diseases. The morbid anatomy was that of a simple endocarditis, with the septic feature added. Septic emboli were common, occurring most frequently in the spleen and kidneys. The prognosis was so grave that it was said a recovery meant a mistaken diagnosis. Recoveries, however, had been reported. Certain reports showed that septic endocarditis should not be considered as hopeless, and a consideration of the variations that might occur in some of the chief factors of the disease led one to believe that there must be considerable variations in the results. The diagnosis was often extremely difficult, and at times impossible. Dr. Gardner then reported a case he had under his care, in which the antistreptococcus serum and unguentum Crède had been used, and recovery followed. He called attention to certain flaws in his case. The septicemia was not proven, as there was no culture made from the blood; the endocarditis was not proven, as the murmurs did not persist; and the septic endocarditis remained unproven because the patient did not die. This was the negative or theoretical side of the case. On the positive and practical side there was presented a desperately sick child with a septic temperature, a recently developed cardiac murmur, and a markedly tender spleen.

Dr. Sidney Valentine Haas said that some years ago he saw an adult suffering from general septicemia, following wound infection, treated by antistreptococcus serum, with a prompt recovery. The patient was a woman, eighteen years old, who was operated on; following this she developed a pericarditis, endocarditis, meningitis, and pleuritis, and she was taken to the operating room to have an amputation done at the hip. The consulting surgeon advised sending her back to the ward, as he thought her to be in a dying state. The house surgeon suggested trying antistreptococcus serum; the attending surgeon was willing to try anything, and therefore the antistreptococcus serum was used. At the end of four days she was practically well, and in two weeks' time she left the hospital. Although she had all the classical signs of an acute septicemia, which usually ended fatally, she recovered under the use of the antistreptococcus serum.

Dr. L. E. La Fetra said that in all septic processes in the body one should realize that, varying with the virulence of the germ and the resistance of the patient, one got different types of the disease. Blood cultures were absolutely necessary, not alone for diagnostic purposes, but to guide one in the treatment of the case. Unless one could identify the particular type of streptococcus, and unless one could identify the various strains, and get a particular antistreptococcus serum for the strain, one must use a mixed antistreptococcus serum.

Dr. David Bovaird, Jr., thought the diagnosis was a reasonable one and the recovery of the patient did not nullify the diagnosis. In infective diseases one met with all grades of manifestations. The more one studied endocarditis the more clear it became that one could not safely draw a sharp line between simple endocarditis with fever and malignant endocarditis. He doubted whether the antistreptococcus serum had anything to do with the recovery of the patient; the more one used such a serum the more one lost confidence in it, and for the reason that one could not get a serum of a particular strain of streptococcus.

Dr. George D. Scott said that the investigations carried on at the Harvard Laboratory had shown that unguentum Crède and other silver preparations were mildly antibacterial in action.

Dr. W. C. Gardner said that he was not an advocate of the antistreptococcus serum in these cases, but reports had been received that appeared so favorable that he had decided to try it, not knowing what would do good. It really appeared that there was something inherent in particular sera which acted with brilliant results in some cases, but without any effect whatever in others.

SECTION ON MEDICINE

Stated Meeting, Held October 16, 1906.

Dr. Warren Coleman in the Chair.

Opsonic Index in Typhoid Fever.—Dr. Warren Coleman showed a chart from a case of typhoid fever in which the opsonic index was read every day in Bellevue Hospital. So far as the published accounts went, he said there were not many observations made upon this in typhoid fever. Wright had done much work along this line, but little had been published. The readings were made by students at Cornell University, under the supervision of Dr. Hastings, and might be considered as being accurate. The readings were made during convalescence and were continued during the relapse and showed very interesting variations.

A Note on the Treatment of Psudomembranous Colitis.—Dr. H. C. Carter made this clinical report. Pseudomembranous colitis meant a form of colitis characterized by the passage of large amounts of mucus, either in the form of casts, tubes, or ribbons, occurring in neurotic individuals, particularly in women. His experience with these cases showed that they were most trying to treat. The results of the treatment in the cases he wished to report were so satisfactory that he felt called upon to draw attention to it. The main point in this treatment was simply applying massage, a rotary kneading massage. The fingers should be placed over the caput coli and a kneading motion made along the line of the colon. The superficial structures were made to move on the deeper parts, thereby getting a mechanical pushing on of the material in the bowel and, at the same time, stimulating the coats of the intestine. He reported the following case : The patient

was a girl 17 years old, whom he treated for one year while she was in Massachusetts, because of her inability to come to New York City. She had always been constipated since childhood. Nine years ago she was supposed to have had appendicitis. In October, 1904, when he first heard of her, she gave a history of having for six months previous continual constipation, with mucus in her stools in the form of casts and tubes, some being from six to eight inches in length. She was placed on the ordinary treatment by diet, injections, etc., but without effect. Her nutrition was kept up by hydrotherapy and other measures. For one year she continued the same, and then she came to New York City one year ago. Her stomach was carefully examined and found to be all right. She never had a movement without the aid of enemas or purgatives. In November she was given massage every night, the treatment lasting fifteen minutes. On the 15th of December she reported that there was no more mucus in the stools and that her bowels moved regularly every day without the aid of laxatives or enemas. Her improvement was gradual but continuous. She still kept up the massage. The next case reported was almost precisely similar, although the amount of mucus passed was not so large. The occurrence of ribbons, casts of the bowels and mucus was not so marked. For one and a half years previous to last February she passed mucus continuously. There was no pain in either case. They had so-called mucous colic, but it was not characterized by colic. Two weeks after this massage was begun she had passages without the use of enemas or cathartics, and passed a very little mucus. She complained of a slight soreness over the appendix. The treatment he used he believed to be well worth a trial.

Comparative Action of Digitalis and Strophanthus.—A. HATCHER read this paper, the object of which was to suggest that in all probability strophanthus would never rival digitalis in this country. The disadvantages of digitalis were well known and required but little discussion. Strophanthus was not an ideal substitute for digitalis. Digitoxin had a greater tendency than strophanthus to produce cumulative effects. Strophanthus was more soluble in water. Strophanthin would cause no constriction of the coronary vessels. The strength of the infusion of digitalis depended upon the fineness of the powder in solution as well as upon the preparation and freshness of the leaves. The insolubility of digitoxin was against its use. Digitalin in large doses was rapidly excreted by the kidneys. In comparing strophanthin with digitalis he could find no reason why Americans should adopt the same therapeutics as Germany. He called attention to the experiments he had made with frogs, determining what dosage would produce systolic standstill in 100 gm. of frog. Accepting 6/10 of 1 c.c. as the fatal dose for 100 gm. frog, he injected a corresponding amount of different tinctures obtained from different drug stores into different frogs. The first symptoms were noticed, as a rule, in from ten to fifteen minutes, and the most powerful action produced death in twenty-nine minutes. He saw no reason why one should not get a fairly uniform result from tincture of strophanthus from the various drug stores.

Dr. GEORGE B. WALLACE said that Dr. Hatcher had referred to the variations in the strength of strophanthus in Germany; the results of experiments here showed the same variations in the American product, and the same held true regarding digitalis. In Germany it had been shown that one tincture might be 200 times as strong as another tincture. In considering the two drugs from a therapeutic standpoint, one might consider the differences in action they possess. Digitoxin had a marked constricting effect upon all the vessels of the body, whereas strophanthus did not have such an action, except upon the mesenteric vessels. In dilatation of the heart, where the arterial side of the circulation was engorged, digitalis was more effective than strophanthus, because the constriction of the vessels was beneficial. Where there was pulmonary obstruction with dilatation of the right heart the use of digitalis, causing constriction of the pulmonary vessels, was a disadvantage. It depended upon conditions whether one used digitalis or strophanthus. Again it was well known that when digitalis was given by the mouth no notable effect resulted for twenty-four hours. If strophanthus was given, on the other hand, good effects resulted in two or three hours. Therefore, in treating a case of sudden heart failure, it would be useless to give digitalis by the mouth, expecting to get quick and good results. Good preparations of digitalin produced an effect in one-half hour, its highest effect occurring in one hour, and therefore was the best agent in heart failure.

Dr. E. LIBMAN said that at the last congress in Germany Fraenkel had advised the internal use of strophanthin in cases of heart failure. Some time ago he saw a case of typhoid fever with a not very large hemorrhage and in which strophanthin was used hypodermatically. The patient sat up in bed eight minutes after, complained of a constriction about the heart, and dropped over dead. In looking over the literature he found that strophanthin had an effect twelve times stronger when given hypodermatically than when given by mouth. Intravenously it was seventeen times as strong. Therefore, when administered hypodermatically, the dose should not be more than one-half to one minim.

Dr. H. P. LOOMIS said that strophanthus was used comparatively little to-day compared to its use ten or fifteen years ago. Strophanthus was one of the most unreliable drugs we had; it came from the interior of Africa and oftentimes was inert. The uncertainty of its preparations accounted no doubt for some of its noneffects. This drug would never take the place of digitalis. At the same time the use of strophanthus in children under twelve years with cardiac disease gave good results; children seemed to respond better to strophanthus than to digitalis. The Board of Health had reported that of the various samples of strophanthus obtained at the various drug stores in this city something like 60 per cent. were more or less inert.

Dr. MORRIS MANGES asked if it was a very common thing to find combinations of digitalis and strophanthus.

Dr. HATCHER replied that he had been a pharmacologist for ten years, and had never met with such combinations.

Dr. MANGES said that if there was one thing he thought to be common it was the combining of the various cardiac drugs, just as the combining of the various hypnotics, and he called attention to the paper published by T. Lauder Brunton years ago on this subject when it was a common practice. Dr. Manges had been doing this for years. When in Edinburgh a few years ago he went through Fraser's ward, where there were cases of badly compensated hearts, and on asking how much digitalis was given these cases he was told that they used only strophanthus in Fraser's wards; whereas in the other wards of the infirmary digitalis was preferred. He was amused to hear mentioned the prompt action of digitalis; if one wished a prompt action in cases of heart failure the intravenous injection of certain drugs, as camphor, should be used to keep things going until one got the slower effect from digitalis.

Dr. HENRY W. BERG said that many hearts would get along well simply with rest, as in Fraser's ward. Dr. Berg had never given strophanthus when he wanted to regulate the cardiac action. The only time to use it was after one had obtained all the effects from digitalis possible; then he stopped digitalis and gave strophanthus. In New York he did not believe one should cease using digitalis and substitute strophanthus.

Dr. THEODORE JANEWAY believed digitalis to be the mainstay in cardiac therapeutics, but certain fundamentals should be borne in mind. It was dangerous to place too much reliance on animal experimentation; the normal animal heart, in experiments, did not act precisely in the same manner as

the human heart. When he went on duty at St. Luke's Hospital he found all the cardiacs in the ward were being treated by digitalis, strophanthus and various other agents; there was not a case that had improved in one month. He continued the use of digitalis and strophanthus for one month and saw no improvement. He then obtained some English leaves that were known to be good; an infusion was made, administered, and within forty-eight hours all but one patient had a marked diuresis and slowed heart's action. He emphasized the importance of obtaining good English leaves to make the infusion. The fault with digitalis was not with the digitalis but with the pharmacologist.

Dr. HATCHER said he was not the champion of the indiscriminate use of digitalis. Strength of different preparations differed widely, and that prepared in July showed in some cases a variation of 400 per cent. with that prepared in September. If one asked for Allen's or English digitalis the pharmacist would dispense it.

The Bacteriology of Gonococcus Infections.—Dr. T. FLOURNOY contributed this paper. He confined his remarks to the purely bacteriological aspect of infections with gonococcus and also considered the statements of many observers who reported the finding of gonococci in comparatively unusual situations. The gonococcus was a flattened or biscuit-shaped diplococcus which did not retain the gentian violet of Gram's stain and did not grow outside the body except when supplied with certain media. For the definite diagnosis of the presence of gonococcus, cultural methods must be employed. The diagnosis of gonococcus infections in situations remote from the urogenital tract was more difficult than generally supposed. In cases of joint affection complicating urethritis and clinically accepted as gonorrheal in origin, there have been obtained from the affected joint diplococci which could not be regarded as gonococcus if one accepted the classical requirements for the identification of that species. During the past year at Bellevue Hospital a considerable number of cases of the various types had been studied bacteriologically. The first class of cases was a series of affections of the joints following urethritis. Of these it might be said that, while morphologically identical with gonococcus, all of the species of microorganisms isolated grew upon so-called plain media, and were accepted as unclassified types, with the exception of one strain which agreed with all tests for meningococcus. In order to secure further data for the comparison of these species, cultures were made from cases of acute gonorrhea in the wards and a fairly large number of strains of Gram-decolorizing diplococci were obtained. About 50 per cent. of these strains grew well on glycerin-agar in early and subsequent generations. From the facts given, two possibilities might be offered in conclusion. Either there might be present, in urethritis, besides the gonococcus, another more easily cultivated similar diplococcus, or the gonococcus, contrary to the accepted belief, was capable of growth on other than the serum media. What was true of urethritis was true of its complications, since it would be hardly tenable that the same microorganism could vary its biological characteristics with its change of locality in the body. He believed the clinician could safely make the diagnosis of gonorrhea in acute cases upon the evidence of Gram-stained smears alone. The bacteriologist could not accurately identify the gonococcus in the light of our present knowledge of its characteristics. He could, however, with certainty, identify the meningococcus, whatever its source; and he could differentiate further certain other similar diplococci which were classed as micrococcus catarrhalis.

Drs. Charles Norris, E. Libman, Robert T. Wilson, and B. Lapowski discussed the paper.

Gonococcus Endocarditis, with Report of a Case and Exhibition of Specimens.—Dr. MORRIS MANGES reported the case of a woman twenty-five years old who was admitted to his service at Mt. Sinai Hospital last February. Her previous history was negative. Her husband had some venereal disease, the nature of which could not be ascertained. She had a copious vaginal discharge of one year's standing. She gave a history of having been ill with malarial fever of mild type. There was pain in her joints, especially in the left wrist joint. She occasionally had chills, sweats, and general malaise. Temperature was 103°. All he could find on admission was an axillary adenitis of old standing and a heart change. There was a moderate hypertrophy of the left ventricle, and a soft mitral regurgitant murmur. The examination was entirely negative except the characteristic gonorrheal left wrist joint, the condition of the heart, and the bloody discharge. Smears from the vagina, urethra and cervix were all negative as to the gonococci. She had rather a marked anemia, 50 per cent. hemoglobin and 17,000 leucocytes. There was an irregular temperature. On February 14, sixth day after admission, the blood examination was negative. The Bier treatment was given the wrist without appreciable effect except to cause discomfort. After ten days, with no change in her condition, a sudden change was ushered in with a severe chill, cramps, but without any noted change in the heart. Blood culture was negative. The wrist joint was not aspirated. Next a typhoid state developed and the cardiac murmur became louder. There was a marked dilatation of the heart and a rapid increase in the white cells from 17,000 to 42,000, and the patient died suddenly. The specimens obtained at autopsy were shown. On the mitral valve there was a large mass of vegetations, on the surface of which no organisms were found; but going deeper and getting a small quantity of pus in the interior, positive cultures of the gonococcus were obtained. Unfortunately no cultures were taken from the wrist, uterus or tubes. This case was of particular interest because of the condition of the mitral valve. Dr. Manges then reported a case that had been under the care of Dr. Berg. The patient was a man twenty-one years old, who nine days after a gonorrhea had severe chills, fever, and, three weeks later, nephritis. An endocarditis next occurred, and death. The blood cultures were negative. At autopsy there were found marked vegetations on the aortic valve in which the gonococci were demonstrated. Because of the mildness of the sepsis no one would have thought of ulcerative endocarditis. He emphasized the point that after a gonorrhea the endocarditis that ensued was the mildest of all forms of ulcerative endocarditis with which one had to deal, and one should be careful in assuming that every case of endocarditis occurring with or following a gonorrhea was gonorrheal in origin.

Dr. E. LIBMAN referred to the autopsy findings. In Dr. Berg's case there was a perforation of the valve due to the vegetations on and over it. In another case a man had an aortic lesion with cerebral symptoms. Here there was a destruction of the aortic valve and a purulent myositis. In another case, one of Dr. Manges's, there was found a remarkable condition, really an abscess of the valve; the mucopus contained the gonococci. He said there was a group of cases in which the gonorrheal infection set up a myocarditis with temperature.

Dr. HENRY W. BERG reported the case of a commercial traveler whom he had advised to go to the hospital. He had a septic temperature curve. On the third day he had a chill of moderate severity and the day following Dr. Libman made a blood culture which was negative. Ten days later another blood culture was made with negative findings. During the last days of his life he was in a semi-comatose condition. On the fourth or fifth day nothing was to be heard in the heart, although sought for every day. The day before death a murmur was noted at the apex, a loud blowing murmur. Thirty-six hours after the appearance of the murmur the patient died in convulsions. Among the curious features of this case was the negative blood findings.

Dr. THEODORE JANEWAY reported a case of gonorrheal

endocarditis with recovery. In 1898 he saw a man who had an attack of gonorrheal urethritis which was followed by a gonorrheal arthritis and later by malaria. There was leucocytosis and a systolic murmur over the precordium. The patient was sent to the hospital. He developed an intense septic fever, with chill, fever and sweat twice or three times a day. The temperature ran to 105° and 107°; this was followed by sweating and a drop of the temperature to normal with intense prostration. He also had a severe nephritis and pleurisy on both sides with effusion. There was a soft systolic murmur which gave place to a diastolic murmur with dilatation of the right ventricle. The condition ran its course in three months, and was followed by recovery. Blood cultures were negative during the entire course. There was a gonorrheal endocarditis with the involvement of the pulmonary valves.

Dr. B. Lapowski asked if the dry and ulcerative endocarditis could be distinguished.

Dr. Cohen said that Dr. Janeway's case might be considered a worthy one, but he did not think one should base a diagnosis simply on a cardiac murmur when the patient had gonorrhea. In Dr. Manges's case he thought possibly the application of the Bier treatment to the wrist might have been a causative factor of the endocarditis. After the application of the rubber bandage the endocardial condition occurred.

Dr. Manges, in closing the discussion, said that to distinguish between dry and ulcerative endocarditis was a difficult thing. Bacteriologists must give more positive results than they had in the past to insure better diagnoses of these conditions. A gonorrheal endocarditis, especially of the ulcerative type, offered a better prognosis, far better than that due to streptococci.

Philadelphia Pediatric Society.

At a stated meeting held October 9, Dr. J. E. Hume exhibited "A Case of Abscess of the Lung." The patient was a girl about nine years old, in whom the condition developed in the sequence of an attack of pneumonia. Dr. W. S. Moorhead reported "Two Cases of Acute Alcohol Poisoning in Boys Aged Four and Seven Years," and exhibited one of the patients. The children were brothers and gained access to some whisky in which the parents had been indulging. The exact amounts ingested could not be ascertained, although they were not thought to be large. The younger child remained stuporous for twelve hours or more and was soon restored to his usual health. The elder child, however, developed convulsions in addition, and at times his life was despaired of. Eventually, however, he also recovered in the course of a week. Dr. E. E. Graham presented "A Brief Résumé of the Work Done in the Section of Diseases of Children at the Boston Meeting of the American Medical Association, Held in June Last." Dr. Alfred Hand, Jr., made "A Report on the Papers Read Upon Diseases of Children at the Toronto Meeting of the British Medical Association, Held in August Last." Dr. J. H. McKee presented "A Report of the Papers Upon Diseases of Children Read at the Bedford Meeting of the Medical Society of the State of Pennsylvania in September Last." Dr. W. S. Newcomet described, with lantern demonstrations, "The Relations of the Mediastinal Lymph Glands to Disease and Their Value in Early Diagnosis."

Hemorrhoidal Dilatations of the rectal veins so high up as to render the use of the proctoscope necessary for their detection may, according to Goldmann, be the source of occult hemorrhages forming the basis of severe grades of anemia, and should always be looked for in cases of anemia of unknown origin.—*Zentralblatt für Chirurgie.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending November 3, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	387	176
Diphtheria	239	25
Measles	64	3
Scarlet Fever	73	5
Smallpox	—	—
Varicella	48	—
Typhoid Fever	99	24
Whooping Cough	41	5
Cerebrospinal Meningitis	6	11
Malarial Fever	...	...
Totals	957	249

Resection of the Spermatic Cord Without Castration, an Operation Complementary to the Radical Cure of Inguinal Hernia.—J. Morin, in a recent thesis, advocates this method in selected cases. He bases his thesis on six observations. As suitable cases, Morin cites hernias which are very large and which have weak walls. Cases of recurrence, also, with a large orifice, are considered suitable for this method. The testicle does not become necrotic after this proceeding, and both of these organs are left in place. Further, the operator, being relieved from all annoyance with the cord, is able to close the inguinal orifice completely and thus give to the patient every chance of a permanent recovery.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 2, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Oct. 13–20	1	..
Illinois, Galesburg	Oct. 13–27	15	..
Missouri, St. Joseph	Oct. 6–13	2	
New York, New York	Oct. 13–20	2	..
Texas, Houston	Oct 13–20	1	.
Wisconsin, Appleton	Oct. 13–27	2	.

SMALLPOX—FOREIGN.

Brazil, Bahia	Sept. 13–22	1	..
Pernambuco	Sept. 1–30	.	11
Rio de Janeiro	Sept 16–30	5	..
Chile, Antofagasta	Aug 20-Sept 12	18	2
Coquimbo	Aug. 21		Present
Columbia, Cartagena	Sept 8–15		Present
	Sept. 22–20	5	..
France, Paris	Oct 6–13	3	..
India, Calcutta	Sept. 8–15	..	3
Russia, St. Petersburg	Sept. 15–29	5	1
Spain, Barcelona	Oct 1–10	8	..
Cadiz	Sept 1–30	7	..
Madras	Sept. 8–14	.	1
Madras	Sept 22–28	.	1
Russia, St. Petersburg	Sept. 15–20	5	1
Spain, Barcelona	Oct. 1–10	8	.
Cadiz	Sept. 1–30	7	..

YELLOW FEVER

Brazil, Rio de Janeiro	Sept 23–30	1	1
Costa Rica, Limon	Oct. 12	1	Imported
	from *Cartagena* on S. S. Prince Waldemar		
Cuba, Cruces, vicinity of	Oct. 24	..	1
Habana	Oct. 26 30	5	.
Mexico, Merida	Oct. 7–13	2	..

CHOLERA INSULAR.

Philippine Islands, Manila	Sept. 2–9	27	24
Provinces	Sept. 2–9	180	146

CHOLERA—FOREIGN.

China, Shanghai	Sept. 15–22	1	..
India, Calcutta	Sept. 8–15	.	15
Madras	Sept. 8–14	.	131

PLAGUE.

Brazil, Pernambuco	Sept. 1–30	..	14
Rio de Janeiro	Sept. 16–30	19	5
Sao Paulo	Sept. 16–23	..	1
Egypt, Alexandria	Sept. 20-Oct 11	8	4
Suez	Sept. 29-Oct 11	13	10
India, Calcutta	Sept. 8–15	..	8
Turkey, Adalia	Sept 20–23	3	..
Peru, Lembayeque	Sept. 11	.	1
Lima	Sept. 5	1	..
Trujillo	Sept. 5	3	

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Original Articles.

HEREDITARY CHOREA.*

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THE disease to which the name "hereditary chorea" has been applied differs widely from the ordinary form of Sydenham and suggests an altogether different pathology. Discovered apparently in 1841 by Dr. C. O. Waters of Franklin, N. Y., it attracted but little attention for more than forty years and remains to-day a poorly understood, although well-recognized affection. Waters' description, as published by Professor Dunglison in his "Practice of Medicine," gave a lucid account of the salient features of the disease, to which little of importance has since been added. His cases were observed in the southeastern part of the State, where he stated it was somewhat common and known to the laity as "the magrums." The next paper on the subject appears to have been the graduation thesis of Dr. Charles R. Gorman, which was presented to the faculty of Jefferson Medical College some time previous to 1848. So far as we can learn, this paper was never published, our only knowledge of it being from Professor Dunglison's reference† to the original manuscript. In 1863 Dr. Irving W. Lyon published brief histories of three cases and stated he knew of others he could cite to show its hereditary nature. His cases were typical of the disease, two of them showing heredity through three generations, while the third family was known to have been afflicted for at least four generations. This last also included an illustration where the disease had skipped one generation in a collateral branch of the family to appear in the next, a circumstance which some writers, including myself, have stated did not occur. Apparently without knowledge of these reports Dr. George Huntington, in 1872, called attention to the disease, as seen by him upon eastern Long Island, and he has been considered by some as its real discoverer, his name being often given to the disease. But it is only within the last twenty or twenty-five years that the disease has been generally recognized by neurologists, and in still less time that an attempt has been made at careful study of its pathology.

That hereditary chorea is a rare disease no one will deny, many neurologists in all parts of the world never having seen a case, unless on exhibition as a curiosity. At present the number of cases reported in this country probably does not exceed one hundred and fifty or two hundred, in spite of the fact that it is here the disease has been longest known. The late Professor Gray attempted to show it was not an uncommon disease, and said he knew of a dozen towns where it was present. But if we recall the fact that Long Island seems to have been the original center from which by far the greater number of these choreic families have sprung, and that New York, Connecticut, New Jersey, and eastern Pennsylvania had furnished a large proportion of all cases reported to the time he made that statement, we need not be surprised that a distinguished New York consulting neurologist should have seen an unusual number of cases. Nor would it be strange, considering the long duration of the disease, if some at least of his cases had been seen and reported by others. As regards its frequency in comparison with Sydenham's chorea, the proportion must be largely in favor of the latter, although that is far from a common disease. Personally, I have seen more cases of the hereditary than of the ordinary form, but I regard my experience as unusual, four of my patients in two different families coming under observation during my service at our county hospital. Aside from the localities already mentioned, cases of chorea have been reported in Ohio, Illinois, Iowa, some of the Southern and extreme Western States and Canada, many of them being terminal dementia cases in insane asylums. In Europe the disease has been observed in Germany, in Austria, in France, and in England.

Of the etiology of the disease little is known beyond the very positive influence of heredity. So decided am I as to heredity being the great predominating, if not the only, factor in inducing the disease that I should consider a diagnosis of this form of chorea unjustifiable without a history of adult chorea in an ancestor, a brother or sister, or a child. Yet Bower has reported a case which presents nearly all the characteristics of the hereditary disease, but in which he says there was an entire absence of history of heredity. He does not, however, state the ages the parents or grandparents of his patient attained or the causes of their deaths. In 1889 I suggested that possibly all cases in this country might be traced to eastern Long Island, as that seemed to be a center around which many cases clustered. Recently Dr. Jelliffe of New York has attempted to find, if possible, a heredity in a common stock of all American cases reported and has succeeded, I understand, to an unlooked-for degree. But we must admit that Bower's first case in a full-blooded negro does not fully conform to our ideas of heredity from a single source, but proves the possibility of another distinct cause.

Several other factors have been given as exciting causes by one author,* as rheumatism, pregnancy, hysteria, the emotions, and other functional nervous diseases, but from the evidence at hand we must regard their influence as very slight. Age, undoubtedly, is a factor of some importance, by far the

*Read before the Eighth District Branch of the Medical Society of the State of New York, at Buffalo, August 18, 1906.

†Dunglison's Practice of Medicine, Third Edition, Vol. II., page 218.

*Bary, Nervous and Mental Diseases, N. W., 1893.

greater number developing between the thirtieth and the fiftieth year, but several cases have been reported as beginning much earlier. Most authors agree that sex is without influence, but Gray asserts that females are much more susceptible than males. The three families reported by me show thirteen males out of a total of seventeen known cases, and upon tallying up all the cases I can find in literature there appears a slight preponderance of males. Whether other diseases or conditions act as exciting causes in a person predisposed by heredity by inducing a state of lowered vitality or an unstable condition of the nervous centers is a question we cannot decide from present data.

Our knowledge of the pathology of the disease is still more unsatisfactory than its etiology. Numerous autopsies have been made by competent observers, but with the result that no constant lesion, either gross or microscopic, has been found. That it is something more than a neurosis its uniformly progressive nature and constant termination in death, as well as the utter uselessness of treatment, would imply. Again, if a neurosis it would be likely to occur more often in females and during the time of greatest sexual activity. And it would be difficult to explain why numerous cases have not originated *de novo* somewhere in the world without the constant necessity of family inheritance. But as yet few, if any, cases have been reported where the diagnosis is beyond dispute in which an immediate ancestor not farther removed than grandparent has not likewise had the disease, and it has been possible in nearly every instance to trace this heredity back as far as accurate history of the family could be obtained. But while the autopsy findings have not been uniform, and hence are, to a certain extent, unsatisfactory, they have, nevertheless, established the presence of an organic lesion in or near the motor centers, tending to unbalance the normal functional activity of those centers. As long ago as 1887 Huber* found pachymeningitis in one of his cases, while Macleod found a hematoma of the left hemisphere in one case and several tumors of the dura mater of the left side, implicating the first and second frontal convolution in another. In both his cases there were atheroma and thickening of the cerebral vessels, while the brain substance was unusually hard and congested. Phelps's case showed atrophy of the brain, especially of the anterior part, with serous accumulations under the dura and in the pia arachnoid; also a cystic formation in the right lateral ventricle. Rusk has recently reported an autopsy in which he found a "diminution in size of nervous elements generally, a shrinkage of the cells in the dorsal root ganglia, and a pigmentary degeneration of the neuroglia and of the white matter about the periphery of the cord." Spiller's examination of a well-marked case was less conclusive, the lesions found being very slight. Stier, in comparing his findings with those of other authors, makes the deduction that the disease is always due to an inherited asymmetry of the brain, which begins with a proliferation, either diffuse or circumscribed, of the neuroglia in the motor centers, but is most marked in the second and third cortical layers. At the same time the blood-vessels become diseased and a condition of degeneration of the ganglion cells is initiated which slowly progresses during the life of the patient. In Osler's case the arachnoid was turbid and separated from the pia by a serous exudate, the large arteries were stiff and thickened, and in places showed hyaline degeneration, and fatty changes were marked in specimens from the cortex. These and other reports appear to show that an organic lesion is always present but that its exact nature is variable, tending, however, to induce sclerotic or degenerative changes with moderate atrophy of the convolutions.

*Virchow's Archiv, Bd. CVIII, p. 267.

The clinical history of the disease shows definite characteristics at almost every stage, the variations being slight as compared with other chronic maladies. Beginning in a person about thirty-five or forty years of age, one of whose parents has been likewise affected, it first manifests itself by irregular twitchings of the muscles of the hands or face, which slowly increase in severity, in frequency, and in extent of distribution. These twitchings are at first controllable for a short time by an effort of the will, but that same effort augments their severity after they have passed beyond restraint. During sleep they cease entirely, while in repose they are somewhat less violent, the only author recording a different observation that I have seen being Mackay, in a French-Canadian family in Montreal. The movements differ materially from those of ordinary chorea or of tremor, in that they are irregular, are coarse in nature, and increase very slowly year by year. Beginning almost always in the hands and arms, they first manifest themselves by a restlessness or sudden movement of the part which at first may be thought to be due to nervousness or to habit. But as they slowly increase, the face, lower limbs, and body become successively involved, and finally, after some years, they reach a stage where speech becomes indistinct and broken, locomotion uncertain and attended by falls, mastication and deglutition difficult, and the use of the hands for coordinate and exact movements impossible.

Possibly an attempt to describe the character of the movements may not be without profit. In the face or hands a movement consists of a sudden and more or less violent contraction of a muscle or group of muscles which is momentary in time and followed by complete relaxation. This is succeeded almost immediately by an equally strong contraction in a distant muscle or group, or perhaps simultaneously in two or more widely separated parts, as, for instance, in the face and one hand, or in a hand and both hips. The movements attack the flexor muscles almost exclusively, are painless, and extend over a far greater range than those of ordinary chorea, differing also from athetosis in that the contractions begin and end suddenly and are not wavy or attended by rigidity. The movements in the hand may affect the fingers only, or, as is more characteristic, the whole hand may be flexed at the wrist and drawn strongly to the ulnar side. The movements of the arm in one patient of mine jerked the hand from the lap nearly to the face. In walking this same patient carried the feet far apart, and after taking a few steps in an awkward manner raised one foot unnaturally high and brought it down firmly on the ground. Then stopping suddenly and bending his body slightly forward, with hips pressed back, he raised himself on his toes, and while rocking from this position to the natural one went through many contortions of features and gesticulations. Regaining his balance he then threw his body forward, and after taking three or four quick steps would come to another sudden stop. In this way he got around considerably, although he fell quite often.

The movements of the face, when they are present, generally affect the muscles of the inferior and intermaxillary regions principally, so that the cor-

ner of the mouth is jerked downward and outward. This may occur on both sides, but if so, the contractions are much stronger on one side than the other and may give rise to a smacking sound of the lips, as in one case of mine. Next to the muscles of the mouth, probably the one most often affected is the frontalis, by which the eyebrows are raised and the forehead wrinkled, and after that the muscles which depress the lower jaw and open the mouth. But the muscles of the face are by no means always attacked to the same degree and may remain entirely free, as in a probable case I saw through the courtesy of Professor Krauss at the Erie County Hospital. This patient was a male about fifty years of age and presented many of the characteristic symptoms of the disease, but a family history could not be obtained, either to confirm or confute the diagnosis, as the records were silent on that point, and the patient himself was deaf and dumb.

The general health of the patient appears for years to be but little interfered with, barring accidental sickness, the appetite being good or ravenous, digestion normal, bowels regular or, perhaps, slightly constipated, sleep natural, and the menses often typical of health. There is no marked emaciation or evidence of circulatory or metabolic disturbance. The features assume a dull, listless expression, but the mind remains clear and free from disease until a late stage as a rule; but finally marked mental unsoundness develops, which generally takes the form of a slow, progressive dementia. Burr,* however, has observed a case in which marked symptoms of acute excitation developed with delusions of grandeur and motor weakness, which continued for two or three months and then disappeared, leaving only some minor delusions. Most authors have noted a suicidal tendency in their patients or a history of suicidal attempts in their ancestors, but it is a curious circumstance that most of these efforts at self-destruction have failed. These attempts have, for the greater part, occurred at a time when the mental change was first commencing and the patient could look forward to a detestable and hopeless existence. Later, the mind becomes so blunted as to make them oblivious to appearances or the niceties of society.

There is nothing to show that patients with hereditary chorea are more liable to other diseases than are those not so afflicted. Hysteria, neurasthenia, epilepsy, and other nervous diseases are rare, and if they do occur must be regarded as accidental complications and not as essential parts of the disease. Sleep, as a rule, is good. Neuralgia and headaches, at least of a severe form, are not common and my patients have all been very dull to the sensation of pain, bearing without complaint such minor operations as the extraction of teeth, the opening of abscesses, or the stitching of wounds. Even the pain of pleurisy and of fractured bone has been insignificant as compared with other patients; but I regret I have never had opportunity to observe the pains of labor in a patient with this disease.

As regards the sexual function, all observation goes to show it is but little interfered with in either sex until the disease has become quite far advanced. Several authors have spoken of the large families their patients have had, in some instances two or more children having been born to patients after they had become distinctly choreic. Menstruation may or may not occur, probably following the same laws which determine its presence or absence in other chronic or exhausting diseases. Respiratory and circulatory disorders do not occur with any more frequency than in other diseases, except that autopsies show, as already stated, degenerative or sclerotic changes are often found in the cerebral vessels. For that reason it is remarkable that cerebral hemorrhage is not a common cause of death, instead of a rare one, most deaths being due to exhaustion, the direct result of the disease.

The duration of hereditary chorea is generally about twenty or twenty-five years. A few cases have been reported which were more rapid in their course, but acute cases of a few weeks' or a few months' time are unknown. The diagnosis must be from Sydenham's chorea, athetosis, the ataxia of paresis, and of disseminated and combined sclerosis and from simple, chronic adult or senile chorea. Ordinarily the diagnosis is easy on account of the history of chorea in a parent or grandparent; in fact, the patient and his friends are watching with fear for the expected development of the disease. It is most apt to be mistaken for the simple chronic form of adult chorea, but it can generally be readily differentiated by its absence of known cause, as pregnancy, hysteria, or serious disease of the heart or blood-vessels, by its very slow onset and by its history of well-marked heredity.

The treatment of hereditary chorea marks a sad chapter in therapeutics. Nothing as yet has been found of permanent benefit, and our only success comes from treating intercurrent complications as they arise. Arsenic, hyoscine, galvanism, and prolonged rest have been tried, but without favorable results, and the only effect of bromides is to hasten mental decay. Not a single case of cure is known in literature, and I feel sure if such a happy result had been attained within the last quarter of a century at least it would have been put in print. Nor is it possible to even hold in check or abate the severity of the movements except for a brief time. Waters, however, reported that in one of his patients the movements ceased temporarily under the influence of all instrumental music except that from a common Jew's-harp; but no other author has made a like observation. I recall that when a boy I heard a traveling lecturer, who was afflicted with some disease of an ataxic nature, but whose movements were quieted for about an hour by a few soft tones from a church organ. What his disease was I did not know, but since arriving at maturity and learning something of nervous disorders I have reached the conclusion that his movements were neurotic, if not assumed for sympathy, and that they could not have been due to organic lesions in the brain.

Of course persons predisposed by inheritance or patients in the early stages of the disease should observe the rules of hygiene, have plenty of sleep and rest, avoid all causes of excitement, and attend to all the functions of the body as well as to any minor ailments, especially nervous, which may develop. And all persons in these families should be advised against marriage, at least until the chain of heredity has been broken for two or more generations.

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NOTE.—I am indebted to Dr. Theodore Diller of Pittsburg, Pa., for assistance in collecting references to recent bibliography of the disease.

MAN'S NATURAL PROTECTIVE AGENCIES AGAINST TUBERCULOSIS.*

BY SILVIO VON RUCK, M.D.,

ASHEVILLE, N. C.

OF the natural protective agencies of the body, the intact skin first suggests itself as an important one. The highly developed stratified squamous epithelium of the epidermis presents at once an effectual barrier to the penetration of bacteria and a further mechanical protection, viz., the constant exfoliation of the superficial epithelial layers, practically removes them.

While it is true that the permeability of the skin for the tubercle bacillus has been proven by animal experiments, it is questionable that the conditions incident to the experimental technique would often obtain in nature, and also the more delicate structure of the skin of the small experiment animals would permit of a more ready permeability than the denser and thicker integument of the human species. In the same sense the skin of men offers a relatively greater resistance to infection than that of women and children, a fact well exemplified in the greater frequency of lupus in females and especially in early childhood. Furthermore, the temperature of the skin does not favor the development of the tubercle bacillus and, if we accept the views of Hahn,[1] the deficiency of water in the superficial epithelial layers and the acid reaction of the sweat contribute to its protection.

*Read, by invitation, at the meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee, at Chattanooga, October 2, 3, and 4, 1906.

Against infection of the digestive tract a series of protective agencies may be recognized, varying in nature and relative efficiency with the differences in structure and function of its respective parts. Thus the oral cavity, inferior portion of the pharynx and esophagus are clothed with stratified pavement epithelium which is not easily permeable. Bacteria which gain entrance into the mouth are, like the food, quickly surrounded by mucus and saliva* which prevent their direct contact with the mucosa, and then are expectorated or swallowed.

The inferior portion of the pharynx, with its smooth surface and abundant secretion of mucus, together with the frequent passage downward of food and drink does not afford favorable conditions for the localization of bacilli.

Similar agencies serve to protect the mucosa of the esophagus, and when this organ becomes the seat of tuberculous disease, which is seldom, the infection, according to Cornet,[2] is usually from the outer side, as a result of suppuration of caseous tracheal and bronchial glands which have become adherent to its wall as the result of inflammatory processes.†

Whether the tonsils may be regarded as organs of defense is doubtful. The participation of these glands in tuberculous processes is remarkably frequent; indeed, autopsy findings in individuals who have died of advanced pulmonary phthisis show that histologic tubercles are present in them in almost all cases. On the contrary, in cases in which tuberculous lesions of the lungs are slight, obsolete or absent, the involvement of the tonsils is exceptional.

The position of the tonsils is such that in the act of swallowing, sputum or food containing bacteria is forced closely against them, particles of which readily enter and are retained in the numerous crypts and crevices of their surface. Hence when great numbers of bacilli are brought directly into contact, as by the sputum in advanced cases of phthisis, tonsillar infection is most certain to occur.

In further explanation of the exceeding frequency of tuberculosis of the tonsils, Dmochowski [3] even attributes to the crypts a sucking power by which under pressure of the constrictors in deglutition their secretion is first expelled and then particles of fluid or sputum are drawn in as the muscles relax and the crypts again expand.

Moreover, the tonsils are often the seat of catarrhal inflammation which injures the epithelium, and according to the investigations of Stoehr[4] in all mammalia possessed of tonsils there is normally a constant emigration of leucocytes from the adenoid tissue through the epithelium into the oral cavity. The leucocytes push through between the epithelial cells, compromising their function and even destroying it.

But how are these facts and phenomena to be

*Sanarelli claims to have shown a pronounced bactericidal action of the saliva (*Centralblatt für Bakteriologie*, Vol. 10), but in this he is not confirmed by the observation of others.

†Besides 19 cases which Flexner had previously collected from the literature, including one of his own, Cone (Johns Hopkins Hospital Bulletin No. 80, Nov., 1897), found 82 others, subsequently recorded. She, herself, added another, making in all 48 cases of esophageal tuberculosis reported up to 1897. Her study of the subject shows that only about one-half owed their origin to extension from adjacent parts. That tuberculosis of the esophagus occurs more frequently than these figures indicate, I am convinced by the fact that in my own notes, which are incomplete, I find references to 22 additional cases reported since 1897. In 12 of these only, was the mode of invasion that of which Cornet speaks as the usual one. To the 70 cases thus assembled, I am able to add still another of my personal observation in which a tuberculous abscess of one of the deep cervical glands communicated with the esophagus.

interpreted? Do they signify a peculiar disposition to infection of the tonsils, or are they by nature's intent so situated and so constituted as to bear the first brunt of invasion in this region of the body? In structure the tonsils correspond to the lymph glands which are known to arrest bacteria and to become themselves diseased while acting as barriers to the advance of infection to other parts. Reasoning upon this analogy Metchnikoff sees in them, and also in the lymphatic structures of the intestine, a defensive apparatus which produces phagocytes for the destruction of pathogenic microorganisms. In this belief he finds support in the work of Ribbert,[5] Bizzozero,[6] Manfredi,[7] and Ruffer,[8] who observed bacteria enclosed in the leucocytes of the tonsils, solitary follicles and Pyer's patches of the intestine.

In the gastrointestinal tract the constant peristaltic motion hinders the localization of tubercle bacilli which may be swallowed with sputum or ingested with food and carries them out with the feces.

Numerous investigators have sought for additional protective agencies in the digestive juices, but their experiments have led to contradictory results. Wesener[9] found that by neutralizing the gastric acidity of experiment animals with alkalies synchronously with the feeding of tuberculous material, infection of the intestines was more uniformly successful than when alkalies were not administered. London[10] was able to observe a bactericidal action of the gastric juice after it had been neutralized and which was not destroyed in all cases by heating for an hour at 55° C., and Strauss and Wurz[11] showed that the bactericidal action of the gastric juice runs parallel with its content of hydrochloric acid. On the other hand, Falk[12] subjected tuberculous material to artificial digestive influence and likewise experimented upon animals, finding that the digestive process does not destroy the virulence of the tubercle bacillus and observing infection to occur despite the action of the gastric juice. Ferrannini[13] showed that the gastric juice, taken from the human subject and kept at body temperature from one to two hours does not destroy tubercle bacilli, which nevertheless proved infectious for guinea pigs. Not without interest in this connection is a case reported by Curschmann[14] in which the pylorus was surrounded by a cicatricial tuberculous ulceration and in which free hydrochloric acid which was present in the stomach evidently failed to protect the patient. All in all the weight of experimental evidence, coupled with the fact that tubercle bacilli can be grown upon media which contain almost as much acid as the gastric juice, renders it highly improbable that the stomach possesses any bactericidal power over the tubercle bacillus, which is attributable to the acidity of its secretions. That its hydrochloric acid exercises some degree of inhibitory influence the experiments with alkalies are indicative.

Concerning pepsin, Miescher[15] has demonstrated that it exerts almost no digestive action on nucleins, and in view of this Hahn[16] thinks there is little likelihood that this ferment has an appreciable digestive influence upon the body substance of bacteria.

The study of the other secretions of the digestive tract and its tributary glands has likewise failed to reveal bactericidal effects upon the tubercle bacillus. Falk[17] for example, exposed tuberculous cavity contents to the successive actions of saliva, gastric juice, bile, pancreas extract and putrid bile and intestinal fluid. Only the putrid fluids proved active in destroying the tuberculous virus. Frank[18] found that the digestive juices have no power to destroy the tubercle bacillus. Hydrochloric acid 0.05 to 0.1 per cent. added to fluids containing the bacilli and allowed to act from one to six hours in the incubator, as also pepsin 1 to 1000 and bile 0.3 per cent., never prevented infection. Sergent[19] subjected tubercle bacilli to the bile without producing in them any changes in their staining properties, growth, or virulence. Cadéac and Bournay[20] fed dogs with tuberculous tissue and found large numbers of living tubercle bacilli in the feces. Intestinal digestion, therefore, did not destroy human tubercle bacilli.

Within recent years a ferment has been discovered in the succus entericus which Powloff has called enterokynase. Delezenne[21] has shown this substance to be a true ferment and that it is derived from the lymphatic apparatus and particularly from Peyer's plaques, which Metschnikoff says contain a large number of mononuclear ameboid cells. Delezenne also demonstrated the presence of enterokynase in leucocytes. It is probably identical with the enzyme or digestive substance, which according to Metschnikoff dissolves bacteria within these cells, and while there is no evidence that it exercises a bactericidal action upon the tubercle bacillus, that it may have an inhibiting influence is not beyond the bounds of speculation.

Like the tonsils the follicles of the gut are exceedingly prone to tuberculous infection, localization in the intestine occurring with greatest frequency in those regions most richly supplied with them. But intestinal tuberculosis is of comparatively rare occurrence except in cases of advanced phthisis in which large numbers of bacilli are swallowed with sputum in the course of, and especially toward the close of, the pulmonary disease, while at the same time there is a progressive reduction in functional vigor as portrayed in the diminished secretion of hydrochloric acid, and in the failing powers of both gastric and intestinal digestion. The emigration of, and phagocytic action ascribed to the leucocytes of the intestinal follicles has already been mentioned. Viewed in the light of possible protective agencies it is not inconceivable that these structures in the healthy organism may cope successfully with tubercle bacilli if they do not reach them in too great numbers as Metchnikoff would lead us to believe.

Finally the rich bacterial flora of the normal intestine and its lively chemical activity have been thought to hinder the development of pathogenic microorganisms. The studies of Macfayden, Nencki, and Sieber[22] have shown that the saphrophytes of the small intestine decompose chiefly the carbohydrates with the formation of ethyl alcohol, lactic, acetic and succinic acids; also that the acid chyme from the stomach does not become neutral, much less alkaline, until it reaches the ileocecal valve. Whether this acidity, or the alcohol, or both, would oppose the growth of the tubercle bacillus is merely a speculative consideration.

For prevention of infection of the respiratory tract the cleansing of the air in traversing the upper portions thereof first claims attention. These parts are admirably adapted to this purpose and the function of the nose especially in filtering the inspired air is practically perfect. As the air enters the nasal vestibules larger particles of dust carried by it are arrested by the vibrissae and the direction of the inspiratory current is such that the finer particles and bacteria are drawn immediately against and deposited upon the moist surface of the anterior portion of the septum.[23] Here the greater part remains adherent while further deposition occurs as the current continues on its way through the intricate and mucus coated nasal passages to the nasopharynx. At

this point the inspiratory blast is deflected at a sharp angle against the upper portion of the posterior wall of the pharynx[23] which again conditions the deposit of particles still in suspension. Thus in ordinary atmospheres the air reaches the larynx practically free from dust and microorganisms.

The situation of the nose at the proximal end of the respiratory tract and its function as a filtering apparatus render it the most exposed part. For these reasons, at first thought it would seem that it should become very frequently the seat of primary tuberculous infections, but the contrary is the case owing to protective agencies with which it is remarkably well supplied.

Upon the septum where deposit of germs occurs first the true skin extends for a considerable distance before the mucosa begins. The cells of the epidermis here offer a greater resistance than the epithelium of mucous membranes. In other situations and especially those which lie in the direct path of the main air current of inspiration the mucosa is equipped with ciliated epithelium, the vigorous action of which rapidly transports particles of dust and bacteria onward to the nasopharynx. Moreover, the nasal mucous membrane possesses an intensity of reflex irritability not exceeded even by that of the eye. Chemical and mechanical stimuli of very slight degree provoke most energetic reaction. The vessels become engorged, the nasal passages are narrowed and there is secreted a thin watery fluid, in part contributed by the lachrymal glands, which, added to the mucus normally present, bathes the membranes and washes away foreign particles, which are besides forcibly expelled by the powerful expiratory blast in blowing the nose and in sneezing.

A germicidal effect of the nasal mucus has been shown by some authors, Wurz and Lermoyez[24] finding that it killed anthrax bacilli in from two to four hours. To the tears a bactericidal action has also been ascribed, which if true should contribute likewise to the protection of the nasal mucous membranes.

On account of the direction of the air current from the nose and the deposit of dust in this situation, the nasopharynx is a favorable port of entry for tuberculous infection, the danger of which is increased by the corrugated irregular surface of the pharyngeal tonsil which affords opportunity for the retention of bacteria. The possibility of protection, due to the lymphatic tissue of this structure, as has been considered in connection with the faucial tonsils, is equally problematic, but protection against local infection is to be found in the free secretion of mucus and the ciliated epithelium of the respiratory portion of the pharynx, and also in the act of hawking and clearing the throat.

Despite its exposed position tuberculosis of Luschka's gland is not as frequent as might be imagined. Nevertheless, tubercle bacilli and histologic tubercles have been found in excised adenoid vegetations sufficiently often to demand caution in the selection of cases for their removal, because of the mobilization of the infecting material which may follow such operations.

The protective provisions of the upper air passages have been well proven by the experiments of Goebell.[25] Having found that when these are intact the lungs of animals are free from bacteria, he showed that after experimental tracheatomies the lower respiratory apparatus become regularly infected.

Mouth breathing predisposes to localization in the lungs, for the filtering action of the nose thereby falls out. Nevertheless, only a small part of the dust inhaled enters the trachea, Kayser having shown that most of it remains upon the tongue and soft palate. As the inspired air continues its way to the lungs, corpuscular elements which have not been removed above are deposited upon the moist surfaces of the larynx, trachea, and bronchi, the many divisions and angles of which greatly facilitate the cleansing process. These portions of the respiratory tract, with the exceptions of the vocal cords and posterior laryngeal wall are also lined with epithelium of the ciliary variety, and which extends according to Landois to the distance where the bronchioles are only one millimeter in diameter.

For the function of the ciliary epithelium a fluid medium is necessary and this is supplied by the film of mucus which is everywhere present in the respiratory tract and which also shields the membranes from the penetration of bacteria. Furthermore, Kraft[26] has shown that the ciliated cells are themselves mechanically irritable and that dust excites their activity. Through investigations of the air ducts of warm-blooded animals he found that when catarrhal inflammation existed and the living membranes were heavily coated with thick mucus, the cilia were sluggish, the wave of irritation traveled slowly and was far more susceptible to all sorts of chemical influences than in the presence of the normal mucus secretions.

According to Englemann,[27] the rapidity with which the ciliated epithelium may move forward the fluid layer upon its surface is one millimeter per second, and Werner[28] estimates that it would take an hour to transport substances from the smallest bronchi to the larynx at the rate of one-tenth millimeter per second.

Last but not least of the protective agencies of the respiratory apparatus is the highly sensitive mechanism of the trachea and bronchi, the irritation of which by foreign substances Nothnagel[29] has shown to induce reflex cough. By this arrangement a powerful auxiliary is brought to the aid of the ciliated epithelium in the expulsion of dust and bacteria from the lower air passages.

Turning now to the genitourinary system, the bladder, as shown by Leube,[30] is, under ordinary conditions, sterile. This can not be due to the acidity of the urine alone for, as Hahn[31] remarks, in animals with ammonical urine the bladder also remains free from bacteria. The true explanation of these facts presumably lies in the frequent washing out by the urine and this also serves to protect the urethra. Against penetration of bacteria the epithelium of the vesical mucosa is relatively resistant, since it is of the squamous transitional type which is likewise common to the renal pelvis and the prostatic portion of the male urethra. Here this type gradually gives place to the columnar variety which continues to the fossa navicularis. This mechanically more favorable situation for the settlement of bacteria is again better protected by stratified pavement cells which constitute the least permeable form of epithelium.

The female urethra is lined throughout by this variety, while, moreover, its straighter course and shorter length renders it less liable to infection than its analogue in the male.

The vagina is similarly supplied with a thick layer of squamous epithelium, and experimental evidence indicates that its acid secretion is not an indifferent factor in its protection. Kroenig[32] found this secretion germicidal, pathogenic bacteria, and especially streptococci, being destroyed when introduced into the vaginæ of healthy women. Kroenig's observations are in accord with those of Menge,[33] who also

showed that the cervical mucus possesses like power. Additional confirmation of the bactericidal action of the secretions of the vagina is supplied by the investigations of Doederlein.[34] According to the latter this property is due to peculiar faculative bacteria, which he calls "vagina bacilli," and which he succeeded in culturing upon one per cent. sugar bouillon, to which was added a drop of vaginal secretion. Doederlein further ascertained that when the vaginal mucus is but feebly acid or alkaline in reaction these bacteria are absent.

No discussion of the protective agencies of mucous membranes can be complete without at least reference to differences in their permeability incident to age. Upon this subject a voluminous literature has developed in recent years, the preponderating evidence of which shows undoubtedly that the mucosa, like the skin, of infants and children everywhere permits of the penetration of bacteria more readily than that of adults, a fact which Behring utilizes in his unique theory of infection.

The external protective agencies of the eye and ear now remain for our consideration.

In spite of its exposed position tuberculosis of the eye is comparatively a rare affection. So far as concerns infection from without, this is primarily explained by the sensitiveness of the organ for foreign bodies. Very minute particles of dust which come in contact with the cornea and conjunctiva (and according to Cornet, so small a thing as a bacillus, measuring one-thousandth of a millimeter), are sufficient to cause a copious secretion of tears and a pronounced activity of the lids. As the result of this high degree of reflex irritability, particles of dust and bacteria, which are not screened out by the cilia of the lids, are carried by the lacrymal secretion into the palpebral angles and washed away, at the inner canthus through the canals, lacrymal sac, and nasal duct into the nose, whence their further removal has already been described. Of the tears, moreover, a germicidal action has been claimed by Bernheim, but this Bach was unable to confirm and sees in them only a mechanical agency. That they have no such action upon the tubercle bacillus is borne out by the occurrence of tuberculosis of even the lacrymal sac, cases of which have been reported by Knapp,[35] Schiele,[36] and others.

Except in cases in which tuberculous infection of the middle ear occurs through the blood, the route is almost always through the eustachian tube. The mucosa of the latter is a continuation of that of the nasopharynx and the movement of the cilia of its epithelium is toward the pharynx, while a further barrier to infection is to be found in the narrowing of the tube at the junction of the bony and cartilaginous portions. Under ordinary conditions it is hardly conceivable that infectious material can reach the tympanum by way of the external auditory canal. The fine hairs within the external meatus, the nature of the lining membrane, which renders it resistant to the penetration of bacteria, and its coating of cerumen are here effective provisions for the prevention of localization from which extension to the tympanic structures might occur. Only when there are injuries of the wall of the external canal as are often caused by efforts to remove cerumen by means of unclean instruments is local infection liable to occur, and in this connection I may mention an instance of my own experience in which a phthisical woman produced such an infection of the anterior wall almost at the drum membrane by means of a hairpin.

From the preceding paragraphs, to which much more might be added in the elucidation of an interesting subject, it may be gathered that the human organism is indeed well supplied with a host of protective agencies, against tuberculosis. The efficiency of these numerous agencies, depending as it does upon their integrity, is not always of the same degree. Through impairment of their function or by its destruction the protection afforded is often temporarily or permanently lost. Thus given the opportunity for tuberculous infection with this or that avenue unguarded, the bacillus may enter and become localized in the tissues. That this happens far more frequently than clinical observations of tuberculosis would indicate is well known, autopsy findings in persons who have died from other causes having revealed healed or latent processes, according to different observers, in from 40 to 90 per cent. That such lesions have not led to active and progressive disease during the life of the individual is owing chiefly to internal provisions for defense which constitute the natural resistance of the organism, a subject which I may not discuss at this time.

Under ordinary conditions, however, of vigorous adult health and vitality it is perhaps not presumptuous to regard the natural and uninjured protective agencies as quite effectual, unless the elements of infection gain entrance in extraordinary numbers.

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A PLEA FOR EARLY SURGICAL INTERFERENCE IN PELVIC INFECTIONS.*

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It is my purpose to deal with acute conditions mainly, as I believe the best results are obtained by attacking inflammatory conditions early. A few years back it was common practice to sacrifice tubes and ovaries lest a future laparotomy be required; and this effort at thoroughness deprived women of the function of menstruation, which is so intimately interwoven into their mental and physical wellbeing. It is better to conserve these organs, even if elaborate and hazardous procedures must be adopted.

A more thorough knowledge of the pathology of inflammatory diseases of the female pelvis, as well as of the different microorganisms causing structural change in these organs, has enabled us to be more conservative, by acting quickly, without any special danger of mortality. I do not intend, however, to advocate conservatism of special organs so far that the constitutional condition of women is endangered. There is a broader conservatism which seeks to restore the health of the patient, even if special organs be sacrificed to attain this end. Sentiment also plays an important part, as some women prefer to suffer untold agony rather than sacrifice any of their special organs. Such sentiments are perfectly proper and should be given due weight.

It is to this end that I make my appeal for early surgical interference in the acute infectious diseases of the female organs. Conservative operations may sometimes fail; and if so, radical procedures may be adopted later without any added risk to the patient.

The principal infections with which we must deal are gonorrheal, streptococcic, staphylococcic, colon bacillus, tuberculous, syphilitic, and others unclassified. Gonorrhea may at times be confined to the vagina by proper treatment, but, unfortunately, in a large percentage of cases a gonorrheal infection crosses the barrier (internal os) to the lymphoid lining of the uterus, and by extension through the tubes may involve the ovary. Here its destruction of tissue often produces grave conditions. For many years it has been customary in large hospitals to treat patients suffering from gonorrheal inflammation of the tubes by hot antiseptic douches, tampons, and ice bags over the lower abdomen until the acuteness of the attack had somewhat subsided. The tubes and often the ovaries were then swollen and engorged to such an extent as to be designated tumors, and they were ablated *in toto*. Early incision and drainage, I contend, would often conserve these organs, to the great advantage of the woman, even if somewhat damaged. The conservative work attempted was mainly to let out free pus in the cul-de-sac when the operator was convinced by the bulging of the posterior fornix that purulent exudate was present in abundance. The gonococci, when active in the uterine cavity, destroy the superficial cells, and, working their way into the deeper layers, cause a great amount of purulent exudate, destruction of outer layers with edema, and infiltration of the deeper structures, accompanied by congestion.

Unfortunately, after gonorrhea has once started within the uterus, it invades by continuity of tissue the Fallopian tubes. The deeper layers of the uterus may become the seat of such an active inflammation that the walls of the surrounding vessels and the surrounding lymphatic structures are involved; the normal structures disappear, and the interior of the uterus becomes a suppurating surface. Later, sclerosis ensues, followed by shrinking of the organ. This is frequently the case in mixed infections. The greatest damage, however, is done in the tubes, where the tissue is thin between the mucous and peritoneal surfaces and the mucous surface is lined by delicate ciliated epithelial cells, a direct blood supply from branches of one of the main arterial trunks of the pelvis. The germ here, as in the uterus, destroys by contact the superficial cells. The delicate ciliated cells rapidly succumb. The germs readily enter the deeper structures with the formation of pus cells, edema, and profuse cellular proliferation. As they approach the peritoneal surface a local peritonitis is set up with peritoneal exudate (nature's way of limiting the disease). As the infection approaches the fimbriated extremity of the tube the fimbriæ fold into the lumen, a local peritonitis results, and the tube becomes closed by agglutination of peritoneal surfaces. The lumen of the uterine extremity, being small, is closed early in the inflammation, as a rule, by intercellular proliferation. When both extremities are closed, what is generally known as a gonorrheal pyosalpinx results. If it be a true gonorrheal inflammation the thickening of the walls is greater in proportion than the fluid exudate in the preformed sac made by closure of the extremities. When mixed with colon bacillus we may have a tube greatly distended with pus and often free pus in the cul-de-sac. Occasionally one meets with a mild form of inflammation, caused by germs low in activity, where the exudate is only serous, with a little admixture of pus, forming what is known as hydrosalpinx. The walls are not much thickened, and are capable of much distention. The increased weight of the tube frequently causes it to sink down into the pelvis and drag down the other organs with it. In severe cases the tissue is deeply congested and very friable, because of an abundance of newly formed cells, which later, if allowed to go on, forms a closed pus sac, from which the woman must constantly suffer constitutionally, from the poisonous absorption. The ovary may also become involved and the whole process form one conglomerate purulent focus, plastered down in the pelvis by peritoneal exudate.

Gonorrhea may spread by direct continuity out through the tube rapidly and attack the outer tunic of the ovary, causing here, as it is prone to do elsewhere, a great amount of cellular proliferation, with the resultant thickening of the capsule, rendering rupture of the Graafian follicles more

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difficult and more painful. It may penetrate into the stroma of the organ, though the best authors have been unable to find gonococci in deep-seated ovarian abscesses. They are far more likely to form superficial inflammatory cysts, such as are seen beneath the outer coat of the tube, or cysts of the Graafian follicles, in which the thickening of the outer coat has prevented rupture. If, however, the infection becomes mixed, a tuboovarian abscess or a simple ovarian abscess may ensue.

Is it possible to prevent all this destruction of tissue which so often occasions the sufferer loss of her genital organs? I think it is, provided an early diagnosis of the extension of the disease into the tubes is made. Given a case of gonorrhea about the external parts, urinary, etc., and the glands of the cervix, certain symptoms should be carefully watched for—symptoms which indicate an extension into the tubes, viz., rise in pulse rate and temperature, though not at all necessarily a marked rise in either. The pulse seldom gets above 110 or the temperature above 103 degrees. Pain, which is fairly characteristic, is a better guide than either of the other two symptoms mentioned. It is at first spasmodic, radiating downward, and is due to the muscular contraction of the inflamed tube; later it becomes boring and constant because muscular spasm in the tube has ceased and the extension goes outward toward the peritoneal coat. Exudate forms between the intestines and omentum, lying close to the broad ligaments, interfering with peristalsis; bowel inactivity and tympanites result. On examination both sides of the pelvis are found to be tender to pressure, both externally on the lower abdominal wall and in the lateral fornices. Most likely the examiner will be unable to make out any mass, and it is all the more favorable to the patient if no mass be present, as its presence indicates a stage too late to accomplish the best results. Pain and muscular rigidity are sufficient evidence that the tubes are already involved. I think it unwise to carry the examination so far as to add trauma to an inflamed area. In appendicitis surgeons of to-day do not wait until they feel a mass in the right iliac fossa before they venture an abdominal incision, but, guided by certain significant symptoms (not so different from those described above, except as to locality), they at once open the belly and nip the destructive process in the bud, so to speak. Fortunately for the gynecologist, nature has afforded him a nonabsorptive drainage canal, through which he can go with impunity, and attack the inflammation above. Moreover, the pelvic peritoneum has a great resistant power.

Given the evidence from the symptoms of involvement of the tubes, and knowing from microscopical examination and otherwise that the lower canal was previously affected, to apply an ice-bag, give douches and narcotics, and wait until the acute symptoms subside, in anticipation perhaps of a future operation, is in contrast to surgical principles as taught to-day. One might as well recommend that a cellulitis or osteomyelitis of the extremities should be treated palliatively until an amputation is necessary.

Recently I operated on a case which demonstrated the evils of palliative treatment. The patient contracted gonorrhea about four months previously, and it quickly spread to the tubes. She was sent to one of the large hospitals in the city and for three weeks treated by various antiseptic douches and an ice-bag applied over the lower abdominal region. At the end of the third week she was allowed to get up and go home, supposedly cured. Later she came under the care of a physician who recognized the condition as a salpingitis. The left tube filled that side of the cul-de-sac and contained several ounces of pus. Scarcely any normal tissue was left in its walls, and it formed one large pus sac, which was removed. The right tube, not so seriously affected, was treated more conservatively. I venture to say that if this girl's tubes had been opened and drained during the onset of the disease she would have retained her organs, though somewhat damaged, been free from a local peritonitis, and happy, instead of being, at the age of 19, with part of her genital organs removed and with only the hope that the remainder may undergo sclerosis.

The operation is a very simple one, though it requires a thorough knowledge of the female pelvic anatomy and careful manipulation of special instruments. An incision is made on the posterior surface of the cervix, at the juncture of the vaginal and cervical mucous membrane. Care is taken to keep close to the cervix, where the fold is easily seen. Care should also be exercised to make the incision at this point. A pair of blunt-pointed scissors, curved on the flat, are best adapted for this purpose. An incision cut in the curve of the fornix is apt to have a painful scar resulting, as the nearer we approach the rectum the greater the sensory nerve supply. After incising the mucous membrane and retracting the divided edges, a small amount of loose alveolar tissue, most marked in women after menopause, is seen, which is easily divided. With the back of both forefingers together and the palmar surfaces looking laterally, the opening can be enlarged, the uterosacral ligaments being carried outward on the palmar surfaces of the fingers, and the intestines being carried out of the way by means of the Trendelenburg position and held there by abdominal pads. The tubes are easily brought into view by means of proper instruments for retraction. If this procedure is adopted in the very early stages, the tube will be found reddened, swollen, and with a tendency to sink down into the cul-de-sac. It should be grasped on the dorsal surface with a pair of modified Hunter's forceps and pulled down into the opening. Let us pause for a moment and consider the blood supply of the tube. It, like the ovary, except at its uterine extremity, is fed by small ascending branches from the ovarian artery, which enter the structure from the lower surface; consequently whatever incision is made should be on the opposite side.

Care being taken to keep the intestines well walled off by pads, the tube is incised along its outer two-thirds on the upper border, the contents evacuated, and the whole surface swabbed thoroughly with 5 per cent. iodoform gauze. At first there will be considerable tissue oozing, which gradually subsides, no main vessel having been cut. A small strip of iodoform gauze is placed on the raw surface, the other end protruding into the vagina. The first effect is to reduce the interstitial cellular infiltration, as it is a well-known fact that the gonococcus does not thrive well on exposed surfaces, its natural abode being in the deep recesses of compound racemose glands; secondly, it drains off all the exudate from the mucous surface of the tube. The uterine extremity, during the first period of attack, drains into the uterus, as the spasmodic contraction of

this portion tends to keep it open. As the deeper structures are merely muscular, they become infiltrated, edematous, and early undergo sclerosis, with resulting constriction as a sequence. Almost invariably a stricture is found from 1-2 to 3-4 of an inch from the uterine extremity in cases of pyosalpinx of long duration. The gauze can be removed with safety in from five to six days from the cul-de-sac, as the life of the gonococcus is very short except in racemose glands and closed sacs. We prevent by this method the formation of large pus sacs or deeply infiltrated tubal walls with subserous cysts and adhesions and probable ovaritis, the remote effect of which is to produce a mild toxemia, with oftentimes the production of kidney lesions. Again, it is well recognized that patients absorbing pus are prone to contract pulmonary tuberculosis in their depleted condition, as well as a localized infection of the tubercle bacilli in the former site of a gonorrheal invasion.

Why should we wait until a large abscess has formed or the walls have become so thickened as to form a tumor of such size that extirpation is the only method of relief, when it is possible to accomplish as early reduction of the inflammation with a partial restoration of tissue? Of course, we cannot hope for a normal tube as a result. I do not believe that any tube which has been the seat of a purulent gonorrheal disease is ever left patulous with the cilia capable of performing their function; but by an early operation it is possible to save the organs and allow the woman to menstruate, and to hope for motherhood, which instinct even the prostitute hates to abandon.

The old idea that to enter the peritoneal cavity in the presence of an acute inflammation was equivalent to inviting death, is not borne out by experience. Out of a series of nearly fifty cases operated on by the late Dr. Pryor, in which I assisted, and in those performed by myself, not a single one showed any tendency toward peritonitis. In fact, I have never seen a case of pure gonorrheal general peritonitis. Out of this series of cases, over 50 per cent. were cured: I mean by "cured" the tissues involved underwent sclerotic changes and no evil symptoms followed. This was especially true of women in the better walks of life, where time, care, good nursing, and general conditions favored the return of full strength before resumption of marital functions. The remainder either did not treat their condition seriously or immediately went back to their original source of infection, or some other, and were reinfected. Still others subjected themselves to traumas of all kinds, trauma of coitus, etc., which has a bad effect on a recently infected area.

In cases where the inflammation has been under palliative treatment for a long time and is seen late, presenting upon examination a large pus sac, conservatism cannot be adopted with any degree of success. The changes effected are already too great to hope for any marked degree of restoration. Some advise opening through the cul-de-sac and later removal of affected area, which is about all there is left to do, no matter which method is adopted. The same holds true of tubes with very much thickened walls, with perhaps a small amount of succulation, the whole mass with quite a large per cent. of ovary included surrounded and bound down by peritoneal exudate. Removal under such conditions I believe advisable in the interest of the future health of the individual, as conservatism is misapplied in trying to save something which is certain to deteriorate the patient's vitality. Space will not allow discussion of the various methods of removal. Vaginal versus abdominal route has been discussed often enough already. One point I would like to mention, however, and that is that it is very easy to remove the tubes through the vagina and leave the ovaries, if they are in good condition, without in any way affecting the arterial blood supply. This is done without the use of a ligature, by means of a modified Skene's electrocautery clamp. The tube having been freed and brought down into the opening in the cul-de-sac, the clamp is applied close to it, including the folds of the broad ligament and the vessels contained therein. It is applied progressively to the cornua of the uterus. The most practical degree of heat to obtain is about 180° F., and this is kept up from two to three minutes. One can judge by the appearance, however, when the procedure is complete, by watching closely the tissue on the side of the clamp. At the moment it blanches white the current should be turned off. The viscera above are easily protected by means of a pad wet in cool sterile water. This method has two advantages: first, it does away with the presence of ligature material in the purulent field; second, it sterilizes the field to a certain extent and devitalizes the nerve endings, thereby lessening postoperative pain. To know just when to turn off the current is the result of experience in using the instrument. If properly applied, it does not cause slough to any extent, but more of a cellular healing process. Anyone who has ever experimented with the instrument must have been thoroughly convinced of the efficiency of this method so far as hemostasis is concerned. It is difficult to rupture a bullock's artery with a powerful syringe at the point where the application has been made. This experiment I have tried many times. I have seen several vermiform appendices removed by applying this instrument to the base, with good success.

If one has to deal with a case in which the interior of the uterus is badly infected, involving the deep layers, with the tissue changes which must occur, as well as the tubes and ovaries hopelessly diseased, I cannot see what is to be gained by leaving any of the tissue. The tissue left cannot functionate, and it invariably produces morbidity in the patient. Ablation, in my opinion, of the pelvic organs in the interest of the woman's future health is the logical method. I am fully aware some advise leaving the cervix, or at least the vaginal portion. In the first place, it is the seat of chronic inflammation of its compound racemose glands; secondly, it is not a center of sensation, as its nerve supply is sparse and it contains no erectile tissue; thirdly, I have seen women who suffered for months from a diseased cervix which had been left; fourthly, three cases of cancer have come under my observation at this site after removal of the rest of the pelvic contents. I have never been able to see why we should leave a diseased uterus after removing both ovaries and tubes.

We will pass now from an infection which spreads by continuity with tendency to become localized in the pelvis (though we sometimes have to deal with gonorrheal rheumatism and endocarditis) to one which rapidly spreads through the lymphatics and blood-vessels, producing general peritonitis. The one is feared for its local tissue destruction and the resulting morbidity, the other for its rapid and frequent cause of death. The

subject of staphylococcic and streptococcic infection after abortion or labor has been often discussed, and I simply bring it up as an instance, to show that early surgical interference in the pelvis in such infections has been proven to be a success. In such cases one has to make a diagnosis early and act quickly, or the postmortem will reveal the mistake.

The symptoms depend mainly on two factors, viz., the individual resistance of the patient and the virulence of the infecting germ. If the germs are very active and tissue vitality low, the course of the disease will be very short, only a matter of hours, especially in cases after the second or third month of gestation. On the other hand, the more marked the lesions we find, the greater the evidence that nature is doing her best to combat the enemy. It can be confounded with only one other condition by any intelligent physician, and that is sapremia. The microscope comes to our aid in doubtful diagnosis, though there is a wide difference in the symptoms of the two conditions. A septic condition may follow a sapremic one and the symptoms of the one run into the other. In sapremia there is usually a profuse, foul-smelling discharge, dark and often clotted, while in sepsis we find a thin, scanty, watery discharge. The onset of sapremia is marked by a rapid rise in temperature, full, bounding pulse, not usually above 100, resembling the early stages of pneumonia. Sepsis, on the other hand, is not apt to produce high temperature, but the circulation suffers from the overwhelming effect of the toxemia. The pulse runs up to 110, 120, 130, 140, and higher, and is soon characterized by its feebleness. The pallor, pinched nostrils, and herpes labialis are quite in contrast with the flushed cheek of sapremia. The one woman strikes us at once as being very sick, and feels so; the other does not suffer much, except the discomfiture of a high temperature, and often wonders at the anxiety of her attendant. The microscope again comes to our relief in making the differentiation. In sepsis the blood shows a marked increase in leucocytes, except perhaps in the very worst cases, where nature has been overpowered in the very beginning; the lochia almost ceases or becomes only a little watery discharge. The infection, starting at some focus in the uterine mucosa, usually the placental site, spreads rapidly through the sinuses and lymphatic channels of the uterus outward into the broad ligaments. The walls of the uterus become soft and edematous. The broad ligaments thicken from the swollen lymphatics, which often contain septic thrombi. There will be a sero or serosanguinolent exudate into the cul-de-sac. If this exudate be pus, the prognosis is better. It is seldom sufficient to cause any marked bulging of the fornix. Oftentimes we find membranous patches in the vagina and on the cervix, which in appearance resemble a streptococcic tonsillitis. The lymphatics of the external genitalia connect with the chain above in the pelvis, as Dr. Cermault demonstrated, hence the care that should be taken to keep lacerated surfaces surgically clean. Examination occasions very little pain and does not reveal any tumefied mass in the early stages. The broad ligaments give to the examiner the impression of fullness. Quite in contrast to the local pain in acute gonorrheal salpingitis, patients suffer more from abdominal distention than anything.

The operative procedure differs from the one described in acute gonorrheal cases, as the pathology differs. After the uterus has been curetted and packed with iodoform gauze to drain the lymphatics beneath the mucous surface, the cul-de-sac is opened.

Owing to the fact that we have to deal with the whole of the broad ligaments and posterior surface of the uterus, and not with the mucous surface of tubes, simply opening the tubes would not be sufficient; and again, the serous surfaces of the tubes are first attacked. If operated upon early, the resolution which follows leaves a patulous functionating tube, proven by children born to women after this operation. The very fact that we find fluid in the cul-de-sac indicates that the surfaces are attempting to drain themselves. If we open the cul-de-sac and pack it properly, we assist nature in three different ways: (1) by affording drainage; (2) presence of local antiseptic, which is absorbed constitutionally, as shown in the urine; (3) isolation of the infected organs. Iodoform gauze, 5 per cent., recrystallized, acts best. The packing should be done by special instruments, in such a manner that the posterior surface of the uterus and broad ligaments are separated from the intestines, making a dam of gauze across the pelvis. If this procedure is carried out early it not only means a life-saving one, but insures quick resolution of the inflammatory process and a restoration to normal tissue.

Purposely I refrain from mentioning cases after childbirth which manifest malarial symptoms, and the diagnosis as well as the complications of pelvic sepsis, such as pneumonia, endocarditis, arthritis, multiple abscesses, etc. Time will not allow it.

One point I would like to lay stress upon, and that is, greater care should be taken to keep the emunctories active, especially the kidneys, which suffer from the toxins. Saline infusions and enemas should be employed vigorously to obviate this result. Patients with a low form of infection, who are constitutionally strong, put up a good fight, but the infection may work its way outward and produce multiple abscesses in the broad ligaments and perhaps in the ovaries. Simply opening the cul-de-sac and draining is toying with the condition. What is needed is wide dissection to the brim of the pelvis, thorough packing, and drainage. If the deep structure of the ovary contains an abscess, nothing avails but removal.

Again I ask, why should we allow the process to reach this stage?

In conclusion, the beneficial results of this treatment are obvious: there is practically no mortality, and its curative effects, if cases are operated upon sufficiently early, can be proven by the histories of one hundred of my cases.

32 West Thirty-sixth Street

Sprays of Ether and Chloride of Ethyl in the Treatment of Malignant Pustule and Lupus.—Gattone Vincenzo has tried the effect of sprays of ether and ethyl chloride on pagerms that have a low resistance to cold, with the view that the freezing, combined with the antiseptic effects of the drugs, will aid in the cure. He has made use of this treatment in two cases of lupus vulgaris and five of malignant pustule with ether, and two of the latter with chloride of ethyl. The results with malignant pustule were excellent. In advanced cases it is best to make two or three incisions before spraying the ether on. With moderate curettement of the ulcers it gives good results in lupus. The treatment produces a marked reaction in the tissues, congestion, afflux of leucocytes to the part, and increase in the nervous and vital energies of the cells. The method is easy of performance, not painful, rapid, and has good cosmetic results.—*Rivista Internazionale di Terapia Fisica.*

RESULTS IN ROENTGEN THERAPY.*

By CHARLES LESTER LEONARD, A.M., M.D.,

PHILADELPHIA.

Clinical results, as compared with other methods and agents, are the standard by which any new method or agent is finally judged. Each passes through a series of reports, pro and con, before it establishes itself by this final test. Many remedies have fallen far short of what was expected of them. Many have fallen altogether out of sight. As often happens in the early enthusiasm of a new discovery, hyperenthusiasm and a lack of scientific observation and judgment lead to extravagant claims. An agent like the Roentgen rays, at the same time mysterious and yet powerful in its action, tends to produce exaggeration and readily lends itself to the selfish exploitation of quacks and charlatans.

Much has been claimed and much attempted by those who had neither knowledge nor skill to apply this agent, or to appreciate the good results or failures it produced. Many reputable physicians have been beguiled into believing that they could produce good results, without giving the subject the necessary time and study, if they possessed a machine.

The failures resulting under such circumstances cannot be attributed to inefficiency in the agent or the method, and yet many of the failures to cure, what are demonstrated to be curable conditions, have been due to such causes. They are not reasons why this agent should be discredited or depreciated, or its study and employment abandoned by ethical practitioners.

It is undoubtedly a powerful therapeutic agent, which has its place in legitimate therapy and must be developed along scientific lines to attain its true value. It has only a place in therapeutics, and must be used in conjunction with other known remedies and methods to attain the best results, each being given that importance which experience in the conditions to be dealt with indicates.

There is possibly an optimism among Roentgenologists that lends credence to the supposition that they consider this remedy a panacea. Their willingness to attempt to relieve suffering or to try this new remedy in chronic and rebellious cases, would tend to indicate this. It has served to saddle the Roentgen method with the failures and mortality that belonged to inefficient agents and methods previously employed. There is a rational excuse for this optimism and readiness to try this new remedy in varied fields, and it is not as irrational as might at first appear. The Roentgen rays do not act through systemic absorption; they act in a purely local manner, stimulating the metabolism of the part treated and assisting nature to combat the disease by increasing the activity of normal cells, while decreasing the vitality of pathological tissues. Since this action is purely a stimulant and adjuvant to the natural processes of resistance and repair, it is difficult to limit the scope of its application. Roentgen therapy is therefore not to be charged with all the failures in cases where it has not been primarily employed. It would be very difficult to determine what percentage of these failures were due to inefficient Roentgen treatment, to the stage of the disease when submitted to treatment, or to the inefficient remedies or operations that had preceded it. The factor of inefficient Roentgen treatment is one that covers a large percentage of failures, and is difficult to deal with where so new a method is concerned. Reports that emanate from inexperienced operators receive as much credence as those of the expert, and the medical public has no way to differentiate the expert's opinion from that of the novice.

It is very important that the profession learn to judge and evaluate these reports, for not only is the Roentgen method injured thereby, but the safety of patients placed in inexperienced hands is also endangered.

The greater credence is always given to reports which chronicle failures. The scientific reporter is willing to report his failures as well as his successes. The ability rather than the veracity of a reporter should be questioned in a series of cases where his results fall far short of others of known veracity and standing.

In a method in which technique is so important and yet so difficult to attain, each success far outweighs many failures, because it shows that the method and agent, when properly employed, are capable of producing satisfactory results and that the failures are therefore due to defective technique or lack of knowledge in its employment. The results of Roentgen therapy must therefore be judged by the successes that have been attained in its employment.

As has been said above, it is of the utmost importance that the medical public learn to judge of the men competent to employ this great therapeutically if they would place their patients in safe and efficient hands for treatment. This method has been employed successfully for over a decade for diagnostic and therapeutic purposes, and there are those in every large community who have demonstrated by their results their ability to employ it with special accuracy and efficiency. It is no longer necessary to entrust its employment to inexperienced hospital residents or unqualified electricians and manufacturers.

Its use by such persons for diagnostic and therapeutic purposes has been shown to be not only inefficient and inaccurate, but often also very dangerous. This has recently been shown very conclusively by the work of Edsall who says of it "that it is undoubtedly the most violent known agent for therapeutic purposes and that this demonstrates, both great possibilities for good and great potentialities for harm." This warning, given out by Edsall, as the result of his investigations into the effect of this agent upon metabolism, has frequently been misquoted to mean that Roentgen ray applications are always dangerous and that more than ordinary care should be used in recommending or employing them. The danger he sees and is warning against is only in cases where the excretory and eliminating organs are pathological and incapable of caring for the products of increased metabolism resulting from effective Roentgen treatment. His observations have shown "that one exposure even may double the metabolic output in the next few hours; and, clearly, the necessity for metabolizing and excreting such an amount of destroyed tissue must be dangerous in a good many instances."

It undoubtedly would be dangerous in cases where the excretory organs are the seat of disease, and careful examinations for such defects should be made before referring any case for treatment and a report should be made of the findings. It is, however, of more importance

*Read by invitation before the Allegheny County Medical Society, at Pittsburg, October 16, 1906.

that the patient be referred to a Roentgenologist whose education and experience fit him to judge of the effects produced on metabolism and how to guard against and combat them.

Every Roentgenologist of experience has broken down masses of malignant disease that have necessarily been absorbed and has seen the effects of increased metabolism and the resulting toxic condition which will even put a patient to bed. He had recognized the danger long before the careful work of Edsall showed the increased metabolic output in the excreta. He had learned to employ this condition as a sign of efficient dosage, *i.e.* that pathological tissue was being destroyed and metabolism increased and as a warning that treatment must be suspended till the system recovered its equilibrium. The cases cited by Edsall are chiefly those of gouty and arthritic subjects, where the excretory and metabolic functions are commonly disordered. The increased stimulation of metabolism would undoubtedly throw a heavy load upon the kidneys with a possibility of an overload. Such conditions should be treated with the utmost care. An illustration of a favorable result in such a case occurred in the person of the wife of a prominent Philadelphia physician. She had been suffering for two years with a painful gouty and neuralgic condition of the jaws, with loosened and tender teeth precluding the use of solid food. Three mild treatments resulted in a uric acid crisis which put her in bed. When she recovered the tenderness in the teeth had almost entirely gone, and a few careful treatments sufficed to effect a cure.

The results in somewhat analogous conditions of neuralgia were reported by me at length before the Philadelphia Neurological Society. I was led to the employment of this method in neuralgias by the relief afforded from pain, in cases of malignant disease. My results since that time have been as successful, though not uniformly so. The reason for the variation in effect has not been determined, but may find its explanation in the causal factor, the neuralgias due to faulty metabolism being those to yield. Severe cases of tic, migraine, and persistent neuritis have been among those to yield so far permanent results for from one to three years.

The result in superficial lesions, the chronic and relapsing cases of skin disease, you have probably had demonstrated to you until you know where to send them for relief. The more you have this method employed in the earlier stages, the more you will appreciate it.

Of the results in the deeper seated lesions of malignant and glandular disease I wish to speak more at length. Particularly as the surgeons have recently demonstrated the efficiency of treatment in complaining of the increased difficulties which they find in operating after thorough Roentgen treatment. In a paper in the June issue of *American Medicine* I briefly discussed the findings and reports of cases made before the Philadelphia Academy of Surgery. It was there shown that it had been clinically demonstrated that the conclusions of Roentgen experimenters as to the degree of susceptibility of various structures was correct; that is, that the lymphadenoid or tissues of low vitality are first affected by the rays. All the clinical reports showed that in cases of tuberculous adenitis and malignant mammary disease, that had been treated by Roentgen rays previous to the operation, the lymphatic channels were found to be converted into solid cords, and furthermore that these cords rendered operation more difficult.

One result clearly demonstrated therefore of Roentgen treatment is the conversion of the lymphatic channels "into solid cords." This destruction of the lymphatics means the isolation of the foci of disease, the destruction of the paths through which metastasis or the spread of the disease could take place. What more can we ask than the localizing of disease whose danger lies in its spreading through lymphatic channels? What more forcible demonstration of results than those reported clinically and unanimously by surgeons? In the presence of such unsought testimony who can doubt the propriety of at least antioperative treatment by the Roentgen method, as a preparatory measure. If, as stated in the case then reported, twenty-eight treatments will convert the lymphatic channels into solid cords, should not every case be submitted to an effective course of such treatment before operation? The operation does not destroy the lymphatics, and in the vast majority of cases metastasis and recurrence follow operation. And we might further add if Roentgen treatment will destroy the channels for infection and localize the disease, what is the need for extensive operation?

Finally, the palliative value cannot be overlooked. Malignant disease too frequently comes for treatment too late, or incomplete operation results in recurrence. In fact, cures by whatever means are only too rare. The value of a method which certainly retards the progress of the disease, prevents external ulceration, and relieves pain is undoubted. To every patient suffering from inoperable malignant disease this agent offers a promise of palliation that cannot justly be ignored.

I have not attempted to enter into a detailed statement of cases and conditions in which results justify the value placed upon the Roentgen ray as a therapeutic agent. I have pointed out the facts that the good results only are a criterion of the efficiency of a new method and that they are to be compared with those obtained by other methods. That *a priori* we should expect such results as are obtained, because the rays have been shown to produce a marked increase, and even to double metabolic activity. That it is therefore one of the most powerful therapeutic agents that we possess and must be administered with caution and only by those educated and competent to observe its physiological action. I have pointed out the confirmation of experimental studies by clinical experience, demonstrating that this agent acts primarily upon the lymphatics, destroying them first and localizing the disease; preventing any spread or metastasis. This is a demonstration that makes it essential that every patient suffering from a disease which spreads by the lymphatics should be subjected to a series of anteoeprative treatments, if indeed operation eventually proves to be necessary.

I have finally pointed out the very valuable service which this agent renders as a palliative, and how it lengthens life and alleviates suffering in those malignant diseases in which the term cure seems justified only after the patient's death from some other cause and in which the actual mortality presents most convincing evidence of our scientific ignorance.

112 South Twentieth Street

REPORT OF A CASE OF CEREBROSPINAL FEVER.*

By W. O. WILKES, M.D.,

WACO, TEXAS.

J. G., aged ten, a healthy son of healthy parents, waked up February 14, 1906, about 4 A. M., complaining of "stomachache," and soon afterward vomited. His mother thought it indigestion and began giving him calomel. Soon after 5 o'clock he had a slight chill, followed by some fever and aching of his limbs and back. About 11 o'clock his father came to my office with this report, and asked for a prescription, and I gave him some euquinine in syrup of tolu. About 8 P. M. he telephoned me that the boy was vomiting occasionally and complaining of headache, the calomel was acting freely, and I told him to discontinue the euquinine, and sent some phenacetin powders for the headache. I heard no more from him until the next morning, when I went to see him and found him with a temperature of 100° and pulse 90, some headache and nausea. Still I thought it simply a case of grippe and gave some little powders for nausea and told him I would call again after dinner. At 2 P. M. I found a pulse of only 84 with a temperature of 102.5°, quite a disproportion, you see; the fever had gone up and the pulse had gone down. His abdomen was retracted, head somewhat drawn back, he was slightly delirious, and had a wild, pained look about the eyes, with slight incoordination of the eye muscles. All over his body and limbs there were numerous purplish brown spots from the size of a pinhead to the size of a pea, and a few much larger. Kernig's sign was very decided. That afternoon the patient was seen with me by several physicians, and the diagnosis was positive in the minds of each of us. At 8 o'clock his pulse was 80, temperature, 99.5°, some tendency to opisthotonos, and general hyperesthesia, and slight inequality of pupils, the right being contracted and the left about normal. He was given potassium iodide and ergot internally and enough morphine hypodermically to relieve the pain; icebags to the head and spine. A few doses of bromide and chloral were also administered to produce sleep. His pulse was very irregular, running at the rate of 120 for a few seconds and then dropping to only about 50 at other times, but averaging about 80 to the minute.

Third day, 8 A. M., pulse, 95, temperature, 100°; 2 P. M, pulse, 124, temperature, 101°; 8 P.M., pulse, 67, temperature, 100.5°. This slow pulse is considered a very unfavorable prognostic sign, and shows pressure. On this morning we did a lumbar puncture and drew out about an ounce and a half of turbid cerebrospinal fluid. After this the pressure symptoms were relieved, the pulse went up to about a normal ratio with the temperature, the pupils were alike, and the child slept for about two hours; then all the pressure symptoms gradually returned, and with increased intensity. The pulse dropped from 124 to 67 in a few hours; there was more opisthotonos, restlessness, jactitation, and irregular pulse. Bacteriological examinations of the spinal fluid showed the *Diplococcus intracellularis meningitidis* in abundance. A culture on blood serum developed them by the million in apparently pure culture. One specimen showed a diplococcus outside of a cell, and it was encapsulated—the *Diplococcus pneumoniæ*. This evening we dropped the iodide and injections of morphine and put him on bromide, gelsemium, and ergot, repeated every two hours.

*Read before McLennan County Medical Society, July 3, 1906.

Fourth day, 6 A. M., pulse, 124, temperature, 101°; 2 P. M., pulse, 90, temperature, 100.8°; 6 P. M., pulse, 90, temperature, 101°. The spots are beginning to fade. Icebags continued; hypodermics of morphine still needed occasionally. He is nourished with egg albumen and milk.

Fifth day, 7 A. M., pulse, 156, temperature, 102°; 9 A. M., pulse, 136, temperature, 101°; pulse very bad in character. We put him on fifteen drops of tincture of digitalis every two hours until it shall affect the pulse. He was also blistered over the spine; had the worst day and night since the beginning. In the afternoon his fever began to run high, 104° to 105°, necessitating frequent baths. His bowels have been acting every day, but he now has some difficulty in passing his water; it is diminished in quantity and passed only after much restlessness and great effort.

Sixth day: This morning an enema brought away a quantity of dark, soft, foul-smelling feces, besides a number of hard, dry scybalæ; his fever went down at once, and he slept quietly for several hours. Pulse from 116 to 128. The bromide and gelsemium have been continued, but at three to four hour intervals; digitalis the same. The eyes are much inflamed and the nose is discharging.

Seventh day: Fever troublesome again, 104° to 105°. Bowel irrigation, sponge baths, and ice water to head, keep it down only a small part of the time. Kidneys acting a little better. Nourishment, white of egg and milk punch, which he takes pretty well. Pulse from 130 to 140, and very bad in quality. The spots have disappeared.

Eighth day: Temperature about as yesterday, and pulse still weaker. The bromide, gelsemium, and digitalis were dropped and iodide and ergot substituted; hypodermics of morphine and strychnine were given at six-hour intervals, although strychnine is theoretically contraindicated in this disease. His pulse began to improve, however, and the strychnine has been continued at lengthening intervals. The rapid changes in his temperature are surprising; the desire to urinate, which is not quickly accomplished, will increase the fever one or two degrees, to go down again soon after it has been voided. Once his temperature was 104.5° and preparations were being made for a bath when his bowels acted; his temperature was taken again immediately, and it had dropped two degrees. There is considerable jactitation and the head is drawn far back.

Ninth day: He is better in every way; pulse, 120 to 130, temperature, 101° to 103°, and more easily reduced. Is a little more rational, complains very much of headache when not under morphine. Kidneys acting freely, food readily taken, panopepton added to diet. Eyes still inflamed.

Eleventh day: Pulse, 118 to 125; temperature, 101° to 103°. Milk has been dropped on account of fermentation and malted milk substituted.

Thirteenth day: Condition has been about the same for the last two days. Morphine and strychnine have been discontinued; nourished as before and icebags applied to head. Is more rational and fretful. Bowels have to be moved with castor oil. Iodide and bichloride were given, with the hope of hastening absorption of inflammatory products.

Sixteenth day: Condition not so good to-day; had a very restless night; cries and complains of headache all the time, and bromide was added to his medicine. Temperature 101° to 103° all the time. Pulse good, from 115 to 120. The amount of whiskey has been reduced from three ounces in the twenty-four hours to less than half an ounce.

Turns himself in bed for the first time and can lie on his back. Eyes still irritated.

Eighteenth day: Had a violent headache yesterday, requiring repeated hypodermics for its relief; continued for about twenty hours.

After this every two or three days he would have an agonizing headache for a few hours, necessitating large doses of morphine. I have given him three-fourths of a grain at a dose under the skin several times, and as much as two grains in a few hours. It seems to me that any attempt to give him either bromide or iodide increased both the frequency and severity of the headaches. With the exception of these headaches his convalescence was uneventful—except for one attack of heart weakness following acute indigestion about the fortieth day, when for two hours I thought he was gone. He was in bed for seventy days, and his return to a normal diet was very slow on account of weakened digestion. He had no sequelæ except a weakness of the eye muscles, which caused his eyes to tire very quickly and occasionally gave him an appearance of strabismus; his oculist assures him, however, that he will recover from that condition in a short time.

I do not know that this case will teach you anything, but it has me. I have arrived at some definite ideas regarding the treatment of this disease during the ten weeks that I studied it and the literature bearing upon it. These conclusions may not be well founded, but they are certainly deeply grounded, and, briefly stated, they are as follows: I do not believe that iodide, bromide, bichloride, or gelsemium have any beneficial effect whatever, and, in fact, I thought were harmful in this case. Ergot may have a limited usefulness, chiefly to aid the quieting effect of the morphine and as a heart stimulant. I believe blistering is worse than useless, and adds an element of irritation and pain, if not weakness, to a sufferer who already has a grievous burden of each to bear.

The chief indications are morphine hypodermically and icebags to the head and spine. Of course the beginning of treatment should be prefaced by a good calomel purge. Possibly small doses of chloral by the bowel or internally will help if the morphine does not produce sleep. Spinal punctures for diagnostic purposes and to relieve pressure symptoms I am sure are beneficial, and in another case, especially with parents in a different walk of life, I would do more of it. Nourish with albumen water and solutions of peptones; milk, if well borne; later use stimulants freely, as indicated, and I am not afraid of strychnine or alcohol in these cases if the heart seems to need support. The thing to do is to relieve pain, support the patient, relieve pressure if possible, and trust in the *vis medicatrix naturæ*.

The New York Department of Health quarantines meningitis for two weeks, the Waco Board of Health indefinitely. Now, my contention is that there is no more reason for quarantining cerebrospinal meningitis than pneumonia, erysipelas, influenza, or any other infectious disease. The evidence as to the contagiousness of pneumonia is immensely greater than that of meningitis, and the susceptibility of the human family to pneumonic infection is still greater.

Here was a case of great violence, shut up in a house for ten weeks with four adults and five children of varying ages, and no one else on the place showed any symptom of the disease. The fact that there were four or five other cases in the city at about the same time caused some uneasiness as to the possibility of contagion, but there was none traceable.

A cow on the premises was taken with "blind staggers" during the time and had to be killed, but its body was disposed of before an examination of its cerebrospinal system was thought of. If "blind staggers" is really meningitis, as is claimed, this was a valuable opportunity neglected, for some authorities believe that the infection of cerebrospinal meningitis is transmitted to man from domestic animals; but there is no evidence that it has ever been transmitted from man to animals. This cow's meninges certainly should have been examined in this case. Ia may have been merely a coincidence, but it looks as though this may have been an instance of transmission.

Typhoid and paratyphoid fever are dangerous diseases and communicable. Why not quarantine? Tuberculosis will attack anyone at almost any time. Dysentery is infectious; so are erysipelas and all streptococcic infections; puerperal fever is a terrible infection. Syphilis is extremely contagious. Gonorrhea causes probably as many deaths, and certainly a thousand times as much human suffering and unhappiness as meningitis; and here I will say that I believe that gonococci, pneumococci, and meningococci, and, in fact, all diplococci, are the same, differing sometimes in appearance, and often very much in behavior, according to the infinite variety of physical surroundings; environment, you may say. Heredity is a powerful force, but who is there who can say that environment is not still more powerful?

The origin and variation of species are going on about us all the time. It took centuries of weather conditions, environment, aided probably by artificial selection, to develop the shaggy Newfoundland and the hairless Mexican dog from the original wolflike domestic dog. It required many years of artificial selection to develop the fantail and pouter pigeons from the rock pigeon. Luther Burbank produces the most wonderful fruits and flowers in one or two seasons. The life cycle of low microorganisms may be only a few minutes or a few hours; why may they not undergo wonderful changes in appearance or behavior in a few days? The bacteriologist can, in the laboratory, increase or decrease the virulence of many of them at will; and I believe that environment can cause them to change and interchange characteristics, and possibly develop new forms in a short time. And then, too, we may have mixed infections. The supposedly harmless *Micrococcus catarrhalis* morphologically cannot be differentiated from the gonococcus or pneumococcus at times, differing from them only in its behavior toward culture media. Cases of meningitis have been reported in which the meningococci have looked so much like gonococci as to be indistinguishable. It seems to me a matter easy of belief that all diplococci, by whatever name they may be called, are of the same species, meningococci, pneumococci, gonoccoci, and all the others being only varieties, or, at most, very unstable subspecies; and from this it is but a short step to believe that *all* cocci are practically the same, differing only according to environment, culture media, the presence of other germs or toxins, and an infinite variety of circumstances that may affect them in ways known or unknown at the present time.

It seems folly to me to quarantine cerebrospinal meningitis and disregard pneumonia and numbers of other infectious diseases that are known to be communicable.

WHEN TO USE MEDICINES IN PNEUMONIA.*

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The title of this paper suggests, as the writer desires, that there are some cases of pneumonia requiring nothing but intelligent and systematic guidance and nursing, and other needing little medicine, but needing it promptly and energetically when called for.

It is a matter of surprise sometimes how well some individuals bear pneumonia. We have all had patients who have successfully weathered the storm in two or three attacks. Before beginning treatment, as well as before giving a prognosis, it is well to try and balance up the good and bad conditions which confront us. What is the condition of the heart, the kidneys, the liver? Is the patient tuberculous or does pregnancy complicate the case, etc.? It takes very little in pneumonia to cause us to be heavily handicapped. When the disease occurs in either extreme of life; the infant's life may be cut off in a convulsion, the octogenarian's may go out like a flash. A profound pneumonic toxemia will call forth all our aid to combat and woe to the patient if his life has been spent more at table d'hôte and with the wine merchant than at the frugal and simple table. There is no more unsatisfactory class of cases to attend than those who have worshiped Bacchus as one of their gods and fall a victim to pneumonia. Pneumonia is often the Good Samaritan to the inebriate and the benefactor to his friends, as it quickly and with short pain hastens him into the coma of rest and cuts short a career which could bring but sorrow and suffering to his family and friends.

Given digitalis, strychnine, and ice with the various uses, and you need little else even in your most trying cases. There is no question that many cases are lost from too much meddling in many ways. How often do we start strychnine on our first visit for no other reason than perhaps it may be needed the next day, or that we think we must give something. Quiet and rest, good ventilation, unloading of the bowels, a variety of liquid nourishing food, the ice bag to the chest in the region of the pain and congestion and one also over the precordia, if need be, is a good way to start with nearly all cases of pneumonia. 'Tis granted that there are some cases of the sthenic type, with bounding and laboring heart, high fever, pain and restlessness, and great dyspnea, in which the withdrawal of blood has been the only thing which would save life. Other most trying and often unsatisfactory cases to treat are those of pneumonia, as has been referred to, in the steady or hard drinker. Here the heart may begin to lag almost before apparent congestion and consolidation; the pulse becomes soft and compressible, the face ashy, the patient is restless, soon delirious, the temperature may not be high, but there is an impending toxemia which is and will continue to show itself in weakening and overpowering the action of the heart and the vasomotor centers. Such cases as these need digitalis and strychnine early to support the blood-vessels, bromides to quiet the restlessness, and salt solutions by hyperdermoclysis or enemata to raise the blood pressure and dilute the toxins. There is no more satisfactory way of keeping up proper elimination and sustaining blood pressure than the use of frequent saline solutions. There are many cases of pneumonia complicated with parenchymatous nephritis, which one feels quite confident were saved through this treatment.

The writer has a great repugnance to the use of opium in pneumonia, and feels that most of the cases he has lost may have been from the injudicious use of opium. There is little more needed for the cough and pain than the ice bag, but should there be, and the patient is, besides, restless, it is seldom necessary to give more than the one-twenty-fourth of a grain of morphine with fifteen grains of bromide once or twice in twenty-four hours.

In an extensive hospital ward practice many of the remedies which are suggested at the present day have been used only to be soon abandoned. There is no question that creosote may have some little palliative effect upon the cough, through the nerve filaments of the mucous membrane, that it may render the secretions more or less antiseptic and produce other slight changes, but as for any curative or abortive effect it is wasting time to consider it. To the use of nitroglycerin in certain stages of the disease, one cannot be opposed. There is a time when the right heart is laboring under the load before it in the lung, and there is an impending venous stasis, when the use of nitroglycerin or light bleeding and the giving of saline infusions have dilated the vasomotors and so relieved the heart and at the same time conserved the strength of the patient. Oxygen if needed should be used more to quiet the patient in his dyspnea and so enable him to get short naps and avoid the use of morphine. Veratrum viride has its advocates, but the good it does, if any, is not nearly so apparent in pneumonia as in typhoid or some of the fevers of the puerperium, where its beneficial use has long been established.

It is but natural, when we remember that the mortality is as great now as fifty years ago, that new methods of treatment should be proposed and heralded; the quinine-iron treatment has its backers, Page's system of fasting has had a run. The cold-tar treatment of a few years ago is hardly ever heard of; it had as its only recommendation, as Dr. Simon Baruch said, that the patient died with a fairly normal temperature. We hoped for great things from the antipneumococcic serum, but results are as yet not convincing.

It is thus that we hold to digitalis and strychnine, and are chary at adopting other drugs and their combination, believing, as Niemeyer and Jaccoud have often spoken and written, that digitalis should be used to strengthen and nourish the heart in pneumonia and reduce a rapid pulse. The words of Thomas of London in his practice in 1813 on digitalis can appropriately be repeated in our day: "Use your digitalis in pneumonia to strengthen and diminish the action of the heart."

919 McPherson Square.

*Read before the Montgomery County Medical Society of Maryland, October 16, 1906.

Results in German Tuberculosis Sanatoriums.—Remarkable success attends the treatment of tuberculosis at the sanatoriums erected in Germany in connection with the imperial workingmen's insurance, of which there are seventy-one. Nearly 88 per cent. of the patients are said to be discharged as cured or convalescent.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A FRESH VIEW OF THE CANCER PROBLEM.

AT the recent carcinoma conference held in Heidelberg, Leyden stated that the cancer investigations seemed to be on a dead center, and that some new point of view would have to be presented before progress could begin again. While this seems like rather a strong statement, it is quite true that, in spite of the claims of the sponsors of the various cancer parasites, and notwithstanding the splendid transplantation experiments that are being carried on by Gaylord, Bashford, Ehrlich, Apolant and others, the investigators seem to be but marking time; and though there is no lack of activity, there seems to be but little actual advance. For those who share this impression there will be much of interest in a communication by Bernhard Fischer of the University of Bonn, appearing in the *Münchener medizinische Wochenschrift* of October 16, 1906, which at least seems to promise a fresh point of departure for future studies. Fischer began by attempting to evoke epithelial proliferations in the skin by causing a chronic inflammatory process in the papillary layer whereby the normal relationship between connective tissue and epithelial cells should be disorganized, a factor the significance of which has been emphasized by Ribbert. Many previous experimenters have had a similar idea in view; for example, Brosch, who sought to produce the necessary irritation by applications of xylol paraffin to the contused skin, and Ribbert, who obtained papillomatous outgrowths by repeatedly scratching away the regenerating epithelium of lips of rabbits. The unsatisfactory nature of the results so far achieved in this direction led Fischer to study the effects of an irritative process in the cutis on the intact epidermis. This he set about by injecting many different organic substances into rabbits' ears; and after a large number of failures he discovered that very remarkable changes followed the injection of a saturated solution of the fat stain, scarlet-R. When such an injection is made there follow hyperemia, cellular infiltration, the formation of giant cells, and the growth of young connective tissue. At the same time the germinal layer of the epidermis is stirred to activity, mitotic figures appear, and epithelial wedges begin to penetrate into the deeper layers. The epithelial cells approach the oil droplets and then surround them, so that finally the connective tissue is permeated with colonies, wedges, and nests of epithelial cells, and presents exactly the appearance, as is evidenced by the author's numerous drawings, of an epithelioma. Fischer does not interpret these manifestations as the result of irritation in the ordinary sense of the term, but advances the theory that the scarlet-R exercises a distinct chemotactic influence on the epithelial cells. When all the oil has been taken up by the cells, the latter cease to multiply, undergo cornification, and finally cholesteotomatous masses result which break through the surface and discharge their contents. The experiment does not, therefore, result in the production of a true carcinoma, since there are lacking the properties of continued growth and destruction of tissue, but using these observations as an analogy the author offers an interesting suggestion regarding the formation of malignant tumors. Now that it has been shown that there actually exist chemical substances which possess the faculty of inducing epithelial proliferation, it is permissible to assume that there may be present in the body principles having this property. These Fischer calls "attraxins." He briefly states his theory of tumor formation, which is that cell colonies isolated from their normal surroundings in accordance with the well-known theories of Cohubeim and Ribbert are stirred into activity by the action of the attraxins. These are supposed to exist in great variety, perhaps a specific one for every variety of cell, and as the chemical qualities of the detached cell islands probably differ from those of the mother tissues, it is possible for these cells alone to be stirred into lawless proliferation.

While this is only the skeleton of Fischer's theory, it indicates the trend of his speculations. An interesting point is that Ehrlich, working along quite different lines, in the course of his transplantation experiments has come to the conclusion that, in order that the inoculation with tumor tissue to be successful, there must be present some indispensable proliferative substance, or "specific x-body," as he calls it, and it seems not impossible that the attraxine of Fischer may be identical with this supposititious agent. At any rate, Fischer has opened up a new line of cleavage, and if his own standpoint turns out to be untenable, it is more than likely that in the process of refuting or confirming his conclusions other data of importance may be brought to light.

THE RELATION OF THE STREPTOCOCCUS TO SCARLET FEVER.

IN a paper published in the *Centralblatt für Bakterilogie*, etc., Vol. XLII., No. 1, Nedrigailon critically discusses the etiological relation of the streptococcus to scarlet fever in the light of recent investigations. His article is especially interesting and timely because of the numerous reports which have lately come from all parts of the world of the successful use of the polyvalent antistreptococcus sera in cases of scarlatina. The sera of Moser, Aronson, Marmorek, and Denys have found many endorsers, and the difficult question arises whether favorable results from these sera are attributable entirely to the effect they have upon the rarely absent streptococcus complications, or whether they may be interpreted as a truly specific action upon the scarlatinal process itself.

In attempting to consider this question it will be of interest to consider briefly some of the most noteworthy investigations in this field. The pioneer worker was Croone, who, in 1885, found streptococcus in the organs of children dead of scarlatina. Similar observations were made by Fränkel and Freudenberg and, soon after, by Babes. From that time on the attention of bacteriologists was drawn to the problem, and it is quite impossible to detail the great number of facts accumulated. A few of the most convincing pieces of work, however, should be mentioned. Baginsky and Sommerfeld found streptococcus in the heart's blood of eight children who had succumbed to a fulminating type of scarlatina before any complications had developed. Class, an American physician, in over three hundred cases of scarlatina, found a diplococcus with which he was able to produce, in pigs, a disease closely simulating the human malady; there were high fever, exanthemata with desquamation, and often nephritis. These remarkable results were confirmed by Jaques, Page, and Gradwohl, and the organism in question was identified as a streptococcus. The finding of the microorganism in the throat and blood of patients during the acute stages of the disease was then reported by many workers with much unanimity and regularity. More recent investigations have attempted to establish the etiological relationship of the microorganism by means of serum reactions with scarlatinal blood. The many reports of agglutination tests have been unsatisfactory and confusing, as might have been foreseen, for our knowledge of the whole streptococcus group is, as yet, very defective, and its serum reactions are surely not group reactions, but rather more specifically limited to the individual strain or allied strains. Little advance has been made, therefore, by agglutination for either point of view.

In the face of the large number of facts, then, which seem to convict the streptococcus of being the direct causal factor of scarlet fever, it is left for us to consider the reasons for which it is, at present, absolutely unjustifiable to assume such an etiological relationship to exist. Although the streptococcus has been found with striking regularity in scarlatina, it is undeniably a common cause of complication in other diseases. It is frequently found in the throats of diphtheria patients and in the lungs of patients with pulmonary tuberculosis. Omeltschenko has found it in the blood of 82 per cent. of fatal cases of typhoid fever. De Waele and Sugg report it in the blood of many cases of smallpox and regard it, of course on insufficient evidence, as the cause of this illness.

The streptococcus isolated from scarlet fever patients has furthermore never been shown culturally or otherwise to differ from other streptococci—and in this, our present inability to distinguish definitely and exactly between the different varieties of streptococci, lies the true source of difficulty in all our dealings with this group of organisms. Finally, the complete impossibility of basing conclusions upon serum reactions obtained with the germs and scarlatinal blood definitely excludes at the present time an affirmative answer to the etiological question. Any favorable results published from the use of the antistreptococcus sera in scarlet fever must, therefore, for the present be considered as due to their effect upon the complicative organism.

Pubiotomy and the Induction of Early Labor.

Probably the value of few of the methods of modern obstetrics seems more firmly established than that of the induction of early labor in suitable cases as a conservative measure, both for mother and child. Nevertheless, a few obstetricians, notably Zweifel and Krönig, have recorded objections to the measure, principally on the ground that it is not so advantageous to the child as is usually supposed. It is alleged that the results obtained are deceptive, because, even though the children are brought into the world apparently uninjured, a very large proportion of them die before the end of the first year of life. Hunziker has utilized the statistics of von Herff's clinic at Basle by investigating the after-history of these infants, and has found that of those born at artificially premature labors, the proportion living at the end of the first year was only very slightly lower than that of those spontaneously born. Fehling (*Münchener medizinische Wochenschrift,* October 23, 1906) is a warm believer in the induction of early labor, and considers that it improves the prognosis for the life of the infant, and in this respect is superior even to cesarean section. The statistics of his clinic at Strasburg show that of the children born at twenty-seven cesarean sections only 63.6 per cent. were living at the end of the first year, whereas 82.35 per cent. of those born as the result of induced labors were living at the end of the same period. The same author also discusses the subject of pubiotomy, and states that he considers it a substitute for perforation of the living child and an alternative for cesarean section in cases of relative disproportion. He is of the opinion that pubiotomy is indicated in pelvic contractures of moderate grade, both flat and justo minor, in primiparas who are in labor when first seen. If the condition of the mother or child makes the prompt termination of the labor seem desirable, and if version and forceps are not indicated pubiotomy should be done. The same is true for multiparas who refuse cesarean section for relative disproportion, or when dystocia arises in the course of the labor through the size of the child, the presentation, etc., so that an enlargement of the pelvis is demanded for the sake of the child. From now on early labor is to be avoided as much as possible in dealing with primiparas with contracted pelves, and the province of this procedure is to be regarded the delivery of multiparas who have already gone through a still birth, difficult forceps labors, or perforation of the child. According to this author, the obstetrician should therefore not attempt to advocate either pubiotomy or the induction of labor to the exclusion of the other, but should consider both as procedures having their own special fields of usefulness.

The Cytology of Gonorrheal Pus.

The possibility of obtaining some idea of the nature of the disease process and its prognosis from the microscopical examination of the pus in cases of gonorrheal urethritis has occupied numerous observers during the last few years. The attempt has been made to determine from the preponderance of one or the other variety of cells whether the inflammatory process is still in the acute stage or has already become chronic. So far the results have hardly been susceptible of practical application,

but an interesting study made by Posner on a very large number of cases appears in the *Berliner klinische Wochenschrift* of October 22, 1906. This observer investigated smears obtained from two hundred and four cases of urethritis in males. For the most part he made use of the Jenner stain, which affords satisfactory differentiation of the leucocytes, and is very convenient in its application. He found that vacuoles could be discovered in the polynuclear and mononuclear leucocytes in all stages, and regards these as an evidence of phagocytosis, but says that they are not specific for gonococci, and do not permit diagnostic deductions. Mononuclear basophilic cells are also encountered in every stage of gonorrhea, but usually are very numerous only in the first days of the process, and in very chronic cases. Eosinophiles are invariably present, but reach their greatest numbers during the fourth and fifth week, and when very numerous they indicate that the process is gonorrheal in nature. One of the most interesting observations concerns the appearance in the secretion of a peculiar type of polynuclear leucocytes having what are termed ball-nuclei. These differ from the ordinary neutrophiles, from which they probably result through degeneration, in the peculiar spherical form of their nuclei. These stain deeply, show no nuclear structure, and have no threads of intercommunication with each other. Posner found that these cells were present in only 5.4 per cent. out of 149 smears of undoubted gonorrheal pus, and in 28 per cent. of cases in which gonococci could not be positively demonstrated, whereas out of 54 smears containing no gonococci these peculiar cells were present in 77.8 per cent. He therefore concludes that when leucocytes with these ball-nuclei are found there is reason to believe that the process has not been a true gonorrhea, or at least that the suppuration is no longer caused by gonococci alone, but is being maintained by other microorganisms or toxins.

Infant Feeding With Raw Milk.

The view that security in artificial infant feeding is to be sought in the use of a milk completely sterilized by heating has of late been criticised with more or less severity. The objectors have alleged that the heating process caused notable changes, in both the chemical and the biological properties of the milk, and that these were not negligible in their relation to the welfare of the infant. Behring went still further, and based his advocacy of raw milk on the hope of producing in the milk antibodies against certain infectious processes, particularly tuberculosis, which would be effective if the process of sterilization were omitted. The claims of numerous pediatrists who prefer unheated milk have been opposed by the views of a considerable number of observers who believe that raw milk has, at the very least, no advantages over the sterilized product. Recent experiments by Brüning (*Zeitschrift für Tiermedizin*, Vol. 10) apparently show only how complex the question is. He fed newly-born animals of the same litter partly with raw milk from a different species and partly with boiled milk. In these experiments the animals fed on the latter appeared to have the advantage, but, on the other hand, animals nourished on boiled mother's milk lagged far behind those that received it unaltered Much interest attaches to the recent efforts of Much and Romer to secure a germ-free milk without the intervention of heat. This can be effected by adding to the freshly-drawn milk a small proportion of 30 per cent. solution of peroxide of hydrogen. After having been allowed to act for a certain length of time this agent is decomposed and entirely removed by the addition of a catalyzing agent of animal origin. Tests of milk so prepared are said to show a minimal number of bacteria, while in taste and appearance the milk is entirely unaltered, and, if preserved from contamination, is said to keep for a considerable period of time. The question of whether milk so prepared actually has advantages over sterilized milk is still to be determined. Böhme (*Deutsche medizinische Wochenschrift*, October 25, 1906) made tests on a series of twelve children in Brauer's clinic in Marburg. The conclusion reached is that the milk treated in this way agrees well with children more than three months old, and that for them it is not inferior to the best boiled milk, and may even be superior. Very young, weakly infants, however, so far as it is possible to judge from the small number of cases, appear to do better on milk sterilized by heat.

Suturing Arteries.

There are three suture methods of repairing arteries which have met with more or less favor at the hands of surgeons. These are (*a*) the invagination method, (*b*) suture of the outer two coats only, and (*c*) through-and-through methods. All these, together with certain advantages, possess disadvantages, and Dr. G. M. Dorrance of Philadelphia, writing in the *Annals of Surgery* for September, describes a method of suturing arteries for which he claims many advantages and no disadvantages. Dr. Dorrance describes at some length a method of suturing a longitudinal cut, a transverse incision half way through the artery, and a complete transverse division of an artery. These descriptions are accompanied by figures illustrating the method. The method of suturing a longitudinal cut is described as follows: The clamps are applied 2.5 cm. above and below the cut. The suture is started 1.5 mm. above the cut edge; it is passed through the outer two coats and tied, and the end of the suture is grasped by a hemostat; the needle is next passed through all the coats of the artery on both sides, 1.5 mm. below the first suture and 1.5 mm. from the cut edge; the suture from now on is a continuous mattress, with the dropping back one half a suture length every third suture until the end of the incision is reached; then the needle is passed through the outer two coats, 1.5 mm. below the lower end of the cut, and a half hitch made to tie the suture. The same suture is continued as a whip stitch over the edges of the artery outside of the mattress suture until the starting point is reached, when the two ends of the suture are tied. The artery is grasped in a gauze pad, the distal clamp is removed, then the proximal clamp, and finally the artery is dropped back into place and the deep fascia is sutured around the line of approximation. We have not space to describe at length the methods of suturing the other injuries to arteries mentioned above, but these resemble in principle the method described. The advantages claimed for the method are that (1) the suture does not protrude in the lumen of the artery; (2) fibrin ferment cannot get from the ends or cut surfaces of the artery into the bloodstream; (3) the liability to secondary hemorrhage is lessened by the double line of suture. Whatever suture is used, the author insists that the principle of placing the intima to intima is absolutely essential, and the suture must be kept out of the bloodstream.

The Diagnosis of Rabies.

The rapidity with which the diagnosis of rabies can now be established in a dog, and the value of this shortened interval was well illustrated in a case reported in the daily papers a week or two ago. A mad dog bit four persons and one horse shortly before noon; by six o'clock in the afternoon the diagnosis had been established, all the persons bitten had been notified that the dog had really been mad, and one of the persons had been started on a course of Pasteur treatment. This rapid diagnosis depends on the finding, in the ganglion cells of the animal's brain, certain round or oval bodies of characteristic structure and staining properties. These bodies were first described by Negri in 1903, and have since then been studied by many other observers. The most recent and best of these studies is that of Dr. Williams of the Research laboratory, New York Department of Health. By employing squeeze smears and a special staining method devised by Van Gieson, she was able to bring out many new facts in regard to the structure of the bodies; her work makes it extremely probable that these bodies are protozoa and the cause of the disease. The great practical point in her method is the shortened time required for diagnosis, only about twenty minutes being required, instead of the 24 to 48 hours formerly necessary. The Board of Health has arranged with the Police Department to be promptly notified of every instance in which a policeman shoots a suspected mad dog. The carcass is then at once sent for and forwarded to the laboratory for diagnosis. As soon as this is established the police are informed by telephone and all persons known to have been bitten are notified by the police of the diagnosis.

The Behavior of Carbonic Acid in the Stomach.

The consumption of carbonated beverages has grown to enormous proportions, and the average individual no doubt gives little thought to their possible effect aside from their apparently refreshing character, particularly during the heated term. Americans seem especially addicted to their use, and it is safe to say that larger quantities are consumed by them than by any other nation. The carbonic acid held in suspension by the water has an undoubted sedative effect on the gastric mucosa and also a slight general diaphoretic and diuretic action. More or less uncertainty, however, has existed as to the disposition of the gas, so that considerable interest must attach to a recent communication on this subject by Loenning, published in the *Zeitschrift für klinische Medizin,* Vol. 56, 1906. He made numerous experiments in both dogs and the human subject, which show that the stomach absorbs carbonic acid gas from water in considerable quantities. This absorption occurs very rapidly, so that over one-half of the amount is taken up within five minutes and a considerable portion of the remainder within ten or fifteen minutes. The process then becomes slower, and at the end of an hour there is a small quantity of the gas left which may be absorbed very slowly or not at all. A similar condition was noted when carbonated alcoholic beverages were employed for the experiments. At the same time it was found that the stomach did not absorb any appreciable amount of the water, only two cubic centimeters being taken up in thirty minutes out of a total of four hundred which had been administered. When we consider that the body is making a constant effort to get rid of carbonic acid through the medium of the skin, the lungs, and the other excretory organs, it would appear that the intemperate drinking of carbonated beverages may not be entirely free from danger.

Tea and the Typhoid Bacillus.

An interesting observation on the effect of an infusion of tea on the growth of *Bacillus typhosus* has been recorded by an English army surgeon, Major J. G. McNaught, in the *Journal of the Royal Army Medical Corps* for October, 1906. He finds that the germ in pure culture becomes greatly diminished in numbers by an exposure of four hours to the beverage. After twenty hours it was impossible to recover it at all from cold tea. The results obtained are of interest from the author's standpoint with reference to the use of cold tea as a substitute for water in soldiers' canteens during active service. For even when water is sufficiently sterilized, it is likely to become infected after sterilization, and bottles which have once been filled with contaminated water are capable of transmitting the infection for a long time. Tea, it would seem, however, will render any chance contamination with the typhoid bacillus harmless within a few hours. A more general knowledge of this fact would soon serve to stimulate tea drinking without a doubt, as people are very apt to seize upon a measure of this kind in order to secure mental, if not material comfort. If prepared in a proper manner, tea constitutes a refreshing and not harmful beverage, for it is the tannin and other extractives which are extracted only after continued steeping that are productive of harmful consequences. If employed in the manner indicated, in localities where typhoid fever is known to be present, it may serve as one of the essential precautionary measures to guard against infection by this disease.

News of the Week.

Professor Fraenkel's Birthday. — To-day, November 17, Professor Bernhard Fraenkel of Berlin will have arrived at the age of seventy years. It was at first planned to celebrate this event by a banquet under the auspices of the Berlin Laryngological Society, of which he is the President, but as this proposal was respectfully declined by Professor Fraenkel, his assistants arranged for an exhibition illustrative of the progress of laryngology in the past fifty years, to be held in the Kaiserin Friedrich Haus in Berlin, from November 17 to 30, and this, because of its value historically, the Professor accepted. The cooperation of laryngologists throughout the civilized world was sought in the early spring of this year, and at the regular meetings of the various National Associations of American Laryngologists it was voted to participate. The matter was placed in charge of Dr. Emil Mayer of New York City, and, as a result, over 1,000 instruments, appliances, models used in teaching, etc., each bearing a distinctive tag with the word "America" stamped across the face, were sent, so that, aside from Germany, the best represented country in this exhibit will be our own. Letters and cablegrams from all over the world will be sent congratulating the Professor, who is well known as the Dean of laryngologists, for many years the head of the department of laryngology in the University of Berlin, and for nineteen

years, since its foundation, the editor of the *Archiv für Laryngologie.*

The Public Relations Committee of the Chicago Medical Society.—At a meeting of this committee, held October 23, it was decided that the more urgent public questions for the consideration of the committee are the establishment of a sanatorium for tuberculosis, the epileptic colony, and the favoring of State legislation in conformity with the federal pure food bill, including the labeling of preparations containing habit-forming drugs. It seemed proper to leave the question of the State tuberculous sanatorium and the epileptic colony in the hands of the State Board of Charities for the present. The committee has decided to obtain the views of the candidates for the State legislature as to whether they would favor a State law conforming with the federal pure food law, passed at the last session of Congress, requiring the labeling of preparations containing habit-forming drugs. At the meeting of the Illinois State Medical Society, held May 16, at Springfield, a resolution was passed instructing the Committee on Medical Legislation to work for the passage of a bill by the next General Assembly of Illinois, which shall provide that all bottles or packages containing drugs shall bear a statement on the label of the quantity or proportions of alcohol, narcotics, or other poisons which may be contained therein.

McCormick Memorial Institute.—After several years' effort, the McCormick Memorial Hospital for Children suffering with infectious diseases, has secured a site at the northwest corner of Fifty-fourth street and South Park avenue, Chicago. Prejudice on the part of property owners has thus far prevented the consummation of the project, in spite of the fact that the Chicago Medical Society and individual physicians all over the city went on record as vouching for the safety of a neighborhood in which such an institution would be located. Mr. McCormick's plans provide for a modern hospital, located on spacious grounds, equipped according to the best scientific knowledge of Europe and this country. Provision for charitable work on a large scale has been included in the plans.

Chicago Board of Health Laboratory.—The latest bulletin of the Chicago Board of Health shows that the local physicians are increasingly availing themselves of the facilities afforded for the bacteriological diagnosis of disease. The number of throat cultures received in the laboratory during October, 1906, shows an increase of 138 per cent. over the number received in the corresponding month of last year, and the number of specimens of blood to be tested for typhoid fever shows an increase of 69 per cent. There is no such increase in the mortality from these two diseases. On the contrary, there were only seven more deaths from diphtheria, while there were six fewer from typhoid fever in October this year than in the corresponding month of 1905. The Health Department officials believe that the practically stationary diphtheria mortality and the reduced typhoid mortality are related to the increasing use of the laboratory.

Mosquitos on Staten Island.—Dr. A. H. Doty, Health Officer of the Port of New York, announces that the *Culex solicitans* or striped-legged mosquito has been practically exterminated in Staten Island. This is the result of the expenditure of $17,000 in draining several of the marshes on the island. Some other members of the family still remain to be dealt with, however, but it is hoped that when the New Jersey swamps opposite Staten Island have also been drained mosquitos will be rare in Richmond.

Hospital Bequest.—By the will of the late Margaret Agnes Weiher, wife of Dr. Charles L. Weiher of this city, and daughter of the late John and Mary Sheehan, $1,000 was bequeathed to the St. Joseph's Hospital for Consumptives.

Washington Heights Hospital.—According to the first annual report of the Washington Heights Hospital 2,000 patients have been treated in the dispensary, and about 1,000 in the hospital in the twelve months, but the gifts received from the patrons have not been adequate for the maintenance of the institution.

Dr. George F. Shiels of this city has been awarded a Congressional medal of honor for distinguished gallantry in action at Tuliahan River, Luzon, P. I., March 25, 1899, when he was serving as Brigade Surgeon with rank of Major under Gen. Wheaton.

Internes Resign.—The six internes comprising the house staff of the German Hospital in Williamsburg resigned in a body last week. The cause of this action was alleged to be the interference with the work of the doctors by the head nurse of the institution. The climax came, it was stated, when this nurse countermanded a prescription ordered for a patient by one of the staff, and, as a result, the resignations of the directors were handed in and accepted.

A New Public Bath.—Plans for a new three-story public bath and gymnasium to be built at 342 to 348 East Fifty-fourth street, have been filed with the Building Department. It is to have a frontage of 75 feet and a depth of 100 feet, with a classic façade of brick trimmed with granite and limestone, ornamented with large columns supporting a cornice and balustrade. Separate baths for men and women will occupy the first two stories, and the top floor will contain the gymnasium, and a mezzanine story will be used for a running track. The building is to cost $200,000.

Suit by a Physician.—A Philadelphia physician has brought suit against the estate of a deceased wealthy patient for the sum of $33,000 for professional services. He was engaged by the patient to travel with him, and was to receive $300 a day for his exclusive services. During 1903 and 1904 the indebtedness accumulated to the amount mentioned.

Experimental Surgery.—A department of experimental surgery has been established in the medical school of the University of Pennsylvania, and Dr. J. E. Sweet, formerly connected with the laboratory of hygiene, and more recently with the Rockefeller Institute, has been placed in charge.

Kissing Games Barred.—The health authorities of Malden, Mass., have set themselves in opposition to the forces of nature by announcing that no more kissing games are to be allowed in the city. This is because of several recent deaths from diphtheria among school children who have taken part in such amusements.

Sanitation in Havana.—In consequence of the deplorable conditions which have been found to exist in the National Insane Asylum at Havana, Gov. Magoon has decided to expend the sum of $29,000 for immediate repairs. A total sum of $160,000 has been appropriated to be used for this

purpose. The authorities are also insisting on compliance with sanitary regulations by the proprietors of cafés and restaurants, most of which are extremely deficient in their toilet accommodations.

The Birth Rate in France.—That the preference of French married couples for small families has not been modified is shown by the publication of the vital statistics for 1904. The births in France for the year numbered 807,292, showing a decrease of 10,937 from the total of 1904. The reason for this decrease is not to be found in a reduction of the number of marriages, in which the statistics show a slight increase over 1904, but it apparently arises from the aversion of the French people to large numbers of children. The National Association, which is studying this matter, has reached the conclusion that it is necessary to inculcate the idea that any couple that raises more than three children merits and is entitled to public gratitude and protection.

Lombroso a Spiritualist?—The newspapers report that much interest has been aroused by an article by the celebrated alienist, Prof. Lombroso, in the current number of *La Tetura,* dealing with the phenomena of spiritualism. The interpretation of the article appears to be that it is a frank recantation of Lombroso's antispiritualistic theories, which, so far as can be judged, seems to have been brought about by ordinary enough samples of so-called spiritualism.

Death of the Smallest Man.—The death of what is said to have been the smallest man in the world occurred last week at Wilkesbarre, Pa. The name of this personage was Reese Wiggles. He was born in Wales fifty-three years ago, and is said to have been but thirty-seven inches tall, or four inches less than Gen. Tom Thumb.

Tuberculosis Among Mill Workers.—Very encouraging results are reported by some of the mill owners of Rhode Island, who are endeavoring to combat tuberculosis among their employees. These firms have engaged physicians, who supervise the workers and give instruction in hygiene. The mill hands are cooperating with much interest, and it is expected that within a short time an effective organization will be at work throughout the entire State.

Dr. Grenfell Honored.—Dr. Wilfrid T. Grenfell, the medical missionary who founded and conducts the Labrador Deep Sea Mission, was among the recipients of the King's birthday honors, being created a Companion of the Order of St. Michael and St. George.

The Bradshaw Lecture before the Royal College of Surgeons of England will be delivered by Mr. Edmund Owen, December 12, the subject being "Cancer; Its Treatment by Modern Methods."

Medical Association of the Southwest.—At the meeting of this society, held at Oklahoma City October 31, Hot Springs was selected as the place for the next meeting. The following officers were elected: *President,* Dr. C. M. Rosser, Dallas, Tex.; *Vice-Presidents,* Dr. R. P. Runwan, Little Rock, Ark.; Dr. W. F. Sawhill, Concordia, Kan.; Dr. John Punton, Kansas City, Mo.; Dr. E. O. Barkef, Guthrie, Okla.; *Secretary and Treasurer,* Dr. F. H. Clark, El Reno, Okla.

Brooke County (W. Va.) Medical Society.—A medical society for Brooke County, W. Va., was organized at a meeting of physicians recently held for that purpose at Wellsburg. Dr. C. A. Wingerter of Wheeling, ex-councilor of the State society, was present as organizer. The officers chosen are as follows: *President,* Dr. J. B. Walkinshaw, of Wellsburg; *Vice-President,* Dr. B. S. Hardin; *Secretary,* Dr. C. R. Weirick; *Treasurer,* Dr. J. P. Johnson; *Board of Censors,* Drs. Gist Palmer, J. L. Pyle, and W. T. Booher.

American Therapeutic Society.—The next meeting of this organization will be held in Washington, D. C., March 4, 6, and 7, 1907. The officers of the society are as follows: *President,* Dr. Robert Reyburn of Washington, D. C.; *Vice-Presidents,* Drs. Joseph E. Janvrin of New York, Frederic H. Gerrish of Portland, Me., and Howard Van Rensselaer of Albany, N. Y.; *Secretary,* Dr. Noble P. Barnes of Washington, D. C.; *Treasurer,* Dr. John S. McLain of Washington, D. C.

In Memory of Schaudinn.—The German Dermatological Society has decided to subscribe 5,000 marks to the Fritz Schaudinn memorial fund and to issue the first volume of its transactions as a memorial to the deceased investigator.

Obituary Notes.—Dr. Charles Vose Bemis of Medford, Mass., died on November 6 at the age of ninety years. Dr. Bemis was one of the oldest graduates of Harvard College, receiving his literary degree in 1835, and his medical degree four years later. He began to practise in Medford shortly after his graduation, and had lived there ever since. He was for some years trustee of the Massachusetts General Hospital.

Dr. David Henry Hazen of Washington, D. C., died on November 6 at the age of sixty years. He was born in Upper Mount Bethel, Pa., and went to Washington in 1870 to study medicine. He was a member of the District of Columbia Board of Education from 1890 to 1900.

Dr. William J. Brunner of this city died suddenly of heart disease on November 9. He was born in Germany, but came to this city while still a youth, and was graduated from the New York University Medical School in 1879. Since his graduation he had practised in this city.

Dr. Samuel H. Gordon of Newark, N. J., died suddenly of heart disease on November 10. Dr. Gordon was thirty-five years old, and had received his medical degree from the Medico-Chirurgical College of Philadelphia.

Dr. J. C. Schrader of Iowa City, Ia., died on October 30 at the age of seventy-six years. He obtained his medical education at the College of Physicians and Surgeons, Keokuk, and at the Long Island College Hospital, receiving his medical degree in 1870. He was for many years professor of obstetrics and gynecology in the College of Medicine in the Iowa State University, and was long the Dean of the faculty. In 1898 he resigned and was made emeritus professor. Dr. Schrader was State Senator for two terms, and held many medical and official positions, including the presidency of the State Board of Health, of the State Board of Medical Examiners, and of the State Medical Society. He had also been vice-president of the American Public Health Association and of the Western Association of Obstetricians and Gynecologists.

Dr. Walter Langdon Hall of Medford, Mass., died on November 1 after an operation for appendicitis. Dr. Hall was born in Augusta, Me., in 1846, and was graduated from the Bellevue Hospital Medical College in 1867. After serving several years in various New York institutions, he began practise in Gardner, Me. He removed to Newcastle, Me., where he practised seven years, and then settled in

Medford. In 1886 he was made professor of medicine at the Boston College of Physicians and Surgeons, and in 1893 was given the same chair in the newly founded Tufts College Medical School. He gave up practise in 1898, and since then spent much of his time in Mexico.

Dr. Julian Abbitt of Appomattox, Va., died on November 1 at the age of thirty-eight years. He was a graduate of Richmond Medical College.

Dr. M. A. Brown of Marshall, Mo., died on October 30. Dr. Brown was born in Albemarle County, Va., in 1833, and in 1861 was graduated from Jefferson Medical College, Philadelphia. He served through the Civil War as a surgeon in the Confederate Army, and had practised in Marshall for many years.

Dr. Silvester L. Nidlet of St. Louis died on October 30 at the age of seventy-seven years. He was born in Philadelphia, but removed to St. Louis in 1844, and was graduated from the St. Louis Medical School eight years later. He served through the Civil War as surgeon, and later was appointed chief surgeon of the Whetstone Indian reservation.

Dr. Clarence W. Spring of Fitchburg, Mass., died on November 2 after an illness of several months. Dr. Spring was born in Salmon Falls, N. H., in 1859, and was graduated from Dartmouth College in 1880. Four years later he received his medical degree from Harvard Medical School. He had practised in Fitchburg since 1885. He was City Physician for two years, and served many terms as secretary of the Worcester North Medical Society.

Dr. David B. Birney died at Philadelphia on November 2 as the result of an accident. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1885.

Dr. T. Stanton Crowly died at Philadelphia on November 7 at the age of eighty-three years. He was graduated from Jefferson Medical College in the class of 1849.

Dr. Wm. Shafer died at Camden, N. J., on November 8 at the age of fifty-three years. He was graduated from Jefferson Medical College in the class of 1884.

THE SECOND HARVEY SOCIETY LECTURE.

The second lecture in the present series given by the Harvey Society was delivered in the New York Academy of Medicine on Saturday, November 3, by Prof. C. A. Herter, the subject being "The Common Bacterial Infections of the Digestive Tract, and the Intoxications Arising Therefrom."

The speaker began by a discussion of the intestinal bacterial flora, and stated that the alimentary tract of the higher animals contained from 200 to 300 billion bacteria, of which about nine-tenths are dead. Many observers had claimed that the presence of bacteria in the intestinal tract was necessary for the normal life of animals, but the experiments of Nuttall and Thierfelder indicated that this was not so. While, of course, it was impossible to exclude bacteria from the alimentary tract under ordinary conditions, the speaker believed that this presence was not essential for the life of the host. The bacterial distribution in the tract bore a definite relation to the environmental conditions. He had found *B. lactis aërogenes* to predominate in the upper part and *B. coli* in the lower. Regarding the latter the speaker believed that by utilizing undigested food residues available for other organisms, and by inhibiting the growth of these competitors through acid formation, *B. coli* might play a serviceable rôle.

The studies of Dr. Wakeman had shown that conditions in the colon were very largely anaërobic, while the small intestine was aërobic to within a foot of the ileocolic junction. In disease anaërobic organisms invaded and thrived in the small intestine. Curiously enough, the passing of oxygen through the tract seemed to have no effect in changing the results of certain experiments bearing directly on this point, nor did the administration of peroxide of hydrogen, together with catalytic ferrous sulphate produce any change. It was found that conditions favoring anaërobic growth were associated with the rapidity of digestion and resorption. The increased anaërobic condition of the alimentary tract was found to have an important bearing on the number and variety of the bacterial contents. Clinically, the insufficiency of oxygen in the blood of anemic individuals caused the intestinal tract to become abnormally anaërobic.

Prof. Herter then spoke of the microscopical examination of the stools, and said that the gram stain afforded considerable information. He had found, for instance, that diet had a pronounced effect on the number of gram positive organisms present. With animals partaking largely of proteid food the feces showed numerous organisms staining gram positive. On a carbohydrate diet there was a predominance of gram negative organisms. Dr. Herter had examined the feces of the lion, tiger, wolf, and cat; all of these showed a large proportion of gram positive bacilli, and free spores. Similar examinations in the case of the buffalo, goat, camel, and elephant differentiated an herbivorous type of bacterial flora having practically no gram positive bacilli and few spores. He had inoculated the feces into broth, and had found a production of mercaptan only in the flasks inoculated with carnivora feces. When emulsions of feces were inoculated into guinea pigs there was also a marked difference between the carnivora feces and those from the herbivora. With the former there resulted hemorrhagic edemas and digestion of tissue extending into the connective tissue. On autopsy gas and butyric acid formation could be demonstrated. The effects were similar to those produced by *B. aërogenes capsulatus*. With herbivora feces there was an entire absence of these pathological effects, or they were but slightly manifested. A clinical fact which fitted here was that carnivora frequently suffer from anemic troubles, while pernicious anemia rarely occurs in herbivora unless associated with gross parasites.

Taking up the bacteria in the human alimentary tract, Prof. Herter said that especially in the young the number of spores and spore-forming bacteria was relatively few. With advancing age and tissue impairment there was a roughly corresponding increase both in putrefactive bacteria and in their products excreted. The distribution of these putrefactive bacteria varied, he said, with the local degree of anaërobic condition; they were most numerous in the lower small and in the large intestine. An exception to the factor of age was found in the occurrence of types of these organisms, especially *B. bifidus*, in the tracts of nursing children. In those conditions of the young characterized by marasmic growth, distended abdomen, and pasty movements, *B. bifidus* is the predominating organism. Herter examined the feces in a case of appendicitis and found the gram positive bacilli, diplococci, and sporebearers to be the predominating types. He

thought that these, perhaps, were an important factor in the disease. In some instances, *B. coli* might be replaced, temporarily at least, by organisms of aberrant type. This substitution, he believed, was an extremely common phenomenon.

Considering next the bacteria causing infections in man and higher animals, the speaker divided these into three classes. First, the *B. coli* type, endotoxic in character, the extreme variation from which was the typhoid organism. Second, the dysentery group of bacilli, elaborating to some extent soluble toxins which caused similar lesions to those of the actual infection, and produced, at times, neuritic types of disease. Lastly, there were the putrefactive organisms which were spore formers, strict anaërobes, and pathogenic. These liberated hydrogen and formed butyric acid. They also initiated proteid decomposition, though the indol, etc., were then directly formed by other organisms, such as *B. coli.* Under this class of putrefactive organisms were included *B. putrificus, B. botulinus, B. aërogenes capsulatus,* and *B. enterogenes sporogenes.*

According to Herter, the chronic excessive intestinal putrefactions were of three types: (1) the indolic type, where infection is by anaërobic forms associated with *B. coli;* (2) the saccharo-butyric type, especially *B. aërogenes* and *B. putrificus.* This type was characterized by flatulence, gradually developed (at times acute) anemias, and the production of hemolytic substances. There was also a diminution of *B. coli* in the tract and marked increase in the anaërobic production of mercaptan; (3) the third type was really a combination of types 1 and 2, in which nervous symptoms were early prominent, and which later showed both nerve and hemic disturbance.

The lecturer called attention to the difference in the effects of putrefactive products on normal and on weakened individuals. Indol, for example, was borne in considerable quantities by healthy persons without deleterious effects; it was easily oxidized and conjugated to indican. The experiments of Richards were mentioned; these showed that dogs whose oxidative powers reduced by poisoning with hydrocyamic acid were very readily poisoned with indol while normal, untreated dogs bore much larger doses without ill effects. In the hydrocyanic acid dog the power of oxidizing and conjugating these putrefactive substances was much diminished. An indicanuria in sound individuals, then, might merely indicate that large quantities of putrefactive products were well handled and promptly disposed of. According to Lee, indol diminished the irritability of frog muscle and mammalian muscle perfused with indol solution, 1-25,000, did only 37 per cent. of the work of the normal control. For the physician, it was important to remember that in persons whose oxidation capacity is reduced, or who are subject to prolonged and excessive intestinal putrefaction, free indol in the circulation may do considerable harm.

Among the criteria which the speaker gave as an index of the intensity of the infections were the elimination of the products of putrefaction, the character of fecal gram fields, and the clinical symptoms. The prognosis was unfavorable when there was progressive loss of strength and weight, marked anemia, Ehrlich aldehyde reaction, and disappearance of *B. coli.*

The treatment recommended by the speaker was along the following lines: (1) The avoidance of putrefactive organisms (ordinarily introduced with the food) through oral and gastric cleanliness, and the employment of lavage in retention; (2) the promotion of prompt digestion and absorption from the small intestine by improving the secretions through absolute rest, by hydrochloric acid and enzyme administration, thorough mastication, and the avoidance of irritants and excessive food; (3) the treatment aimed to combat the putrefactive organisms with gastroenteric antiseptics, laxatives, lactic acid bacteria, irrigation of the colon, etc.

Correspondence.

FEDERAL INSPECTION OF MILK.

To the Editor of the Medical Record:

Sir:—The man who first attempted to reform the farmer in the ways and means of milk production was the manufacturer of condensed milk. He knew only too well the filthy condition under which milk was made, but accepted them as a necessity, and his promptings on the score of neatness, cleanliness, and sanitary surroundings were not matters of inward consciousness. When the cans of milk were spread about in the avenues of commerce, letters of complaint came in. The milk was spoiled, in spite of the sugar added to preserve it, or, when opening the can, the odor of manure greeted one's nostrils. The making of condensed milk promised untold fortunes for those engaged in it, and something must be done to remedy the evils existing, which produced dirty milk that was likely to make the condensing business a failure.

So, realizing that it costs money to be clean, the condenser put a premium on cleanliness, care, and intelligence in the production of milk by paying the farmers so much more a quart—and then, to insure against the economic tendencies of the farmer prompting him to put the premium in his pocket and forget all about the cleanliness, they insisted on the farmer signing a contract to make clean, wholesome milk.

The milk the farmer put on board the train, to be sold in the city at so much a quart, the condenser cared not how it was made; he was not interested. If the cows drank from slimy, green, mosquito-breeding horse-ponds; if they were fed on acid, vinegary, refuse brewers' grains, distillery swill; if fed upon fermenting ensilage; if the stables were never whitewashed from one end of the year to the other, and poorly ventilated; if the cows were allowed to wallow in their filth, encrusting deeply the bag and teats; if milk was taken from cows immediately after calving; if the milk from the suppurating and bloody udder "went in with the rest;" if the milk went into the can, and with little or no cooling or aerating, further than the ice packed on top of it in the car, and the shaking up it got; if the utensils were slimy and cheesy with the residue of former milkings; and if the men who milked the cows found it simpler and easier at 2 A.M. to not only wash their own hands in the milk, nice and warm from the cow, but to use it in cleansing the manure-coated udder and teats, the condenser cared nothing for this, and it was none of his business if practised by the farmer who sent his milk to town. But for condensing purposes clean milk must be used, and that only. So, when a farmer came to him, complaining of the tyranny of the milk-exchange and of the irresponsible milkman who refused to pay at the end of the month, and wanted to deal with the condensery near at home, where his pay was certain and there was a premium of half a cent a quart, the condenser then and there agreed to take his milk, *provided* he signed and lived up to the contract, submitted to inspection, and became subject to a fine of no inconsiderable amount for infractions of any kind.

And so the farmer fenced in, and away from the cattle, the frog-ponds; cut out the swill feed and ensilage; cleaned, and kept clean, his now whitewashed stables; saw that the stalls were cleaned and the cattle properly bedded; saw to the washing of udders and teats before milking; took milk to the condensery only from healthy cows; put his cans into the spring house, stirring them when cooling; scoured and sun-bleached his strainers and milk cans and pails for hours daily in the air and sun, and insisted upon the cleanliness of the help who did the milking. And this is how the milk used for condensing became sweeter and cleanlier than that made for daily consumption in the cities.

Milk is the most changeable and easily affected food that comes upon our table. When put into the refrigerator care is taken to seal up tight the bottle that holds it, lest it absorb the odors of other foodstuffs in the next compartment. Yet that milk, when taken from the cow, stood open in cans exposed for an hour or more to the odors of a reeking stable, in which thirty or forty cows were confined over night. Delightful to contemplate!

We have heard so much about the packers and their infamies that with some, and perhaps many, people to-day the sight of meat proves nauseating. The presence of canned meat in the family larder, horrors! But the uncleanliness of the stable-made milk, the mainstay of the helpless little one, is many hundred times worse than the ante-jungle condition of the packers. If the millions of milk-fed infants could, out of their helplessness, intelligently express themselves, they would in one voice cry out to the national government for the same consideration shown their parents, and ask for *Federal Milk Inspection.* Those who are inclined to smile at such food-scare articles as these should visit a creamery, where machine-made cream is produced. This is done by revolving hollow, pumpkin-shaped steel bowls 8,000 to 9,000 times per minute and passing the milk through them, a separate stream each of cream and skimmed milk leaving the separator. This mechanical skimming is done by centrifugal force, the heavier bodies—water, casein, milk-salts, manure, blood, pus, seeds, dust, and foreign matter—being thrown to the outside of the inside circumference of the bowl, and the lighter body—the cream—being held at the center.

Now, remembering that before separation such milk was passed through seven or eight strainings, stand by one of those separators when the run is over and see the bowl cleaned out. The milk-filth packs in a long, thick layer around the inside of the bowl. See one of those strips of filth stripped from the separator, and then examine it. No magnifying glass is necessary. There's the manure, plain as day, increasing or lessening, according as to whether it is winter barn-made milk or summer out-door milk. Blood and pus, not always, though frequently present; hairs, seeds, and dirt galore. It's there. You can see it without the aid of a microscope, nor do you want an analytical chemist to tell you by means of furnace, acids, test-tubes, etc., what they are. If you wish you may go and visit the stables and see the cause for all this; but, as to results, here they are in unmistakable signs in front of you.

Now, sterilization and pasteurization are, in their way, grand, and of the utmost usefulness. Strauss has proven this in a practical way. But is it not proper that the spring with the dead hog in it should be purified and cleansed rather than that the water coming from it should be boiled and filtered?

Federal Inspection of Milk! Phew! What a problem! Of course. But if a butcher, through a system of inspection and licensing, can be prevented from sending forth as food for human consumption trichina-infected hogs and tuberculosis-infected cattle, why cannot a plan be evolved to license the farmer along the lines of cleanliness and the making of sanitary milk in all that the word implies?

Someone—not a railroad director—has said that a human life is beyond all monetary computation; when taken, or lost, it can never be replaced. Now, if it is the saving of a single infant from an untimely end by Federal milk inspection, then alone would or should that compensate for all the trouble and expense that the government might assume.

But the fact stands that, with a few exceptions (so rare that, when we are aware of them, we exclaim in wonder at the cleanliness of the stables), the milk sold and consumed daily is by far the most filthily produced and the most unsanitary food that goes upon the family table to be fed to the infant, whose powers of digestion and assimilation are immature, to say the least.

But facts are facts, meet them as we may.

CHARLES CRISTADORO.

POINT LOMA, CAL.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HARVEIAN ORATION—CALCIFIED FIBROIDS—MEDICAL SUPERVISION OF SCHOOL CHILDREN—VACCINE—TEMPERANCE HOSPITAL—OBITUARY.

LONDON, October 26, 1906.

PROFESSOR OSLER delivered the Harveian Oration at the Royal College of Physicians, the president, Sir D. Powel, occupying the chair. The subject which Dr. Osler proposed to illustrate by Harvey and his discovery was the gradual growth of scientific truth through the stages of acquisition, latent and conscious. Harvey's student days at Caius College, Cambridge, and the influence of the writings of John Caius were considered, also his work at Padua under Fabricius, whose teaching moulded Harvey's subsequent career to such an extent that it appeared almost incomprehensible that he should have missed the inspiration which grew into the great truth of 1616 on that memorable April day, when, in the Parlor Lecture, as it was called, in the Anatomical Theater, Harvey set forth his anti-Galenical doctrine as to the circulation, justifying the proverb that "they alone discover what they prove." While men of authority admitted the lesser circulation, there is no evidence that the lecture, which was delivered in Latin, had any immediate influence on the profession of the time. Such a heresy, indeed, as the general circulation could hardly have been appreciated. We cannot even say whether it actually modified Harvey's own practice in any way. It is a remarkable fact that he delayed for twelve years the publication of his views. But similar reticence has been a marked mental feature of some of the greatest discoverers, notably of Newton, who brooded for twenty years over the principle of cosmic circulation which he had grasped, and again of Darwin, who delayed for a similar period the publication of his theory. The present generation has succeeded in making knowledge effective by the fruitful application of truth to human purposes.

After the oration the Moxon medal was presented by the president to Mr. Jonathan Hutchinson.

At the last meeting of the Gynecological Society, Mr. Bowreman Jessett, president, showed a specimen from a case of pedunculated multiple fibroids undergoing calcareous degeneration removed by celiotomy and enucleation of the tumors. He related the case and commented upon some of the most salient points. The history was rather unusual; ten years ago he had removed the left breast for scirrhus; recurrence in axilla three years later; removed; another three years elapsed and then another operation had to be done in the same axilla, since when no recurrence for these four years. The patient sought advice this autumn for pain in the left side of her back and down the leg, which prevented her from walking. Her doctor found something in the pouch of Douglas and sent her again to the president, who operated on September 18. Five nodular pedunculated tumors were removed, and the patient made an uninterrupted convalescence. Mr. Jessett said his case showed the importance of pains extending from the leg as a symptom which may be due to pressure on the sacral and lumbar plexus. If a growth is present it can be removed. Another interesting point is that the tumors were completely calcified. In elderly women all fibromyomata are apt to become so in either form—peripheral or interstitial. In the former a thin, rough, chalky deposit is found on the surface; in the latter there is infiltration through the thickness of the tumor, either in patches or generally diffused. Such calcified tumors were described by Hippocrates. Mr. Jessett has now under his care a similar case, from which he removed a scirrhus breast several years ago, but he finds fibroids following scirrhus have been so rare in his practise that, contrary to the views of some, he thinks the sequence of no importance.

In discussing this case most speakers seemed interested in the fact that the patient had survived so long after malignant disease and then developed these fibroids, but one or two agreed that there was no relation between the two diseases, particularly as uterine cancer is often found together with fibroids.

Dr. H. Smith thought the two diseases quite independent and that the fibroids were developing before the cancer; in fact, that they, when small, set up irritation in the breast, which degenerated into scirrhus. The fibroids might have remained small and grown again later.

Dr. Howell Evans said a fibroid might be dormant for years and then suddenly burst out, and a crop of tumors appear. Patients of twenty-one to thirty were seen complaining of symptoms impossible to impute to fibroids, and five, ten, or more years later might appear with a crop of fibroids like a potato tuber. It was remarkable that in the president's case a condition of malignancy existed for years, and afterwards calcification—a natural protective condition—was found in a benign tumor. Could it be that a tendency to fibroids and calcification might be so great as to give rise to that rare occurrence, expulsion by nature of a malignant tumor? Dr. Dauber did not find calcified uterine tumors uncommon. The condition was only due to long duration.

Mr. C. Ryall said in such cases as the president's enucleation was certainly correct treatment. Such fibroids had passed the growing stage and were degenerating, when there were one or two hard fibroids tending to calcification; especially in young women, enucleation was also advisable. It was not justifiable to remove the uterus for one or two such in young women, but in multiple cases it might be right to do hysterectomy.

Dr. Swanton said patients with calcified fibroids had symptoms of pressure of uremia and little else. The mortality from operations for fibroids seemed to be high from Piquand's statistics, viz., 12 per cent., as against 3 to 5 per cent. of fibroids generally. He also asked about the condition of the ovaries.

The president, in reply, said he had removed the ovaries in several cases as a last resort in cancer of the breast, but

he had never seen any improvement follow. He had no doubt that the fibroids had been of long duration, and it was only when calcification developed, and pressure on nerves set up radiating pain down the leg, that it compelled attention. He could not say whether there had been any calcification in the mammary cancer. He agreed generally that enucleation was bad practice, because so often there were more interstitial fibroids that could be detected. When subperitoneal calcified tumors were found at the age of this patient (fifty-one) there was not likely to be further trouble, so he enucleated all. They came out easily and he had no trouble with hemorrhage. In some deeply-seated interstitial cases it was difficult to arrest the bleeding. The ovaries were small, but quite healthy and not removed. He thought if this patient's fibroids had not calcified she would have had no pain whatever. He had not had sufficient cases to enable him to form an opinion on the mortality after operation.

The Medical Supervision of School Children was the subject of a discussion which was, for the most part, rather an advocacy, at the Parkes Museum this week. Mr. Macnamara, M.P., presided, and said directly the doctor went into a slum school exposure would be made, which would fill the public with shame. It had been partially done, but the London system was roundabout, and was mostly concerned to compel parents to cleanse their children's heads. Liverpool was far ahead. There, in 23 out of 152 schools, nurses regularly attended to those children who had been picked out by the teachers—about 10 per cent. in the poorer schools. Professor Kenwood said to preach the value of medical inspection to that audience would be preaching to the converted. The best education needed the best physical condition. The teachers knew that, and knew medical inspection was needed, and the central authority was to blame for subordinating hygiene to mere instruction. Inspection was specially of value as to sight and hearing, the two faculties through which instruction was received. Mrs. Dr. Scharlieb and Dr. Hyslop also spoke in the same sense.

Dr. Alan Green has contributed to the report of the medical officer of the local government board his further observations on his chloroform process for eliminating extraneous organisms from calf vaccine lymph. He finds that it is best to defer the addition of glycerine until the chloroform has completed its action. The combined influence of chloroform and glycerine in water appears to be prejudicial to the vaccine. Dr. Green was not able to completely eliminate spores from pulp to which a spore-bearing organism had been added, by employing chloroform after the plan of fractional sterilization. But the numbers of spores have been greatly reduced by this process. Germination of spores took place after the application of the chloroform, and some during its continuance, so that the propagation of organisms was carried on, although in greatly diminished numbers.

The foundation stone of the new buildings of the Temperance Hospital was laid yesterday by Lady Strong and Sir T. V. Strong presided over an influential meeting in support of the institution—the president, the Lord Chief Justice, being detained by his judicial work. The reconstruction was undertaken at the suggestion of King Edward's Hospital Fund. The first part will cost £11,000, of which above £3,000 was promised before the proceedings began, and £1,063 was laid on the foundation stone at the meeting.

William Sedgwick, M.R.C.S. (1845) died on the 20th inst., aged 85. When dresser to Liston, he was present at the first operation performed in London under anesthetics. After taking several voyages to India and China, mostly in charge of troop ships, he settled and practised in London. He devoted great attention to the study of heredity, and this work was acknowledged by Darwin as most useful. He also contributed several papers to societies and journals on cholera, the latest of which was probably his address as president of the Harveian Society, 1889, which he devoted to "Cholera and Chemistry." For some years he has been retired.

Dr. E. Drummond died on the 20th inst. He was well known as the English physician in Rome. He translated the volume of memoirs on malaria for the new Sydenham Society and contributed to journals and societies on the condition of the Roman Campagna and on local fevers and various climatological questions. He graduated M.D. Edin. 1864. He returned to England several years ago, and devoted much attention to bacteriology.

Lieut. Col. A. W. Bate, M.D., died on the 22d, aged 64. He entered the army medical service in 1865 and retired in 1885. In that year he had served in the Soudan campaign, and was awarded the medal and the Khedive's star.

Lieut. Col. C. S. Wills, C.B., A.M.S., died on the 12th inst., aged 73. He joined the army medical department in 1857 and retired in 1899. Since then he devoted his energies to philanthropic and religious work, chiefly in Lancashire.

Dr. Joseph May, J.P., died on the 8th inst., at the advanced age of 90, at Rathfriland, County Down, where he had practised all his life and was greatly esteemed and beloved.

A premature death seems that of Dr. Tom Walker of Manchester, who has died at 37 after a remarkably strenuous career. He began as a pupil teacher in a Board school, won a scholarship to a training college, and qualified as a schoolmaster; worked at teaching for six years; took the B.Sc. Lond. Then, having reached his 28th year, he turned to medicine, entered Owen's College, won a scholarship, took his double qualification (1901), the M.B. 1903, and B.S. 1905. He was for a time a demonstrator at Owen's College, and filled the various house appointments at the Royal Infirmary. He hoped to become medical officer of an educational authority, for which his qualifications seem to show he was most suitable, and those who knew him assert that his personal fitness was just as exceptional.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE CHOLERA — REMOVING LEPERS — TRIAL OF CHOLERA SERUM—NEW CIVIL HOSPITAL TO BE BUILT—RETURN OF DR. STITT OF THE NAVY.

MANILA, Sept. 30, 1906.

THERE has been a great improvement in the cholera situation in Manila, and the Island of Luzon generally. Only a few scattered cases per day are being reported, but the disease in the Province of Iloilo, of which mention was made in the previous letter, has been slowly spreading, and there have been a total of 574 cases and 463 deaths since the outbreak in the early part of September. Cultures taken from some of the cases at autopsy were forwarded to Manila for examination, and the Bureau of Science reported that the cholera spirillum of Koch was positively present, thus absolutely confirming the presence of the disease in that province. The disease had been diagnosed as cholera nostras, and, notwithstanding the fact that the death rate in some of the towns had increased eight or ten per day over the normal rate, yet it was only after the positive confirmation of the Bureau of Science, and after the activity of the Insular health officials was seen, that the local authorities were awakened to the reality of the danger which threatened them.

There could be no stronger argument in favor of the need of more and better facilities in the education of the native physicians in the provinces, and for the elimination of the *mediquillo* and *practicante*. If the nature of the disease had been recognized in the beginning, and proper measures taken, it would probably have been an easy matter to stamp out the infection, and hundreds of lives and thousands of dollars in money would no doubt have been saved.

The campaign against cholera which was inaugurated in the Province of Tayabas was brought to a successful conclusion during the latter part of September. This is another example of what may be accomplished when modern methods are intelligently applied to the eradication of the disease. In this instance, through efficient management, the disease was not only confined to those municipalities which were infected before the arrival of the Bureau of Health agents, but was entirely eradicated, with only the loss of a few lives.

Owing to the disturbed conditions with regard to peace which have existed during the past three months in the Provinces of Samar and Leyte, it was not possible to remove the lepers from these provinces, as had been contemplated. It has therefore been decided to remove all the lepers from the Island of Panay, where there are supposed to be about 300. They are to be removed to the Culion Leper Colony before the first of November; thus another sorely afflicted island will be freed from this loathsome disease. In the islands from which the lepers have so far been removed it will be very interesting to note the frequency with which cases occur in the future.

Nothing further has been heard about the outbreak of cholera which occurred among the Moros in Mindanao, near Camp Vickars. The military authorities established a quarantine around the infected center, and it is presumed there has been no further spread of the disease.

In reporting the number of cases treated by Dr. Denier, the bacteriologist from the Saigon Pasteur Institute, it was inadvertently stated that he had treated eighteen cases, with a mortality of 74 per cent. On further investigation it was found that two of these eighteen cases were considered by him to be moribund, and he did not deem it advisable to inject any serum, so that the correct figures

should stand: Treated, sixteen cases, with nine deaths and seven recoveries, which gives a mortality of 56 per cent.

The "reorganization committee," which was appointed for the purpose of making recommendations to the Philippine Commission with a view to more economical administration, has made the following pertinent statement with regard to the present Civil Hospital: "The present Philippine Civil Hospital buildings and site are so expensive and unsatisfactory that your committee respectfully urges the immediate construction of the nucleus of a general hospital as a measure of economy as well as an essential to efficiency. The present rental charge is 12,000 pesos per annum, which, at the rate of the last bond issue, would be the interest on approximately 400,000 pesos. The number of employees now required by reason of the poor arrangement of wards would be able to care for a larger number of patients in a properly arranged establishment. The land immediately adjoining the grounds of the present hospital is so low and in such an unsanitary condition that, according to a recent survey, about 50,000 pesos would be required to make the location even tolerable. It is reported that inmates of the hospital have contracted diseases traceable to the conditions just described." However, this matter is now receiving careful attention, and plans and recommendations are actually before the Commission for action. It is believed that the necessary appropriations will be made in accordance with the recommendations of the reorganization committee.

Dr. E. R. Stitt, Commander, U.S.N., who has been engaged in special research work in the tropics, and more particularly in Manila, has been ordered to return to the United States Naval Medical School at Washington and resume his duties as instructor in that institution. Before going to Washington he will inspect the Naval Hospital at Yokohama and make such recommendations with regard to the installation of a modern system of sewage disposal as may seem to be desirable.

Progress of Medical Science.

Boston Medical and Surgical Journal, November 1, 1906.

Dangers from Use of Lead Pipe in Water Systems.—Two cases are detailed by H. C. Baldwin. In both the lead poisoning followed the introduction of a municipal water supply. An epidemic of colic, indigestion, and debility broke out in the community, but the nature of the trouble was not recognized. It was found that the water acted on the pipe running from the street main to the houses. Both of the patients were young persons and showed a condition rarely appearing in adults, namely, a paralysis of the leg extensors as well as of the hands. The action of the water on the pipes has been found to be the carbonic acid present in different waters. This varies from time to time, so that a water safe to-day may be harmful at some future time. Ground waters contain as a rule more carbonic acid than do surface waters.

New York Medical Journal, November 3, 1906.

The Cold Wire Snare in the Removal of Faucial Tonsils.—H. P. Mosely advocates this method of tonsillectomy and exhibits a new snare (figured). He claims that with this instrument the tonsil can be removed as quickly as with the ordinary tonsillotome, and with but little more pain. Hemorrhage is practically absent. For flat tonsils the method is especially valuable. The snare presented has the merits of strength, easy application, and can be easily threaded.

The Possible Dissemination of Tubercle Bacilli by Insects.—S. E. Weber has made some observations along the line suggested by the title of his paper with reference to small forms of insects embraced in the Linnæan order of Neuroptera which are known as the psocidæ. These insects are found in abundance in barns and other buildings where animals are housed. On account of their habits it is evident that they are the intermediate hosts of some of the protozoa and other forms of parasitic life affecting the domestic animals. This forms one type of disease transmission. The other type is that in which the insect serves as a carrier only, and this is the form suggestive of the dissemination of tubercle bacilli. The psocidæ are, as their name implies, chewing insects, which fact differentiates them from the suctorial insects, and they fancy farinaceous food, for which reason they are found about the feed chests, granaries, and feed troughs or mangers of animals. It is to the atropedæ, a wingless subdivision of the psocidæ, or rather those species with rudimentary wings, which do not fly, that these researches are directed. The author figures in his paper some of the common forms of insect life which he thinks may serve as transmitters of the tubercle bacillus. These organisms are known as *Clothilla ocelloria, Lepinotus inquilinus* and *Dorypteryx pallida.* It is believed that some of these organisms consume the crusted admixture of saliva, sputa of infected cows, meal attached to feeding troughs, etc., and that they themselves become mixed up with the hay and grain fed to other animals; thus they may be the medium of conveying tubercle bacilli from one animal to another. Tubercle bacilli have actually been found in the stomach contents of the clothilla. In the dwellings of man the atropedæ may be found on starched goods in drawers, in bed clothing, generally in spare rooms, on books and papers, upon the walls and floors, on window curtains, and upon all kinds of clothing. The nymphs and mature forms of these species have been found on eatables, such as potatoes, onions, apples, pears, dried corn, beans, strawberries, raspberries, blackberries, and tomatoes. In fact, they may be found on anything which has been in a vehicle stored in some out building in the form of a basket, box, bag, or measure of capacity. Such articles often remain undisturbed until the season comes along, and the products mentioned are to be put on the market. It is at such a time that the author has often found these vehicles to contain the insects in abundance. This is the chief means through which they become attached to the food for human consumption. A further source of danger through which they may gain access to the food of man is from the granary conveyed through the wheat or any other grain that may be ground for flour. The process of cooking, however, obviates to a certain extent this means of dissemination. But the food is not the only means through which these insects may convey tubercle bacilli to man, for their habits prove that they are adapted to carry the contagion directly to wearing apparels from contaminated sources where they have been feeding.

Artificial Cycloplegia in Errors of Refraction.—The paper of M. L. Benoit is very largely a review of the work of Troncoso, who divides cycloplegics into three classes: First, those with slow effect, such as atropine and daturine; second, those whose effect passes with much rapidity, *e.g.* hyoscine; and third, those with a very brief effect, such as scopolamine and homotrapine. The authority referred to has published tables of 1,000 cases from private practice in which the refractive conditions have been studied with the utmost care. Concerning the choice of a cycloplegic Dr. Benoit says that of the first class, above referred to, the only one used is atropine, three instillations being made daily in the upper part of the cornea, holding the eyelids open and the lower one somewhat everted, pressing with the index finger the inferior lacrymal canal in order to prevent atropine from getting through the nasal duct in the nostrils, and by absorption producing toxic symptoms. In children also the use of atropine for five or six days is absolutely necessary to paralyze accommodation. Their loss of time from school should not be taken into account. In adults until forty-five years old the most used of the cycloplegics is homatropine in cumulative doses, which has the advantage of paralyzing the accommodation for forty-eight hours only. Its results, however, are not absolutely satisfactory in patients less than twenty-five years old and who may suffer from ocular fatigue due to overwork. In these cases one may use hyoscyamine, the effects of which last less time than those of atropine. This drug has the inconvenience, however, of varying in its effects, in which case we should prescribe the neutral salt, the solution to be filtered through paper. Scopolamine is a very light cycloplegic which can be used advantageously in a few cases, but it has the inconvenience of sometimes producing toxic symptoms, vertigo, dryness of the throat, etc. Duboisine presents the same disadvantages. Moreover, in the choice of a cycloplegic we must bear in mind the patient's age and occupation, and the form of ametropia present. Busy men have but little time to give up to these matters and the rapidly acting remedies must be employed.

A Rational Treatment of Habitual Constipation.—D. H. Murray thus describes his method. All anal lesions are corrected. The procedure referred to below is followed every fourth day until the bowels act without help. The patient is placed in the Sims position and an electrode after the Ewald pattern, with a perforated soft rubber shield, is passed into the sigmoid. The rectal electrode is connected with the posi-

tive pole, and rubber tubing also connects it with an irrigator filled with normal saline elevated about three and a half feet above the patient. The negative electrode is made of well-padded sheet lead and covered with a towel wrung out in hot normal saline. Thus we have an electric saline douche which quilts the intestinal mucosa and at the same time gives a stimulus to the muscular coat. The saline should flow very slowly and from ten to twelve minutes be devoted to this part of the treatment. From one to two quarts of fluid are thrown into the sigmoid and descending colon. The patient is then allowed to go to the toilet, where a free evacuation takes place, leaving the intestinal mucosa clean. After this the patient returns to the table for the last half of the treatment. This consists in throwing one ounce of an emulsion of olive oil (one pint), iodoform (one dram), bismuth subnitrate (two ounces) into the descending colon. This is followed by one to two ounces of some dilute astringent or antiseptic solution of hydrastis. The iodoform is omitted from the emulsion if the patient has an idiosyncrasy that would make its use unadvisable, but the author finds that the patients do better when using the iodoform. After throwing the medicament into the sigmoid, the patient is kept for about ten minutes on the table, so tipped that the hips are elevated considerably, allowing the emulsion to gravitate high up in the colon.

Journal of the American Medical Association, November 10, 1906.

Headache and Eyestrain.—G. M. Gould claims that a vast majority of all cases of headache, certainly nine-tenths, are due to eyestrain beyond question, and that with or without this headache a large indefinite proportion of digestive, nervous, and psychic disease is due to the same cause. He accuses the ophthalmologists of being in a state of narcotism on this subject, and textbook writers and medical instructors are, he thinks, almost criminally indifferent to the matter. The general practitioner in the country, and also in the cities to some extent, is far more alive to the truth than are the specialists. He says it is, of course, beneath the dignity of most neurologists to care about the cure or cause of any disease. He believes that the explanation of all this is the lack of skilled refraction work. Until we establish a serious and scientific refraction school the evil will continue, and where there are few skilful and careful refractionists in the country who would agree in their diagnosis in one case there are 5,000 who would disagree, root and branch. There are, he says, at least 15,000,000 American children and adults afflicted with lateral curvature of the spine, and this he attributes largely to unrecognized ocular defects. To this he attributes largely the growth and success of osteopathy, Eddyism, and other quackeries. The hope of progressive and helpful medicine, he claims, lies in the general and country practitioners, and until they secure the establishment of at least one serious refraction school with a two- or three-year obligatory course of post-graduate study the ophthalmologists will not agree.

Headache from Aural Disease.—P. Hammond says that headache from aural derangement is more likely to be misunderstood as to its cause than that from ocular trouble, notwithstanding its possible severity, because it is not so directly associated with conscious functional defect of the special sense, especially the chronic forms of aural headache. Yet it is fairly common, the more so because of the intimate relations of the innervation of the ear and the central nervous system. In young children, as Gradle has shown, a continuous headache is likely to occur from slight obstruction of the Eustachian tubes which is at once temporarily relieved by inflation of the middle ear. For permanent relief, steps should be taken to remove any adenoids or other causes of obstruction of the Eustachian tubes. In the more chronic adhesive processes in the internal ear, absolute pain is seldom felt, but there may be a feeling of fullness or of pressure in the brain. When headache is due to acute middle-ear inflammation it is usually relieved by paracentesis. Politzer thinks that some of the most severe cases are due to hyperemia transmitted to the scalp. Severe pain with aural disease, not confined to the region of the ear and resistant to treatment, suggests intracranial trouble. The most enduring types of headache are seen in old cases of chronic suppuration, in which masses of indurated products form in the cavities of the middle ear and mastoid. The pain is usually dull and heavy, but is subject to exacerbations which may be brought on by the use of injections, especially of hydrogen peroxide, which swell up the masses and cause pressure Caries also, especially with granulations, may be the cause of headache in these cases. The diagnosis can often be made by the discharge, but if the suppuration is slight or absent the most careful examination may be required. It is very common for an ear that has formerly suppurated to remain apparently dry for many years. Treatment should aim at removal of all diseased tissue. Sometimes this can be accomplished by introducing astringent and antiseptic solutions into the ear, but if bone caries is present it must be thoroughly removed. In advanced cases the radical mastoid operation may be necessary. In any event cessation of the discharge will probably relieve the headache.

Constitutional Headaches.—G. L. Walton discusses the headaches complained of by neurotic individuals, often presenting physical and mental degenerative stigmata, and which are resistant to treatment, although organic or toxic causes cannot be discovered. The correction of ocular or nasal defects or of uterine deviations, etc., is also negative as regards relief of the headache. It is, he thinks, perhaps not what a perfectly normal person would call a headache, but is rather a sort of uncomfortable sensation that has become so irksome by the focusing of the patient's attention on it that at last only such terms as agonizing or excruciating seem adequate to describe it. The sense of mental fatigue, for example, may be more acutely realized than by the ordinary individual, besides being really aggravated by the patient's inability to relax the mental activity. These patients are irritably sensitive and self-conscious, and the headache is only another sign of general degenerative deviation. The dividing line between this variety and the reflex headaches is perhaps not sharply drawn and there are doubtless many cases in which the two elements, constitutional and reflex, are so combined and interdependent as to make the distinction difficult. The treatment of constitutional headache is not very hopeful, since a cure demands an entire change in the patient's make-up, including susceptibility to fatigue. Walton advises the correction of ocular, nasal, and other defects to give the benefit of the doubt as to a possible reflex factor. It is well, he states, to build up the patient's general condition not only by medicines, but also by all other available means. If mental training can aid in the modification of the obsessive tendency, a step is made in the right direction.

Chronic Headache from Pelvic Disease.—F. E. Davenport, understanding by chronic headache, not a constant pain, but one recurring at more or less frequent intervals and of a uniform type, finds it not a very common complication of pelvic disease. In over 1,000 cases from his notebook, he finds it mentioned only ninety-eight times, or in about only 10 per cent. In about one-third of these the headache was associated with menstrual disorder, and the one abnormality constant in these cases is diminution in the amount of blood lost, either from scanty flow in the regular periods or from delayed menstruation. The headache usually comes on before the flow, lasts one or more days, and ceases with its appearance. It is evidently due to a pelvic congestion, manifesting itself by disturbances elsewhere, and the headache is one of these. He gives his conclusions as follows: 1. Chronic headache associated with pelvic disease is accidental, except when it is the most marked symptom of irregular or scanty menstruation. 2. In other pelvic disorders it is usually an expression of the neurasthenic condition of which the pelvic lesion is merely one factor or accessory predisposing cause. 3. Treatment for the first class of cases consists of general building up measures and local depletion. 4. Treatment of the second class consists in the rectification of existing local trouble unless specially contraindicated, but the main reliance is to be placed on prolonged and systematic treatment of the neurasthenia. He does not think that headache is a common symptom of other pelvic conditions. As a local depletory measure, when such is indicated, he says nothing is so simple in application and so efficient as the use of wool tampons soaked in glycerin. The profuse watery discharge they produce relieves the engorged vessels and equalizes the circulation.

Foreign Bodies in the Bronchi.—Emil Mayer reports five cases in each of which a foreign body was removed from the bronchi. In one case the patient, a child of five, died. In the diagnosis, in addition to the symptoms, Mayer advises the use of the Roentgen ray. In regard to the treatment he advises early operation unless there is some reason of great importance for delay. In very young children he prefers a tracheotomy to

direct bronchoscopy, as the operation is more quickly accomplished, and a much larger tube can be inserted, if necessary, in the larynx. As a result of his experience he concludes that: 1. The diagnosis may often be fully established by auscultation and percussion, and the use of Roentgen rays may not always be depended on. 2. Solid bodies producing occlusion should be operated on immediately. 3. Tracheotomy affords by far the best chance for the patient. 4. The public, as well as the profession, is in great debt to Professor Killian for his valuable instruments and his work on "Bronchoscopy," resulting in the saving of many lives that otherwise would have been lost.

The Lancet, October 27, 1906.

Cases Treated by the Injection of Bacterial Vaccines.—A series of thirty-four cases is reported by E. Turton and A. Parkin. Their results are, on the whole, favorable and they think that there is a great future for this plan of treatment. They admit some failures, but they have also scored some notable successes, particularly in two cases of *Bacillus coli communis* infection. Broadly speaking, they find that acute cases are the more difficult to cure, because there may not be time enough to raise the opsonic power to such a degree as to influence the course of the disease; and at present we do not know much about the proper dosage necessary to do the greatest amount of good without doing evil—*i.e.* producing a dangerous negative phase. Nor is it possible to cure a case of fifteen years' chronicity in a like number of weeks. They have not used the injections in any haphazard sort of way, but only after careful estimation of the result of each injection at the beginning of the treatment. Later, when it is found from a study of the opsonic chart how long the result of each injection lasts—what might be termed the periodicity or opsonic wave—then the estimations can be made less frequently and the injections continued with certainty.

An Unusual Case of Thrombosis of the Lower Part of the Lateral Sinus, of Aural Origin.—The patient of A. Bronner was a healthy boy of fourteen years with an aural discharge for some years and mastoid pain for several days before coming under observation. The symptoms remitted, but on the tenth day of observation it was deemed necessary to operate. Some pus was found in the mastoid cells, but the lateral sinus was apparently quite normal, the dura was not thickened, and there was no thrombosis. Rigors recurred and crepitation over one lung, and the wound was reopened on the third day. The dura appeared quite normal, there was no extradural abscess, and the sinus was not thrombosed. An incision was made into the sinus and there was a sudden gush of blood, which was difficult to control. There was no swelling or tenderness over the jugular vein. There was no papillitis, although the disks were rather congested. Both lungs became involved and there were signs of commencing endocarditis. The cerebellum was explored with negative results. The boy died on the seventeenth day. The postmortem examination showed a small purulent clot in the jugular bulb. The lateral sinus itself was not thrombosed and the walls were nearly normal, with perhaps some thickening in the lower part. The author notes the following points of interest in the case: There never was any swelling or tenderness over the mastoid or over the jugular vein. The walls of the lateral sinus were practically normal and the thrombosis was situated low down in the bulb of the jugular. We should, in all similar cases, not only examine the upper part of the lateral sinus, but also the lower part as far down as the bulb of the jugular. The sinus may be apparently normal and the thrombosis be situated lower down. In fact, the author thinks we should always, in cases of mastoid disease with recurrent rigors, ligature the jugular, even if we cannot find any definite lesions in the vein. The walls may be diseased over a very small area and a small septic clot form there, which would give rise to septic disease of the lungs. Had the jugular been tied early in this case the boy's life would probably have been saved.

Pericarditis Following Head Injury: Paracentesis.—J. Gillan reports the case of a boy of sixteen years who was thrown against a rapidly revolving wheel and sustained a severe lacerated wound of the neck and mastoid region. After the separation of the sloughs the soft tissues did well, but a layer of dead bone remained in the mastoid groove. Evidences of sepsis within the skull appeared. The sequestrum came away later, but evidences of pericardial infection became evident. On the seventh day paracentesis of the pericardial sac was done, and from that time on the progress of the case was steadily toward recovery. Attention is called by the author to the following points of interest: (1) The great and immediate relief obtained by the removal of a relatively small quantity of fluid. The actual quantity removed was six ounces six drams, and, considering the extent of the dull area and the small impression made on it by the withdrawal of this quantity, it is obvious that the amount of fluid remaining must have been very large compared with what was withdrawn. (2) The rapid absorption of the remaining fluid. (3) The fact that a pericarditis, presumably the result of a septic process, should pass off so quickly and completely without the formation of pus within the pericardium. The other common causes of pericarditis could be excluded in this case. There was no Bright's disease. There was no other indication of rheumatism, nor was there a rheumatic family history.

British Medical Journal, October 27, 1906.

Perforation of the Colon in Hemorrhagic Typhoid.—In a patient (young male) of E. S. Molyneux, taken suddenly ill, a diagnosis was made of pneumonia. Inside of twenty-four hours the symptoms suggested perforation of some hollow viscus. Operation was refused. Death resulted in six days from the first symptoms. Autopsy showed bronchopneumonia present at both bases. The Peyer's patches in the ileum were much swollen, especially those close to the cecum. Some showed sloughs. In other cases the sloughs had separated. In the ascending colon the solitary follicles were enlarged. A small, round perforation was found in the ascending colon, close to the hepatic flexure. There were many hemorrhages into the walls of the small intestine. A large extraperitoneal hematoma was found under the upper part of the left rectus; there were some smaller hemorrhages into the right rectus.

Nitrite of Amyl in Post-Partum Hemorrhage.—J. R. Keith reports a case successfully treated. The patient, a 4-para of thirty-three years, had suffered from hemorrhages at previous labors and had been debilitated during her last pregnancy. All went well in the labor until the extraction of the placenta, when profuse flooding commenced. This was, however, almost immediately arrested by the inhalation of a capsule of nitrite of amyl. After a hot saline infusion of two pints per rectum the pulse, which had run up to 120, soon improved, and in less than an hour was 86. No further trouble followed.

The Bacterioscopic Analysis of Excremental Pollution.—E. Klein declares that in judging of this form of excremental pollution, our attention should be particularly directed to the *Bacillus coli communis*. One of the principal differential characters of this organism is its power to ferment lactose. The special medium used for its growth is a mixture of sodium taurocholate, peptone, glucose, litmus, and water. Both the *Bacillus coli* and the *Bacillus typhosus* grow well in this taurocholate broth, making it uniformly turbid in twenty-four hours at 37° C.; but if *Bacillus coli communis* be present, on slightly shaking the tube copious evolution of minute gas bubbles will be noticed on inspection with a hand lens. In a large number of tests made with this medium Klein has invariably found that if after twenty-four to forty-eight hours' incubation the tubes show marked turbidity, and on slight shaking show copious evolution of gas bubbles, one can be certain that *Bacillus coli communis* is present. This taurocholate broth has one further advantage; it is this: While it allows the growth of fecal streptococci it inhibits some other streptococci. He has made experiments with streptococcus directly isolated from human fecal matter by Drigalski-Conradi plates, with streptococcus of saliva and with *Streptococcus pyogenes*, and he has found that while the streptococcus of human feces grows well in the taurocholate broth—at 37° C. it produces in forty-eight hours copious growth in the form of granules and flocculi with slight general turbidity of the broth—the others (streptococcus of saliva, *Streptococcus pyogenes*) produce no growth, the broth remaining perfectly clear.

Some Principles of the Treatment of Fractures.—J. E. Bowser notes that there are two important features introduced into the modern treatment of fractures. First, the early employment of massage and movement, and second, the application of operative measures to ordinary cases of simple fractures. The use of the *x*-rays has also introduced new factors. He discusses especially the first of these topics, tracing the development of the giving up of the old traditional ideas of immobilization by rigid apparatus. He lays down the general principle that absolute immobility is not essential to bony repair. This is shown in the repair of fractured ribs. The modern method reduces the danger of wasted muscles, stiff joints, weak limbs, and pain on attempted movement. The massage to be advised in fracture cases differs entirely from that

of the professional masseurs. It consists in a soft, smooth, uniform, above all painless, mobile pressure in the direction of the venous current. At first little more than a caress, the degree of pressure is progressively increased so as to act gradually upon the deeper structures. Ordinarily, massage is practised from the very beginning of the treatment, and repeated daily in *séances* of half an hour's duration. Massage prepares the way for movement. After massage, passive movements of the joints, which before had been impossible on account of the pain that they caused, become surprisingly easy. They are, therefore, always practised at the end of the *séance* of massage. These movements, whether passive or active, are necessarily of slight extent, being limited by two imperative conditions: First, they must be painless, and second they must not cause new displacements of the bony fragments. As a result of these movements, pain is relieved, muscular spasm is relaxed, and swelling is reduced. Adhesions are prevented. Massage shortens the duration of treatment. The chief factor is the condition of the nerves, muscles, and joints of the limb at the moment when bony union is complete. Instead of being crippled by immobilization, they are fit and ready for immediate use. It is estimated that the time that requires to elapse before a patient is permitted to resume his ordinary occupation is diminished by at least one-third.

Hospital Treatment of Curable Cases of Mental Disorder.—E. Goodall does not think it right from a scientific standpoint to exclude one kind of illness, viz., mental disease, from participation in the benefits of the system which has been organized for the treatment of all other forms of sickness and under which cases of disease and injury which offer prospects of cure and alleviation are received into hospitals. He advocates the establishment of a hospital for curable cases of mental disease and elaborates the plan on which he thinks it should be conducted. He has also come to the conclusion that it is time an attempt was made to arouse public opinion to the importance of putting into force the procedure of forbidding under severe penalties the marriage of persons released from asylums, and he believes that like penalties should be inflicted in all cases in which the responsibility for illegitimate procreation among this class of persons can be fixed.

Berliner klinische Wochenschrift, October 22, 1906.

Poisoning by Oil of Sesame.—Rautenberg says that last year he observed six cases of peculiar toxic symptoms following the use of oil of sesame as a rectal injection, a third to a half a liter being given. These patients for the most part manifested prostration, coldness of the extremities, and marked cyanosis of the face and limbs. The condition lasted for twelve to thirty-six hours, and although the presence of methemoglobin in the blood was suspected, it was impossible to demonstrate the spectrum of this substance either in the blood or urine. The author has just had another instance of the same sort, in which 400 c.c. of the oil were given. In this case the symptoms were more severe than in the preceding ones and unconsciousness, fixed pupils, pulmonary edema, and respiratory failure resulted. It was only with difficulty that the patient could be resuscitated, and the author was able to demonstrate the characteristic absorption band of methemoglobin in the blood spectrum, and methemoglobinuria was also present. The author was unable to discover the reason for the production of this serious form of intoxication by the sesame oil, but states that he believes that it was due to some commercial adulteration, and emphasizes the necessity for care in employing a new supply for the first time. The oil that was used last year and that which caused the symptoms in the present case were obtained from two different sources.

Münchener medizinische Wochenschrift, October 23, 1906.

Acute Intestinal Tuberculosis in Adults.—Passler states that tuberculous infection of the intestinal tract may occur in adults independently of involvement of the lungs or other organs, and may go on as a clinical entity with febrile course leading to death in a few weeks. He describes two cases of this rather unusual condition, one in a man of forty-four years and the other in a woman of about the same age. In each instance pulmonary symptoms were almost or entirely absent and the diagnosis remained doubtful until the time of death. In both of these cases a few staphylococci were discovered in the blood, and the author suggests that the association of pus organisms with the tuberculous infection may have something to do with the severe course in such cases, just as takes place in pulmonary tuberculosis. As no tubercle bacilli can be found in the sputum in these cases, the author advises that in grave febrile disorders that present difficulties in diagnosis the stools also should be examined for tubercle bacilli.

Deutsche medizinische Wochenschrift, October 25, 1906.

The Helmholtz Treatment of Hay Fever.—Boesser endeavors to rehabilitate in a somewhat modified form a treatment of hay fever said to have been employed with good results by Helmholtz on his own person. Boesser uses a 1 per cent. solution of a double salt of caffein consisting of two parts of hydrochlorate of quinine and one part of pure caffein. Whereas the hydrochlorate of quinine is soluble only in thirty-four parts of water, the caffein salt is soluble in equal parts of slightly warm water. As soon as the patient notices the first evidence of the onset of an attack a few drops of the solution are dropped into the conjunctival sac and the patient lies down for a few minutes, during which time moderate or severe burning is felt in the eye with increased secretion of tears. These wash the remedial solution through the tear duct into the nasal passages and over all the mucous membrane from which the reflex symptoms of hay fever can originate. The ocular irritation subsides in a few minutes, the attack is aborted, and the effect is said to persist from four to six hours.

Experimental Observations on the Behavior of Bacteria in the Large Intestine.—Rolly describes a series of experiments which lead him to the belief that the large intestine is capable through its own activity, partly through elimination, and partly perhaps through direct destruction, to dispose of any foreign bacteria that may enter it, and to restore the floral normal to the colon. On the other hand, this process was greatly impeded when the mucosa was damaged by the injection of acids or alkalies, and it appears that the normal activity of the mucous membrane plays a large part in the bacterial content of the gut. Disease of the mucosa alone is therefore sufficient to permit an excessive proliferation of microorganisms.

French and Italian Journals.

Eighty-five Gynecological Operations by the Abdominal Route.—Bégouin reports eighty-five major gynecological operations by the abdominal route without one death. Of these twenty-six were ovariotomies, thirteen were ovariosalpingectomies, and forty-six were hysterectomies. The writer attributes most of his success to the fact that he has laid great stress upon the necessity of increasing the resistance of the patient before operation, especially in the cases of uterine cancer and hemorrhagic fibromatous growths. After the operation he has made use of serum and spartein if the heart was weak. He has also taken great care in the disinfection of the vagina, using cyanide of mercury and peroxide of hydrogen for this purpose for several days preceding the operation. This seemed especially essential in the cases of carcinoma.—*Gazette Hebdomadaire des Sciences Médicales de Bordeaux,* September 23, 1906.

Ovarian Cyst with Sarcomatous Degeneration.—J. Abadie and X. Bender report this case. The patient, a woman forty-four years old, had had three abortions. The last abortion occurred four years before the patient's entrance to the hospital. The first appearance of the tumor was noted one year after the last abortion. Pain had increased gradually, the most severe paroxysms being felt in the right iliac fossa. The tumor was very large and seemed to be divided into two parts. Ascites was marked. Laparotomy revealed a polycystic growth. It was divided into several parts by partitions of very resistant fibrous tissue. Adhesions to the surrounding tissues were numerous. The patient died three months later. Microscopical examination of the neoplasm showed it to be a multilocular cyst which had undergone sarcomatous degeneration. Peritoneal metastases were noted.—*Annales de Gynécologie et D'Obstetrique,* September, 1906.

Action of X-Rays on Tuberculous Adenopathies.—Giuseppe Caccia and Carlo Francioni have used the *x*-rays in four cases of tuberculous glands of the cervical region, the glands in one of them being of enormous size. This patient was a baby of five months of age, and the glands were of such size as to give rise to a possible diagnosis of lymphosarcoma, although it was finally decided to be atypical lymphatic enlargement of tuberculous nature. After the first application the glands diminished in size and continued to diminish until they had disappeared. At the same time the glands of the opposite side of the neck had become enlarged, and the child had fever and was in failing health. The spleen had also become enlarged. A fatal result ensued after some months. The autopsy showed the glands to be tuberculous, and the infection had extended to the intestines, mesenteric glands, and spleen. The remaining three cases were not at all benefited by the treatment. The conclusion arrived at is that radiotherapy is valueless in tuberculous adenitis of the ordinary type, but that it is of value in the lymphomatous type.—*Rivista Critica di Clinica Pediatrica,* September, 1906.

Book Reviews.

CHEMISTRY: GENERAL, MEDICAL, AND PHARMACEUTICAL, INCLUDING THE CHEMISTRY OF THE U.S. PHARMACOPŒIA, A Manual of the Science of Chemistry and its Application to Medicine and Pharmacy. By JOHN ATTFIELD, F.R.S., M.A., Ph.D., F.C.S., etc., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. New (19th) edition, specially revised by the Author to accord with the New U. S. Pharmacopœia, edited by LEONARD DOBBIN, Ph.D., F.I.C., etc., Lecturer on Chemistry in the University of Edinburgh, etc. 12mo, 760 pages, illustrated. Philadelphia and New York: Lea Brothers and Company, 1906.

A BOOK which has reached its nineteenth edition may be judged to have proved itself worthy of the confidence of that class for which it was written—in this case students of medicine and pharmacy. The reason for this popularity is manifest to one who merely looks through the book, reading a paragraph here and there, and much more to the student who takes it as his guide. The author has the faculty, which so many teachers and writers of text-books unfortunately lack, of keeping himself always at the student's level, leading him along gradually from the easy to the more difficult, explaining each step as he goes along, and never taking for granted that the student knows anything which has not yet been told him. At the beginning of each section there is a paragraph of "advice to students," showing them how they can, with the greatest profit to themselves, go through the succeeding pages, what part is to be simply read, and what part studied with care; and throughout the directions are so clear that any person of ordinary ability can, with this book as his only guide, and without the aid of a teacher, obtain a grounding in chemistry sufficient, and more than sufficient, for his needs as a physician or pharmacist. We would commend the page at the beginning of the work, on "Advice to Students Respecting Their Object in Studying," not only to students of chemistry, but to all students of whatever subject. The author here warns against studying merely by way of preparation for examination, for this, he says, is to mistake the means for the end. The object of study is to fit oneself for one's position in the world, and the student should therefore work diligently, study thoughtfully and deliberately, and, above all, be thorough. The end and aim of the study should be to acquire an education—this done, the examination will take care of itself. The student who will conscientiously use this book in the manner pointed out by the author cannot fail to acquire a knowledge of the essentials of chemistry that will not only carry him through any examination to which he may be subjected, but will remain by him as a possession for life.

LA MÉLANCHOLIE. Étude Médicale et Psychologique. Par RENÉ MASSELON, Médecin-adjoint de l'asile de Clermont de l'Oise. Ouvrage couronné par l'Académie de Médecine. Paris: Félix Alcan, 1906.

MASSELON offers in this little volume an analytical study of melancholia, which he regards not as a form of insanity, a disease *per se*, but as a syndrome which should be known as "the melancholic state." According to Kraepelin, melancholia is a disease of the presenile state, "which is the morbid expression of the feeling of increasing helplessness which seizes old people." Masselon, however, looks upon "pure, essential" melancholia in the manner of Joffroy, namely, as a syndrome which may occur as the result of a variety of morbid states (p. 258). It is not only more the result of senile involution than of tuberculosis, the puerperal state, etc., but is the result of two factors, a predisposed brain and an organic state which induces a lowered vitality. Masselon's monograph makes interesting reading, though his conclusions may not be accepted by every authority.

OPERATIVE GYNECOLOGY. By HOWARD A. KELLY, A.B., M.D., LL.D., F.R.C.S. (Hon. Edinb.), Professor of Gynecological Surgery in the Johns Hopkins University, and Gynecologist to the Johns Hopkins Hospital, Baltimore, etc., etc. With Eleven Plates and Seven Hundred and Three Original Illustrations for the most part. By MAX BRÖDEL, Associate Professor of Art Applied to Medicine in the Johns Hopkins University. Second Edition. Revised and Enlarged. Volume I., Volume II. New York and London: D. Appleton and Company, 1906.

DURING the nine years that have elapsed since the appearance of the first edition of Professor Kelly's remarkable work gynecological practice has seen many changes more or less sweeping in character. For the most part, however, these were foreshadowed in the original "Operative Gynecology," and in many instances, such, for example, as in the cystoscopy of the female bladder and the diagnosis of ureteral and pelvic calculi, they were the outcome of methods devised or elaborated by Kelly. In the present revision of his treatise the author, therefore, has not been obliged materially to alter his standpoint in any respect or to chronicle any radically new departures. In spite of this, the new work contains much fresh matter, and particularly it surpasses its predecessor in its illustrations, of which two hundred have been added. The inimitable drawings prepared by Professor Brödel for the first edition set a new standard for the illustration of medical books, and though his work has served as a salutory stimulus to other artists in this field, there is no doubt that these two volumes still stand alone, as examples of the best in art as applied to medicine. In the first volume the most important changes are found in the chapters on topographical anatomy, which has been enlarged, and in the discussion of perineal lacerations, which includes several new procedures for the repair of tears extending through the sphincter. The sections in diseases of the urinary system have also been amplified, and stress is laid on the technique of irrigating the renal pelves. The requirements of office gynecology have been met by the introduction of new matter in local and palliative treatments, uterine displacements and pessaries, and on menstruation and its anomalies. Dr. W. W. Ford has written a new chapter on bacteriology, and a section on the use of the *x*-ray in the diagnosis of renal calculi is contributed by Dr. F. H. Baetjer. The diseases of the hymen are discussed by Dr. George Gellhorn, and the chapter on inversion of the uterus has been rewritten by Dr. G. W. Dobbin. Changes have also been made in the chapter on the Bartholinian glands which have been brought into conformity with the recent work of Dr. T. S. Cullen, and a chapter on anesthesia has been contributed by Dr. H. W. Cook. In the second volume a new chapter on abdominal extirpation of the cancerous uterus with over fifty new illustrations is the work of Dr. John A. Sampson, and a new chapter on gynecological diseases in children has been written by Dr. Elizabeth Hurdon. Kelly considers that experience has shown that the objections made to the operation of ventral suspension are unfounded, but he now also describes, though without comment, Gilliam's operation of implanting the round ligaments in the abdominal wall. In the preface the author also refers to a description of the Alexander operation said to have been added, but a search of the index and table of contents fails to reveal this title. In the chapter on anesthesia brief mention is made of the value of blood pressure determinations in connection with operations, but the importance of determining the patient's condition by systematic observations during the course of severe operations or of using this method of judging how far it is wise to go when a series of operations is contemplated on the same patient at one sitting, is not brought out. The work has been improved where improvement was possible, and is no doubt destined long to maintain its preeminent position in gynecological literature.

OBSTETRICS. Vol. V of The Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of GUSTAVUS P. HEAD, M.D.; Vol. V., edited by JOSEPH B. DE LEE, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. With the collaboration of D. ROEHLER, M.D., and HERBERT M. STOWE, M.D. Series 1906. Chicago: The Year Book Publishers, 1906.

THE editor of this volume of The Practical Medicine Series has commendably kept in mind the object of the book and has included a fuller discussion of the purely practical phases of obstetrics, summing up briefly those of scientific interest. The book is thoroughly up to date, and the editor has greatly increased its value by his bracketed comments. The chapters on Eclampsia and on Operative Obstetrics are especially valuable as summaries of current work in these two fields.

THE SCHOTT METHODS OF THE TREATMENT OF CHRONIC DISEASES OF THE HEART. With an Account of the Nauheim Baths and of the Therapeutic Exercises. Illustrated. By W. BEZLY THORNE, M.D., M.R.C.P. Fifth Edition. Philadelphia: P. Blakiston's Son & Co., 1906.

THE fact that five editions of this work within eleven years have been issued, vouches for the increasing interest of the profession in methods not purely medicinal. The author cites cases and gives sphygmographic tracings, proving beyond a doubt the value of the methods made famous by Schott of Nauheim. In the present edition there have been few changes. However, the writer asserts strongly that after his latest experiences with the treatment he can prove that in aortic regurgitation we can administer the baths and the movements with safety and exceptionally good results, and that they are of marked benefit in cases of Raynaud's disease and exophthalmic goiter.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held November 1, 1906.

THE PRESIDENT, DR. CHARLES L. DANA, IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Ophthalmology. After the nomination of officers to serve during the ensuing year the scientific work began.

Report of the Committee on the Relief of the Medical Profession in San Francisco.—The President reported that, besides the $5,000 given by the Chamber of Commerce, 440 men had subscribed $5,791.10 and over thirteen medical societies had donated $1,990. Of this amount $7,474.58 had been sent to San Francisco. The report was approved and the committee discharged.

Demonstration of the Various Recently-Devised Electric Ophthalmoscopes, which Facilitate Ophthalmoscopy for the General Practitioner.—Dr. J. HERBERT CLAIBORNE made this demonstration.

Drs. PIFFARD, POOLEY, LESZYNSKY, ROOSA, GRUENING, AND DANA discussed these instruments.

Choroidal Diseases in Their Relation to General Diseases, and Particularly to General Infections, as Well as Autointoxications.—**Dr. G. E. DE SCHWEINITZ** of Philadelphia presented this paper. He said that the classification of choroidal disease was very unsatisfactory. Textbooks divided choroiditis into superficial and deep, and placed most forms in the suppurative or the nonsuppurative choroiditis. Dr. de Schweinitz suggested the following: (1) Choroiditis dependent upon specific infectious diseases; (2) choroiditis dependent upon diseases of definite organs, as of the liver and kidney; (3) choroiditis dependent upon diseases of the blood, notably the various anemias; (4) choroiditis dependent upon diseases of nutrition, gout, arthritis deformans, etc.; (5) choroiditis dependent upon intoxications, autointoxications, etc.; (6) choroiditis dependent upon diseases of the tonsillar tissues and sinuses. Basing choroiditis upon the ophthalmoscopic appearances, he had observed the following types: (1) Localized exudative choroiditis; (2) diffuse exudative choroiditis; (3) disseminated choroiditis; (4) serpiginous choroiditis; (5) the various types of simple choroiditis. Anomalous forms were met with in great number. In considering choroiditis dependent upon specific infectious disease, first stood syphilis, the lesions appearing first as a chorioretinitis, the retina being secondarily involved. In the acquired form the disease appeared from one to three years after infection. Syphilis gave rise to the disseminated form of choroiditis, but this was not pathognomonic in any sense of the term. It should be looked upon as a late manifestation, and might affect the choroid in a diffuse manner. This depended upon the infiltration of the choroid by the toxins of syphilis; the disseminated and circumscribed forms of the disease depended upon local deposits of the toxins of syphilis. Next to syphilis in importance he placed tuberculosis, and many cases of plastic choroiditis were due to tuberculosis. Many cases of disseminated choroiditis had been injudiciously treated by mercurials when tuberculosis was the cause. Besides syphilis and tuberculosis he discussed influenza, certain fevers, notably typhoid, and relapsing, when a localized exudative choroiditis was most frequently encountered, and croupous pneumonia. Dr. de Schweinitz concluded his paper by stating (1) that while syphilis was the most frequent cause of the forms of choroiditis dependent upon specific infections, it was not an exclusive one; there were tuberculosis and other specific infections, as diphtheria, influenza, and pneumonia; (2) while there was no known type of choroiditis pathognomonic of disease of single organs, it was not unlikely to affect the blood; (3) much evidence had been accumulated to show that certain affections, as ptomaine poisoning, as enterogenous autointoxications, must be given a definite etiology in choroiditis; many cases of choroiditis were dependent upon infection occurring through the tonsillar tissues; (4) each case of choroiditis not syphilitic in origin should receive careful study, including a searching examination especially of the secretions of the body, the intestinal tract in particular.

The Autointoxications.—Dr. E. E. SMITH, in presenting this subject, did not think that it was desirable to attempt any final classification of the various intoxications. He restricted his attention to the toxemias resulting from the formation of toxic substances within the body in other than specific infections, and distinguished the toxemias that resulted from the presence of an excess of physiological products and those toxemias resulting from products whose formation, though possibly tolerated in health, was not strictly physiological and which he termed pathological. He did not include systemic conditions dependent merely on the absence of a sufficient quantity of physiological products, as myxedema and cretinism. Many substances that in relatively small quantities were tolerated by the body without the production of any harm would in relatively large quantities produce such an inhibition of normal metabolism as to constitute an injury. Physiological products in sufficient amounts were sometimes toxic, and such physiological products were considered as waste products and products adapted to serve some purpose in the economy. In speaking of the waste products of the different excretory organs, he called attention to the fact that autointoxication by the products excreted through the lungs was accompanied by a deficient oxygen supply, but that the autotoxic factor was probably quite as responsible as the oxygen deficiency. The chief toxic factors here were carbon dioxide and the ammonium salts. The chemical substance responsible for the autointoxication resulting from renal insufficiency was not definitely determined. Experimental studies had made it evident that the toxicity of the urinary constituents was due to the salts of potassium and ammonium which gave to the urine more than three-quarters of its toxicity. These studies had failed to explain the uremic state, and we would have to look to disturbances in the physical condition of the protoplasm of the body cells for a part of the explanation of the uremic state. There was no established experimental proof that uric acid was toxic. Recent studies of nuclein metabolism indicated that the series of changes that began with nuclein breakdown and ended with uric acid destruction in the body were due to the activities of a considerable number of tissue enzymes or ferments. The uricolytic or destructive enzyme of uric acid existed chiefly in the liver and kidneys. In the toxemias of gastrointestinal origin there was retardation of hepatic function, and therefore the uric acid destruction normally accomplished by the liver was likewise retarded, and in consequence some uric acid escaped destruction and increased the amount eliminated. Regarding the purin bases, experimental study had shown that they were rather more capable of producing general toxic symptoms when injected into small animals than uric acid. On the other hand, there was no reason at present for believing that they gave rise to systemic intoxication in any diseased conditions. What was true of the toxicity of the purin bodies was also true of the hexane bases and other leucomaines. The toxic element in exophthalmic goiter had been attributed to the overproduction of the iodine products of the hyperemic thyroid, but we were not yet justified in regarding it as unequivocally established. Evidence had been obtained which seemed to indicate that sunstroke was accompanied by the development of autointoxication; but whether the products were physiological or pathological was not known. In considering the autointoxications due to pathological products, he referred to the products of degeneration of the nervous system, to acid intoxication, the toxemias of pregnancy, and gastrointestinal intoxication. The nervous

system participated in many systemic intoxications, the changes being of the same character and for the same reason as hepatic or renal parenchymatous degeneration. The nervous system might itself originate a toxic condition, as shown in general paralysis of the insane. The term acid intoxication signified that profound acidosis which was the cause of diabetic coma and less frequently of other active manifestations, notably persistent acid vomiting. The acid formed was chiefly betaoxybutyric acid. When the acid production reached an active point it constituted a profound toxic condition, and one should not neglect to consider its presence in the graver manifestations of diabetes mellitus, and also in any case of persistent acid vomiting, either in childhood or in adults, or in pregnancy. The toxemia of pregnancy was closely allied to acid intoxication; but the urine showed in addition marked relative increase of the aminointegers, indicating hepatic autolytic changes. The reader of the paper considered the toxemias of gastrointestinal origin at length. He discussed the secretion and action of the various digestive agents, and also the normal bacterial flora of the gastrointestinal tract. He was of the opinion that, notwithstanding the discovery that the colon bacillus had a strong inhibiting action on the growth of putrefactive organisms and that its function was probably a protective one, that we were warranted in concluding that it might not in itself be injurious by overabundance in the intestinal tract. He said the test for indican was so generally made use of that it was well to emphasize the limitations of its usefulness. It was only one product of intestinal putrefaction. There might be marked intestinal toxemia without excessive indol absorption. The other urinary products were skatoxyl, the phenols, the aromatic oxyacids, and the relative amount of sulphate in ethereal combination with these products. In this connection the condition of oxaluria should also be considered. Whether we had to deal with headache, lumbago, a cutaneous affection, an epileptic seizure, neurasthenia, or intestinal colic, the presence of a gastrointestinal toxemia might play a part, and should be given due consideration.

Drs. Charles J. Kipp of Newark, Charles S. Bull, and Hiram Woods of Baltimore, and others entered into the discussion.

Dr. G. E. de Schweinitz closed the discussion.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held October 25, 1906.

Dr. Arnold Sturmdorf in the Chair.

Presentation of Specimen of Pus Tube.—Dr. C. Clarence Sichel presented this specimen. The patient, 22 years old, eleven years ago was admitted to Mt. Sinai Hospital with a diagnosis of a left pyosalpinx. She was not operated upon at that time. Apparently there were no symptoms during the ensuing eleven years. At the end of this time she was brought to the hospital with a temperature of 102.5°, pulse corresponding, abdomen distended and tympanitic, tense and rigid. Her general condition was pretty good. The abdomen was opened in the median line and a large quantity of free pus was found under the incision. The tube was adherent and prolapsed into the pouch of Douglas, bound down by adhesions of all kinds. The tube was removed and drainage instituted in Douglas' pouch. An uneventful recovery followed.

Report of a Case of Spontaneous Rupture of the Cord, Intrapartum, With the Birth of a Living Child.—Dr. S. Marx said these cases were so exceedingly rare that he never saw one before, with the possible exception of one seen ten years ago; in this case, however, the fetus was born dead. The microscopical examination of the tissues at the site of rupture revealed a gumma of the cord. In the case reported there was no specific history. The patient was 39 years old, a primipara, and had been in labor several hours. There was an alternate dilatation and shutting of the cervix and an advancement and recession of the head with each pain. A presumable diagnosis was made of a short cord. Axis traction was made and a central laceration of the perineum resulted. A rapid delivery of the child was done, the only thing to do to save the baby's life. The cord was around the neck and was totally detached about one foot from the placenta. It required a long time to resuscitate the child. The placenta was expressed. Great difficulty was experienced in locating the stump of the cord where it was inserted into the placenta.

Description with Stereopticon Views of Special Features of the New Woman's Hospital.—Dr. LeRoy Broun gave this lantern slide demonstration.

General Discussion on the Pyelitis of Pregnancy.—Dr. Edwin B. Cragin opened the discussion. He said there were two forms of infection of the kidney and ureter which might occur in pregnancy or the puerperium; one, where the kidney substance was involved; the other, the pelvis of the kidney and the ureter. The latter form was generally meant when one spoke of the pyelitis of pregnancy. Up to 1904 the best literature on this subject emanated from the French. Since that time over one hundred cases had been reported in this country. The first description of the pyelitis of pregnancy appeared in 1841. The etiology and pathology, as we understood it to-day, was brought out in 1892, *i.e.* that the condition was due to compression of the ureter and infection of the ureter above that point. It was well known that when a kidney had been bruised in any way it was more likely to become infected. As to the frequency of the condition, he said it certainly was not an infrequent complication. During six years he had had twenty-five cases under observation, nineteen antepartum, and six postpartum. In considering the pathology, compression of the ureter, and infection above that point, he said that it was found in a large percentage of the ureters of pregnant women, that they dilated on one side owing to pressure of the pregnant uterus. Out of thirty-four autopsies on pregnant women by Ohlshausen there were twenty-five in which the ureters were dilated on one side or the other. Another authority had reported sixteen autopsies on pregnant women, in nine of which the ureters were dilated. In two cases seen at the Sloan Maternity a marked dilatation of the ureters was found. Therefore, he did not believe this condition to be so uncommon in pregnancy; it was not at all uncommon to have the ureter dilated on one or the other side, or on both sides. It was more often dilated on the right side, and there were three plausible reasons for this. In the first place the uterus naturally rotated to the right and forward; secondly, the right common iliac artery was more prominent than the left; thirdly, if one examined the urine of a typhoid fever case the typhoid bacillus would be found in the urine and with little injury to the urinary canal, provided there was no constriction; but it had been proven that if a sterile ligature be placed about the ureter and a hypodermic injection of streptococci or the colon bacilli be given, very often a streptococcic or colon bacilli infection would be started in the kidney, *i.e.* above the point of ligature. Thus, constricting the ureter made it more likely to become infected than one that was not. During pregnancy the ureter was compressed; therefore, there was more cause for infection occurring than would exist under ordinary circumstances; and so there was a greater frequency of infection of the urinary tract during pregnancy. With regard to the symptomatology, the condition was more frequently met with from the fifth to the eighth month of pregnancy. Occasionally the condition came on insidiously with but little temperature; as a rule, however, it was ushered in suddenly, with a sudden rise of temperature, perhaps with rigor, with pain and tenderness in the right kidney, and pus would be found in the urine; if examined

bacteriologically, the colon bacillus would be found in the vast majority of the cases. The common rule was for the disease to run from one week to ten days, when the temperature and pain would subside with more pus in the urine, and then the patient apparently would recover. This recovery might be permanent or only temporary, recurrences occurring before delivery. As a rule the recovery was permanent. Again it might recur after delivery, or in subsequent pregnancies. With regard to the diagnosis, one of the conditions most often confusing was appendicitis. If one relied upon the symptoms when first seen, the picture would be that of appendicitis; but if the urine was examined a differentiation could be readily made. A positive Widal reaction would differentiate pyelitis of pregnancy from typhoid fever. In differentiating pyelitis from cystitis one would not get such tenesmus, the urine would be acid and not alkaline, and one could introduce 150 c.c. of boric acid solution into the bladder without much discomfort; this would be sufficient to rule out cystitis. Of course there might be a cystitis secondary to pyelitis. The pyelitis did seem to be a descending infection through the blood and pelvis of the kidney. With regard to the involvement of the left kidney, this occurred primarily only in one case out of the twenty-five under his observation; in two or three cases the left kidney was involved secondarily. In a recent report of sixty-two cases, in only six was there a primary involvement of the left kidney. The most satisfactory treatment consisted in flushing out the urinary tract with large draughts of water, administering urinary antiseptics, moving the bowels, an ice-bag over the kidney, and giving small doses of opiates for the pain. Some benefit was to be derived from turning the patient on the side opposite the affected one. The prognosis, as all would admit, was an uncertain one. If one started with healthy kidneys, and if the process was unilateral, the prognosis was good. The chances were that such patients would go on to term, and be delivered without complications, and would remain well. On the other hand, there was always a possibility that there would be recurrences either in the puerperium, or subsequently, which would require surgical interference. Among his twenty-five cases there was only one that was operated upon. With regard to the future of these patients, if the process was a one-sided one, occurring in the fifth to the eighth month, running a course in from one to five weeks and then subsiding, the chances were that the kidneys would not become involved and the patient make a permanent recovery. As to the advice to give regarding subsequent pregnancies, he believed that patients should be advised against them so long as there was the slightest evidence of any disease in the ureter; if there was no pus for one year the chances of trouble were small, and the patient might become pregnant and be comparatively safe. The question arose whether the uterus should be emptied, and there were several things to consider. In the first place, after delivery the symptoms subside rapidly; but one could not be certain that the woman would be free from her pyelitis immediately after delivery. He believed it was extremely rare to induce labor before the viability of the child. If the child was viable and the woman still ill with evidences of the disease extending to the other kidney, the interruption of the pregnancy was indicated. In two of the twenty-five patients under his observation the uterus was emptied; in one the child lived; in the other, due to an error in judgment, the uterus was emptied too soon, and the child died. If the child was viable, and if the disease continued in spite of treatment, the indication was to empty the uterus.

Dr. A. Sturmdorf said that pyelitis in pregnancy had been the subject of considerable discussion abroad, and to a more limited extent in this country. The generally accepted data concerning the condition had been most ably set forth in Dr. Cragin's introductory remarks, and Dr. Sturmdorf asked, as Chairman of the Section, the privilege of directing their deliberations along certain lines that required elucidation or revision. In the first place, it was essential to recognize that the pyelitis occurring in the pregnant was in no manner different from pyelitis occurring in the nonpregnant, and the only factors to take into consideration in this respect were the influence of the pregnancy on the condition of the kidney and, reversely, the influence of the complication in question on the pregnancy. Furthermore, the so-called compression theory based upon animal experiments should become obsolete, as there was no analogy between a condition produced by permanent ligature of a ureter and the existence of an impregnated uterus under normal conditions. Pyelitis was observed at a period of gestation when the fetal head was too movable and too far from the pelvic brim to exert compression; on the other hand, the pressure of even hard fibroids did not produce pyelitis without the presence of previously existing infectious foci at some point within or in close proximity to the urinary tract. It must be conceded that pressure could not be exerted upon the ureter without at the same time compressing the pelvic blood-vessels, and in none of the reported cases were symptoms of obstructed circulation noted. Many of the reported cases that came to operation or autopsy presented miliary pus foci in one or both kidneys, thus pointing directly to an infectious process directly or indirectly induced from an immediate or remotely situated focus. So that, aside from the importance of bearing the possibility of the occurrence of a pyelitis during pregnancy in mind, as explanatory of hitherto inexplicable symptoms of infection which might become sufficiently grave to necessitate the termination of pregnancy, one should endeavor to establish lines of demarkation between septic pyelitis, septic pyelonephritis, and multiple kidney abscesses, each of which conditions would demand its own form of intervention. and above all one should interpret the condition as one of a nonrecognized previously existing infection, accidentally brought to light during the course, but *not* as the result of pregnancy.

Dr. Frederic E. Sondern said that he had looked into the literature and had been impressed by the statements made that the condition under discussion was supposed to be infrequent, whereas his laboratory experience was to the contrary. This condition was far more common than generally supposed, and, during the past twelve months, he could recall not less than seven such specimens sent to his laboratory. With regard to the etiology, almost invariably the cases that he knew of were due to the colon bacillus, the organism in many occurring in pure culture. The urinary conditions were quite characteristic, and were the same as described by the men who had written on the subject. There was more or less daily diminution in the amount of urine passed, but without any corresponding increase in the specific gravity. Casts were invariably present. In the tuberculous cases, with apparently the same acute onset, the symptoms were not so severe; the elevated temperature was present, but not the rigors. The impression received from the literature was that the disease was of short duration; but from a study of the specimens he had received it did not appear to have been of such a short duration. While the clinical symptoms might subside, pus remained in the urine for quite an appreciable time, even for months. The improvement did not seem to be a continuous one. There might be a diminution in the bacteriuria and in the amount of pus, as well as in the amount of irritation; then might occur an exacerbation, but not in the clinical symptoms. The first thing to disappear was the bacteriuria; slowly the pus would disappear. The sudden development of acute suppurative nephritis in those cases where the kidney was studded with small miliary abscesses was accompanied with severe clinical symptoms; yet there was little or no evidences of the condition in the urine itself. He recalled an article read recently in which the objection was made to the theory that the colon bacillus

was the cause of the inflammatory lesion; it was claimed that invariably there was a pyogenic infection first. Then injury to the epithelium rendered this a good path through which the colon bacillus entered. It seemed most plausible to consider the acute suppurative condition of the renal epithelium complicating or secondary to pyelitis as caused first by the colon bacillus and not by the streptococcus, the latter not being the original invader.

Dr. E. E. Smith said that in the cases that had occurred under his notice there had been evidences early in pregnancy of a toxemia of the same kind that occurred in gastrointestinal disturbances, showing itself not so much in the increase of indican and sulphates in the urine, but more especially by the occurrence of oxaluria. It seemed to him that the condition of oxaluria showed injury to the tissues of the pelvis especially, thus rendering them more susceptible to suppurative processes. Before the pyelitis came on the urine contained mucus from the pelvis of the kidney, a few pus cells, etc., and in this class of cases one might get a marked acute pyelitis. It was not his experience to find urea diminished in these cases. In pyelonephritis there was an increased amount of albumin. Where the tissues of the kidney were injured one would find a well-marked increase in albumin.

Dr. Lobenstine said that pyelitis was often confused with appendicitis, this confusion occurring twice in his experience; in neither case was it possible to make a diagnosis. In the pyelitis of pregnancy there was a sudden rise in the temperature in most cases, this rise preceding the pain by about forty-eight hours. He believed that a large percentage of the cases would recover under medical treatment. In seven out of nine cases under his observation he was surprised to find some days after delivery a decidedly movable kidney, and he wondered if this had anything to do with the etiology. All of the nine cases occurred on the right side.

Dr. S. Marx did not believe the pyelitis of pregnancy was as rare as generally supposed. He had seen five cases of pure pyelitis complicating pregnancy, and in not one was the diagnosis made, because the condition was really not thought of. The symptoms were as characteristic of appendicular disease as one ever saw. He recalled one of these cases in which the diagnosis was made of appendicitis and ectopic gestation; there was not a characteristic sign in the urine because the ureter was plugged. As to the etiology, he opposed the statements made by Dr. Cragin, that the condition was due to pressure. Many cases he had seen occurred early in pregnancy, when there was no pressure on the ureters. Infection might occur above or below; if above, it was hematogenous; if below, it occurred from a bladder or other lower infection. Very often after delivery it could be traced to catheter infection. In considering the diagnosis one should not forget the possible aid from the introduction of the ureteral probes. An important question concerned the induction of premature labor and the indications for it. Dr. Marx did not think the induction of premature labor was ever indicated if the condition was due to pressure; if it was due to pressure one got a hydronephrosis; the patient should be placed on the side opposite the diseased one, or else in the knee-chest position, throwing the head of the child away from the ureter; this would lessen the danger of a progressive disease of the kidneys. As to the prognosis, the chances for a permanent recovery he believed to be good. The diagnosis of such cases could be made only after several urinary examinations.

Dr. George L. Brodhead said he had found that, as a rule, pyelitis developed between the fifth and eighth month of pregnancy. In all but one of the cases that had fallen under his observation the pyelitis was on the right side. In this case it began in the right kidney and then extended to the left. Two important diagnostic signs related to the pain and the pus. The pain might be acute or moderate. Pus might be found in the urine for weeks, or for months. The treatment he employed was ice-bags, water, and a urinary antiseptic. In all the cases he saw the prognosis was good. With regard to subsequent pregnancies, there could be no doubt that the patient should be advised not to become pregnant while there were any signs of pyelitis present. With regard to the induction of premature labor he felt that if the symptoms were not decidedly improving, and especially if the patient was growing worse, and the disease was accompanied by temperature, he would prefer to empty the uterus, especially if the woman had advanced to the eighth or eight and a half months.

Dr. Brooks H. Wells said he always regarded the pyelitis of pregnancy in the same light as one which occurred in a woman who was not pregnant. In the ordinary cases of pyelitis nearly all occurred on the right side, just as pregnancy. In making a diagnosis, the possibility of mistaking the condition for appendicitis came up, the same in a woman not pregnant as in one who was. The best safeguard was to remember the possibility of a pyelitis. The area of tenderness in pyelitis was not so strictly limited to the area of pain in appendicitis; it occurred with greater or less extent along the site of the ureter on the right side. In four cases of pyelitis in pregnancy that he had seen in only one was it necessary to interrupt labor, and in this case the child was viable. In the other cases the patients were given milk and water and urinary antiseptic, and all made good clinical recoveries. The symptoms, however, persisted in all for a few months, in one case over one year.

Dr. William S. Stone reported one case that fell under his observation in which the clinical symptoms and urinary changes persisted at irregular intervals for several months after labor. Finally a nephrectomy was performed and the kidney was found to be riddled with miliary abscesses. The woman subsequently became pregnant and had a normal pregnancy, except for a few disturbances, such as a trace of albumin, etc. Labor came on three weeks before the time estimated for full term. At times she showed mild toxic symptoms.

Dr. J. Milton Mabbott said he recently saw a case of pyelitis in which there was experienced much difficulty in diagnosing between tuberculous pyelitis, simple pyelitis, and the pyelitis associated with renal calculus. A practical point he wished to bring forward related to the care of the patients during labor and the puerperium, to prevent any possible infection from urine containing bacilli or pus. His own practice was always to have the patient placed in bed or on the douche pan for every act of urination; then with the knees drawn up and separated, to bathe the parts with some antiseptic solution.

Dr. Philander A. Harris said that in such a discussion it should be clearly understood whether they were discussing the subject from the standpoint of the bacteriologist or of the laboratory, or clinically.

Dr. E. B. Cragin closed the discussion. He said that the urine in the ureter was under a very low pressure, 10 mm. of mercury only. That meant that but little pressure was required to dam back the stream. It had been found that any injury to the kidney predisposed that kidney to infection; in pregnancy one had that pressure, and therefore a lowered vitality and more liability to infection. With regard to the onset of the disease and the acuteness of the symptoms, Dr. Cragin said it had been his experience to find that when the temperature was highest and the pain the greatest no change could be detected in the urine; in other words, the ureter was closed at the time of the highest temperature and pain, the acuteness of the symptoms being due to the damming back of the pus in the pelvis of the kidney. With regard to whether this was an ascending or a descending infection, French writers who had done much work on this subject favored the view that it was a

descending infection and through the blood. The fact that the symptoms subsided so rapidly after emptying the uterus favored the supposition that pressure at least had something to do with the pyelitis of pregnancy.

A New Gas and Ether Inhaler.—Dr. Victor C. Pedersen presented this instrument.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, October 15, 1906.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

The Therapeutic Uses of Thyroid Preparations.—Dr. Oliver T. Osborne of New Haven, Conn., stated that the physiological symptoms developed by feeding thyroid were well known. Thyroid extract would increase the rapidity of the heart, increase perspiration, and cause warming of the surface of the body; in other words, it increased the peripheral circulation, lowered the blood pressure, stimulated mental activity even to the point of sleeplessness, caused increased nitrogenous metabolism, and, if in considerable amount or given for a long time, it produced loss of weight. We knew the counterpart of feeding this gland, namely, the symptoms of Graves' thyroid disease. We were also perfectly familiar with the symptoms of absence of function of this gland, as seen in myxedema and cretinism. Dr. Osborne emphasized the fact that all varying increased secretions of the thyroid would give rise to symptoms, and the same was true of all varying decreased secretions. The thyroid gland was easily excited temporarily to increased secretion by emotion, grief, sexual excitement, and for a more prolonged period during menstruation and pregnancy. It was thus seen that the thyroid was a much more active and necessary gland in women than in men; in fact, nearly three-fourths of all cases of disturbed thyroid secretion, either more or less than normal, occurred in women. As age advanced, from fifty on, the thyroid normally began to secrete less than in earlier years. Vasomotor tension therefore increased, arteriosclerosis developed, and we had normal old age, namely, arterial disease, and with it all the phenomena of connective tissue deposits. Finally, as the gland more and more diminished its secretion, senility developed, the skin became dry and eczemas might occur, which were improved by the administration of thyroid extract. Dr. Osborne said that the thyroid gland might have its chemistry so disturbed as to offer a perverted secretion, perhaps neither too much nor too little as a whole, but with its various elements in an abnormal relation to each other. The thyroid, he believed, had something to do with the production or destruction of the red blood corpuscles, as well as with sugar metabolism. Besides the physiological and psychical stimulations of the thyroid gland, certain drugs affected it. Alcohol excited it, and iodine in any form was a stimulant to it. Arsenic, he believed, also stimulated it, which was perhaps the reason that arsenic did good in chlorosis. Phosphorus was probably a stimulant to it, while the prolonged action of such metals as lead and mercury probably inhibited the action of the gland. An excessive meat diet modified the structure, and hence the secretion of the thyroid. It was unnecessary, the speaker said, to discuss the successful use of thyroid preparations in cretinism and myxedema. In ordinary goiter he believed the thyroid would often do harm by stimulating the gland to increased secretion, and perhaps causing a Graves' disease to develop from a simple goiter. In exophthalmic goiter, or Graves' disease, thyroid was positively contraindicated, and would always aggravate the symptoms. In doubtful cases of nervous phenomena, where the question was whether thyroid would help the case or make it worse, he believed that the use of thyroid was contraindicated when there was cerebral excitement, palpitation, progressive loss of weight, sweatings, or flushings. If, on the other hand, the patient was drowsy, apathetic, gaining weight, and the pulse was rather slow, thyroid might be of benefit. There could be no doubt that the proper treatment of Graves' disease was one of the antithyroid preparations or serums. Obesity was well treated by small doses of thyroid, long continued. Large doses he considered dangerous. In high blood tension after the age of fifty he had seen marked benefit from the administration of small doses of thyroid, and the same was true in the asthma of old age. He also had on his records a number of cases of epilepsy treated successfully with thyroid. His attention was first drawn to the use of this preparation in epilepsy by several cases occurring in women at the time of the menopause, the fits showing a suggestive periodicity. He had also found that in disturbances of the thyroid in Graves' disease, a vegetable diet and the withdrawal of meat was advantageous. He thought it advisable to feed thyroid in puerperal insanity, and in the insanity occurring at the menopause. The quality of the thyroid preparation should always be beyond question.

Parathyroids in Physiology and Therapeutics.—Dr. James J. Walsh said it was not long after the discovery of the importance of the thyroid gland, and the consequent widespread interest and careful investigation of it, before it was noticed that there were certain small glandular bodies situated in the neighborhood of the thyroid gland, but readily distinguishable from it in histological structure. These were four or five, at times six in number, usually situated at the lower and outer boundary of the thyroid, two or more on each side, but occasionally occupying a place in the midst of the thyroid substance. They were commonly so closely related to the thyroid gland by anatomical position that it was practically impossible to remove the thyroid without also removing these parathyroids, or at least injuring them so severely as to obliterate their function. After reviewing the work done by Gley, Munk, MacCallum, and others in connection with the parathyroids, and the use of parathyroid material in exophthalmic goiter and Parkinson's disease, the speaker said there seemed to be no doubt that these little glands in the neck were extremely important, and had a significance very different from that of the thyroid gland. It was possible that they might form an important addition or corrective to the secretion of the thyroid. In the near future, very probably, the physiologist would teach us more about them, and then there might be further questions of their therapeutic use. In the meantime they constituted an interesting field for speculation, and doubtless the powdered gland would be used empirically for other diseases with reported good results. Of course a careful analysis of those results would have to be made in order to determine the true significance of the experimental work done.

Physiological Action and Uses of Adrenal Extractives.—Dr. C. E. de M. Sajous of Philadelphia, in his paper on this subject, said the fundamental importance of oxygen in all the functions of the organism, and in the life process itself, hardly needed to be emphasized; and yet the manner in which this gas entered our blood, and its rôle in the tissues might be said to be unknown. The prevailing idea was that the entrance of oxygen into the blood, and the elimination of carbon dioxide, occurred in accordance with the physical laws of diffusion of gases, but a well-known English physiologist, Dr. Pembrey, in an impartial review of the subject published this year, stated that it was impossible to give a satisfactory account of the causes of gaseous exchange between the blood and the alveolar air. Landois, in the last edition of his text-book, ascribed the absorption of oxygen to a chemical process, and adduced various facts which showed that it did not depend on a diffusion of the two gases involved. What was the nature of this chemical process? Bohr and other investigators showed that, contrary to the prevailing view, the oxygen

tension was not greatest in the alveoli, but in the arterial blood, and that pulmonary respiration could only be accounted for by the presence of "a kind of internal secretion," derived perhaps from the alveolar membrane, and capable of actively taking up the oxygen of the alveolar air. The main feature of Bohr's theory, namely, the source and identity of the internal secretion which absorbed the oxygen of the air, had failed to come to light, and it was this function which, in a work published in January, 1903, Dr. Sajous ascribed to the secretion of the adrenals—a conclusion which additional researches had sustained. After briefly outlining a few of the facts upon which this conclusion was based, Dr. Sajous referred to the fact that in his work on "Internal Secretions" he ascribed glycosuria to overactivity of the adrenals, the excessive oxidation in all tissues causing an increase in the production of the agent which converted glycogen into sugar. Another action of adrenal extractives which his views seemed to him to elucidate was the production of arteriosclerosis by their prolonged use, as recently shown by Josué, Erb, von Rzentkowski, and others. Shock was another condition in which adrenal extractives prominently showed their influence on metabolism. Applying this general principle to the internal use of adrenal extractives, a salient feature asserted itself, namely, that whenever they had been found useful in a general disorder it had invariably been in some condition attended with or due to lowered metabolic activity, or adynamia. Solomon Solis-Cohen had introduced the use of suprarenalin in asthma, in cases attended with lowered vasomotor tone, and others had confirmed his observations. The relationship of asthma with the gouty diathesis was well known, and it was also known that this condition was an indication of imperfect nuclein catabolism. Migraine was also related to gout, and Thoma and others had reported cases in which relief followed the use of some adrenal extractive. Hay fever, another disorder ascribed to a gouty diathesis, had been found by Cohen to be influenced favorably by suprarenalin, allowed to dissolve on the tongue. Adrenal extract had been found of value in neurasthenia by many observers, including Huchard. In cardiac disorders it had been highly recommended by several clinicians. Mankowsky specified that the most useful application of adrenal extract was in cardiac weakness and threatening collapse. Floersheim found it effective when our usual remedies had failed. Deeks obtained not only marked improvement in cardiac weakness, but disappearance of attending edema. Boy-Teissier obtained excellent results in cases of weak heart, with general cyanosis and great cardiac dilatation. Finally, in Addison's disease, the vitality was so reduced that we should have in adrenal extract an infallible specific. Some clinicians had obtained marked benefit from its use; others had observed no effect.

Organotherapy from a European Point of View.—Dr. Arnold Lorand of Carlsbad, Austria, took up this phase of the subject. He said that many of the actions of the thyroid could be explained by their iodine constituent. Milk also contained the internal secretions of the different ductless glands, including the thyroid, and thus iodine entered into the composition of milk. The iodine was contained in the colloid substance of the thyroid, and as the thyroid of the infant was very poor in colloid substance the child received the iodine from the mother. Thyroid treatment, with small doses, was harmless, even after the prolonged use of the extracts, providing these were obtained from the fresh glands of healthy animals, not too old, and providing also that the patient was not taking too much meat at the same time. The experiments of Breisacher and Blum on the action of meat upon the thyroid showed that glycosuria could follow the thyroid treatment if much meat was taken. The speaker referred to two such cases that had come under his personal experience, where previously no alimentary glycosuria could be produced after a test dinner with large quantities of carbohydrates. Thyroid treatment could also favorably influence arteriosclerosis, and cirrhotic conditions of the liver and kidneys. Ovarial organotherapy gave favorable results in the nervous symptoms following the menopause and castration. Dr. Lorand said he had invariably seen good results in cases of chronic nephritis by using extracts of the fresh kidneys of the pig. In cases of defective elimination of cooking salt, the speaker said he had seen a considerable augmentation of the same in each case after thyroid treatment, which also increased the elimination of uric acid. In a number of cases he had found that the serum of animals whose thyroid had been extirpated gave excellent results in insomnia.

Dr. Egbert Le Fevre said that the therapeutic uses of the thyroid gland always afforded an interesting study, although he could not say that the results of his work had taken such definite form as those reported by the readers of the papers. Those who were in the practice of general medicine not infrequently met with rather obscure cases, and in such instances some had been induced to try thyroid extract. The benefit resulting from this method of treatment had at times been very pronounced and had led to considerable enthusiasm, in which the speaker said that he himself had been inclined to share, but as time went on he had noticed that this improvement had not been of a permanent character, especially in nervous patients, who were apt to improve temporarily under any new method of treatment. The use of the new instruments of precision for measuring the blood pressure had shown that the thyroid extract had produced a marked fall in cases where the pressure had previously been persistently high. Dr. Le Fevre said he had been much interested lately in the reports of Romberg's clinic upon the effects of the iodides upon blood pressure. It had been shown that when the iodides were given for a long time in small doses they produced a distinct change in the tension of the pulse, due to diminished viscosity of the blood. The speaker said he had seen a number of cases of syphilis in which the withdrawal of the iodides, after their long-continued use in good-sized doses, had resulted in muscular tremor and weakness, and a condition very analogous to that observed in hypothyroidism. It seemed quite apparent that the activity of the thyroid gland had been impaired, or at least modified, by the long-continued use of the iodides. While some patients were temporarily improved, and others permanently, by the use of thyroid extract, the speaker said he had seen cases where harm had been done by the injudicious and persistent use of the remedy, especially when it was given in obscure cases. He had never been able to get any definite results from organotherapy in the treatment of nephritis. In the preparation of all renal extracts, he thought an effort should be made to obtain them from animals which in their diet, etc., were most closely allied to the human species. Otherwise, there was apt to be a wide variance in the physiological properties of the extracts.

Dr. S. P. Beebe referred to the more recent developments in the manufacture of the serum for the treatment of exophthalmic goiter. He said that while much had been heard in regard to the physiology and therapeutic value of the thyroid gland in animals, very little was known in regard to the manner of the action of this serum. It was now a little over a year ago since the first two cases of exophthalmic goiter were treated by this method, but most of the cases of which any definite record had been kept were treated during the past six months. It was therefore impossible, as yet, to make any positive statements regarding its value. Dr. Beebe said that during the hot weather it was almost impossible to make a serum of definite efficiency; this was not only true of the antithyroid serum, but of other serums as well. Serums made in cold weather were much more efficient.

Another fact which we were just beginning to appreciate was the late improvement which sometimes occurred after the serum treatment in exophthalmic goiter. He also referred to its prompt effect in relapses, and mentioned one case where four relapses were readily controlled by single doses of the serum. The relapses, apparently, were much more amenable to the serum treatment than was the original attack.

Dr. C. Am Ende said that eight years ago he began experiments which resulted in the preparation of an extract of sheep's thyroids. The extract contained a substance that apparently acted as an antibody to the cancer toxins, and as an illustration of this fact the speaker presented a case of inoperable adenocarcinoma of the upper rectum and sigmoid flexure in which marked benefit had followed the use of the remedy. He recalled a number of other cases in which it had materially prolonged the life of the patients, and to a certain extent it prevented extension of the malignant diseases through the lymphatics. It also exerted a marked influence in alleviating pain. This was also accomplished by the use of the Roentgen rays, but the combined effect of the rays and the thyroid extract was more pronounced than that exerted by either factor singly.

The discussion was closed by Drs. Walsh and Sajous.

Chicago Medical Society.

At a meeting held October 17, 1906, Dr. William Hessert reported three cases of hemorrhage from the stump following appendectomy. Dr. Albert H. Burr described an easy method of evacuating the contents of the stomach into the duodenum. He likewise spoke of normal lavage without the stomach tube, and gave some therapeutical hints on abdominal gymnastics. He spoke of the conditions under which the stomach contents are retained beyond the period of normal digestion. He described the symptoms of retention, and spoke of the advantages of passing the contents through the normal channel. The method of accomplishing it was by assuming a certain position upon the right side to favor gravitation of the contents to the pyloric end of the stomach. He recommended strong rhythmic contractions of the abdominal muscles upon the stomach to stimulate peristalsis, and said that finally there should be firm fixation of the diaphragm by deep-sustained inhalation while strong abdominal contractions were made. This voluntary reversed emesis was not difficult to learn. The same process was applicable for stomach lavage in a large class of cases where it was indicated for therapeutic purposes, with advantages over the routine use of the stomach tube. He prescribed a series of daily bedside abdominal gymnastics for deep, active massage of all contained viscera, with a view to promoting the activity of the lymph glands and lymph circulation for both therapeutic and prophylactic effects.

Dr. Hugh T. Patrick read a paper entitled "Remarks on a Few Disorders of Sleep." The first disorder described had been called nocturnal palsy, night numbness, sleep numbness, waking numbness, and acroparesthesia nocturna. The patient wakened in the night with one or more extremities numb, tingling, and more or less paralyzed. This paralysis might be complete, but was of short duration. After some minutes of rubbing, slapping, shaking, etc., normal sensation and motion returned and the patient was able to go to sleep again. When the trouble was hemiplegic in distribution it very closely simulated an apoplectic attack without loss of consciousness, and might seriously frighten the patient, as well as give considerable concern to the medical attendant. The causes of this disorder, approximately in the order of their importance, were neurasthenia and general nervousness, malnutrition and general debility, the menopause, rheumatism, cold and wet, anemia, arteriosclerosis, hysteria, tobacco, gastrointestinal disorder, gout, Bright's disease, diabetes, and pregnancy. The next disorder considered was what the author called painful awakenings. In this disorder the patient would waken suddenly with a feeling of intense apprehension or panic, as if something dreadful were about to happen or had just happened. There was apt to be palpitation, tachopnea, generalized tremor, or more frequently a sensation of trembling without visible tremor, sometimes cold perspiration and a feeling of great prostration. As nearly as may be ascertained these attacks had no relation to nightmare or bad dreams. They occurred principally in the course of functional nervous disease, and although most distressing, not to say alarming, to the patient, were entirely harmless, and nearly always disappeared with successful treatment of the general nervous condition. However, sometimes heart disease, Bright's disease, arteriosclerosis, or adenoids stood in a causal relation to the disorder. The author then described different types of what he ventured to call indormescent shocks. They were so called because they occurred just as the patient was falling asleep or immediately after. They might be divided into motor and sensory, although sometimes the two were combined in the same patient or in the same shock. In a very mild degree the motor shock was familiar to everyone, simply consisting of a sharp muscular start or jerk about the time one was falling asleep. The starts in this degree might be called physiological, as nearly every person had experienced them, but they sometimes reached an intensity which made them distinctly pathological. In such a case the sudden muscular contraction might be so violent and so generalized as literally to throw the patient into the air and turn him over in bed, and in some cases these jerks might be repeated ten or twenty times before the patient finally passed into a sound sleep. The sensory shocks were very apt to be related to the special senses. A typical case was that of a neurasthenic patient who was awakened by what seemed to be the discharge of a pistol inside of his head. He was conscious of a tremendous crash, like an explosion, and at the same time felt conscious of a vivid flash of light. He sprang from the bed, was terribly frightened, sat up the rest of the night, and for weeks thereafter retired with great timidity lest there should be a recurrence of the phenomenon. Another patient, a middle-aged woman, had a sensation of having received a violent blow on the head, and she felt certain that someone had struck such a blow. In intense agony she waited for the second, which she felt would follow instantly, but after a time realized that it was purely a sensation and that she had received no bodily harm. Still another patient was suddenly awakened by what seemed to be a great flash of light, and another had a sudden sensation in the epigastrium as if he had received a violent blow in that region. A neurasthenic and hypochondriacal gentleman past middle age was several times awakened by a sound which he likened to a violent and sudden grinding together of two stones, the intensity of the sensation being sufficient to constitute a real pain. Other instances were related, in all of which the disturbance was sufficient to concern, if not greatly alarm, the patient, but the author had never known this particular disturbance to be a symptom of organic disease. The disorder of sleep always disappeared with the disappearance of the nervousness and a return to good general health.

Philadelphia County Medical Society.

At a stated meeting held October 24 Dr. George Erety Shoemaker demonstrated a specimen of "Dermoid Cyst of the Ovary," one of "Ruptured Hematoma of an Oviduct," perhaps an ectopic pregnancy, and one of "Tuberculosis of the Vermiform Appendix." Dr. H. Emerson Wetherill exhibited a simple pocket device for studying atmospheric conditions. Dr. J. Dutton Steele read a paper entitled

"The Clinical Significance of Small Hemorrhages from the Gastrointestinal Tract." He pointed out the value of the test for occult blood in the stools, from both negative and positive standpoints. Care must of course be taken to exclude hemorrhoids and other varicose conditions of veins as sources of hemorrhage. The most common causes of bleeding are ulcer and carcinoma of the stomach or intestine, although occasionally pyloric stenosis and also erosions, as well as such disorders as scurvy and purpura and the like, may give rise to the same phenomenon. Dr. William S. Wadsworth presented a communication entitled "Gunshot Wounds." He discussed the subject on the basis of a considerable experience in the National Guard and in the autopsy room, and he pointed out the varying effects in accordance with the character of the weapon, of the explosive, of the missile, the distance of impact, the structure affected, and a number of other factors. Dr. Augustus A. Eshner read a paper entitled "Paralysis Agitans Without Tremor." He maintained that this disease is not a true palsy and sometimes even the tremor is absent. When present the tremor is made of rhythmic movements, four or five in the second, taking place almost invariably during rest and ceasing, temporarily at least, on voluntary action and also on passive movements, as well as on an effort of the will and on psychic motor impulse, and apparently at times spontaneously. Sometimes it is so little marked as almost to escape observation, but even then the diagnosis of paralysis agitans can be made from the peculiar facies, the stolidity of countenance, the stooping attitude, the rigidity of posture, and the deliberation of movement and of speech. Dr. Eshner reported the case of a weaver, 61 years old, presenting a fixed countenance, stooped shoulders, and a tendency to propulsion. No tremor was present at the first observation, but at a later time slight tremor was appreciable in the thumb of one hand suggestive of the pill-rolling movement, and also tremor of intrinsic muscles of the hand. In this case, as in others like it, the absence of tremor was not constant, and the temporary absence was attributed to restraint through muscular rigidity. The tremor may hypothetically be ascribed to interruption of motor impulses responsible for muscular tone, in consequence of interference by neurogliar hyperplasia with the transmission of nerve-force. The subsidence of the tremor on voluntary movement effort is in turn due to amplification of the tonic motor impulses necessary for the execution of a given movement. Restraint of the tremor by passive movement or by psychic impulses must be considered as reflex.

Philadelphia Neurological Society.

At a stated meeting held October 23 Dr. Carl D. Camp read a paper entitled "Motor Palsy as an Early Symptom of Tabes Dorsalis." He reported illustrative cases and pointed out the relative rarity of the association. Dr. S. D. Ludlum presented a communication entitled "Trauma Preceding Probable Syringomyelia and Tabes," and he demonstrated two patients. In one of them symptoms of locomotor ataxia developed in consequence of a fall from a scaffold at a considerable height, and in the other symptoms of syringomyelia made their appearance following a blow inflicted by the patient upon another person. In each it was a question whether the morbid manifestations and lesions were a result of the injuries or merely came into prominence in the sequence of them. Dr. G. E. Price reported "A Case of Adiposis Dolorosa. The patient, who was exhibited, was a middle-aged woman, who presented enormous enlargement of the lower extremities, with varicose veins and pendulous masses of fat in the upper extremities. The hyperplastic fatty tissue was the seat of pain, spontaneous and induced in various ways. The thyroid gland was not palpable. There was a history of syphilitic infection acquired through the husband. Dr. J. W. McConnell presented "A Patient with Probable Tumor of the brain in the Parieto-Occipital Region." This occurred in a man, about 55 years old, who had had headache, vomiting, unilateral weakness, and impairment of tactile and painful sensibility, astereognosis, with Jacksonian convulsions and homonymous hemianopia. Marked improvement took place under treatment with mercurials and iodides. A similar though less pronounced condition had existed six years previously, and perfect recovery had resulted. Dr. T. H. Weisenburg exhibited a patient presenting "Astereognosis Without Motor or Sensory Involvement." The symptoms disappeared entirely following treatment with mercurials and iodides. Dr. A. Gordon reported "A Case of Bulbar Palsy, with Total Aphemia." The patient, who was exhibited, was a colored woman, 35 years old, who, following an attack of angina, supposed to be diphtheritic, had difficulty in swallowing and in speech, with double facial palsy and weakness of the ocular muscles. The condition was thought to be due to poliencephalitis, although the opinion was expressed in the discussion that it was more probably a peripheral neuritis involving several of the cranial nerves. Dr. Gordon also presented a communication entitled "The Second Anatomical Proof of the Value of the Paradoxical Reflex." He reported the case of a young man having convulsions, with unilateral paresis. The knee-jerk was increased on the paretic side and the Babinski reflex was absent, but on grasping the muscles of the calf firmly between the thumb and fingers of both hands extension of the toes of the foot took place. Accordingly, it was decided that there was irritation of the cortex on the opposite side of the brain and trephining was undertaken, with relief of the symptoms. The discharge becoming retained at a later period, the symptoms returned, including the paradoxical reflex described, and with the restoration of the discharge the symptoms once more disappeared. In another case, one of hemorrhagic pachymengitis, the localization of the lesion was made accurately from the presence of the reflex.

Philadelphia Pathological Society.

At a stated meeting held October 25 Dr. W. M. Late Coplin presented specimens illustrating "Pyloric Stenosis." In one of these the excavation caused by ulcerating carcinoma at the pyloric extremity of the stomach resulted in the formation of a flap that gave rise to occlusion of the pylorus. In the other the pyloric orifice was constricted by carcinomatous infiltration. Dr. S. Leopold presented a specimen of "Carcinoma of the Pancreas." This was scirrhous and unattended with metastasis. There was present a second carcinomatous growth of a different character on the peritoneal surface of the rectum. Dr. D. Riesman exhibited a specimen of "Hypernephroma." The growth came from an elderly woman who had a tumor in the right hypochondrium, at first thought to be a gall-bladder, and later, by reason of the presence of suggestive physical signs, to be tuberculosis of the kidney. Operation was undertaken and the removed kidney was found to be the seat of a hypernephroma. The patient made a satisfactory recovery, but since the operation confirmatory evidence of pulmonary tuberculosis has developed. Dr. H. J. Sommers presented a communication entitled "Detection of Typhoid Bacilli in Milk and Water." He described the difficulty of detecting these germs in the fluids named, largely on account of the more active growth of other microorganisms, particularly the *Bacillus coli communis*. He decided to use milk as a culture medium base, and with appropriate apparatus he was able to isolate typhoid bacilli in a number of instances that otherwise would have yielded negative results. Dr. Joseph McFarland read a paper entitled "Further Observations on Experimental Phagocytosis." With the aid of Dr. L'Engle he endeavored to determine whether there was any relation between the virulence of microorganisms and the activity of phagocytosis, and the results of the observations seemed to indicate that there was no such relation.

Surgical Suggestions.

A New Method of Gastrostomy.—Prof. Tavel of Berne has recently published notes on a new method of performing the operation of gastrostomy. All the older methods of performing the operation have the disadvantages that the opening made closes easily or becomes too small, and that the wall of the stomach is fixed to the abdominal wall. This can be avoided when the stomach is attached to the skin by the intermediation of a loop of intestine that is allowed to retain its mesenteric attachment. This is formed like a new esophagus, with its peristaltic action functionating toward the stomach. The only disadvantage of the operation is that it takes more time than the other method.—*Medical Press.*

Iodine-Benzine Disinfection.—Heusner warmly advocates the routine use of 1-1,000 solution of iodine in benzine as a disinfecting medium for surgical use. It is used as follows: 200 or 300 c.c. of the solution are placed in a disinfected porcelain dish and the dry hands are brushed with this for the space of five minutes. They are then rinsed in a fresh dish with the same solution. The patient's skin is not scrubbed with a brush, but is wiped off with bits of gauze. Finally, the hands and the operative field are anointed with vaseline containing 2-1,000 of iodine. At first this treatment makes the hands somewhat rough and fissured, but even the most sensitive skin soon becomes habituated to it. Bacteriological and clinical tests speak highly in favor of the method.—*Zentralblatt für Chirurgie.*

Aseptic Wound Dressing.—Walter von Oettingen, after extensive experience in the Russo-Japanese War, has come to the conclusion that the aseptic dressing is much preferable to the use of antiseptics in dealing with the wounds of military surgery, and in all probability in private practice as well. His idea is to prevent as much as possible the access of fresh germs to the wound, believing that efforts to kill all of those already present are worse than useless, since the chemicals used, if in proper strength to be effective, must inflict serious damage on the tissues. He accordingly makes no attempt to cleanse the wound or its environment, but as soon as the patient comes under his care paints the entire surrounding skin for a space the size of the palm of the hand with a varnish composed of gum mastich 20.0 g., chloroform 50.0 g., and linseed oil 20 drops. A dry sterile compress is immediately applied to the wound, which is thus completely sealed beyond the possibility of any exposure.—*Zentralblatt für Chirurgie.*

The Treatment of Postpartum Hemorrhage.—A method of controlling postpartum hemorrhage without having recourse to uterine packing, which latter is always difficult for the unassisted practitioner, and involves grave risks of infection, is described by Meyer-Ruegg. The procedure consists in the introduction into the uterus of a pear-shaped, broadly-corrugated instrument of aluminum mounted on an appropriately curved handle and having a width of 5 cm. and a thickness of 3 cm. In cases of impending or actual hemorrhage this metal tampon is introduced into the cavity of the uterus and is used to massage its walls. If atony is marked and no contractions can be induced the uterus may, by means of the instrument, be pressed against the anterior abdominal wall and compressed through this with the left hand. The instrument is allowed to remain in position for twenty to thirty minutes, at the end of which time there is usually little risk of recurrence of the hemorrhage.—*Zentralblatt für Gynäkologie.*

Movable Artificial Eye.—E. A. Hall describes his operation as follows: General anesthesia, insertion of speculum. Circular incision, with sharp-pointed, curved scissors, of sclerotic directly posterior to the ciliary region, and in front of the insertion of the recti. Removal by sharp curette of vitreous retina and choroid. Insertion of speculum blades within the sclerotic, thus exposing the interior of the globe. With mouse-tooth forceps, catch the point of entrance of the optic nerve, pierce the sclerotic with the scissors, and sever the nerve twenty mm. behind the junction, then complete the circuit of sclerotic close to the nerve, and remove the sclero-optic junction. Check hemorrhage, which is usually not profuse. Irrigate with saline. Insert a small gauze drain within the sclerotic, approximate sclerotic and conjunctiva vertically. Withdraw drain after twelve hours. We have now left a zone of sclerotic nourished by a few twigs of the short posterior, and by the long posterior ciliary arteries, with muscular and nervous connections undisturbed. Thus is formed a movable pad upon which the artificial eye is placed. The artificial eye is usually inserted within a week and worn for a few hours each day. The movement of the artificial eye is free up to twenty degrees vertically, and about thirty-five degrees horizontally. This procedure is not applicable in malignant involvement.

STATE BOARD EXAMINATION QUESTIONS.*

REGULAR BOARD MEDICAL EXAMINERS, STATE OF GEORGIA.

April 3 and 4, 1906.

CHEMISTRY.

1. Give the formula of each of five compounds, giving the name in each case, and the dose.
2. Give the name and formula of Epsom salt, Glauber's salt, and Rochelle salt.
3. Mention five mineral poisons, and give the antidote for one of them.
4. Name the nonmetallic chemical elements, which in various combinations are found in the tissues of the body.
5. How may you decide whether a urinary deposit is urates or phosphates?

ANATOMY.

1. Describe the inferior maxillary bone.
2. Name muscles of posterior tibo-fibular group, superficial, and deep. (a) Give origin and insertion of (1) Pectoralis major; (2) External oblique; (3) Sartorius; (4) Triceps muscles.
3. Give course, relations, and branches of external carotid artery. (a) Give blood supply of rectum.
4. Give origin, course, and distribution of great sciatic nerve. (a) Give nerve supply of heart.
5. Describe the stomach.

SURGERY.

1. Give treatment, constitutional and local, of Burns.
2. Name the varieties of fractures. (a) State the cardinal principles in the treatment of fractures.
3. Describe an operation for the radical cure of oblique inguinal hernia.
4. Define hemorrhoids. (a) Give varieties and treatment.
5. Define a chancre. (a) State period of primary and secondary incubation. (b) Treatment, local and constitutional.

MATERIA MEDICA AND THERAPEUTICS.

1. Source of ergot; define its use in obstetrics.
2. Name four preparations of mercury; give dose of each.
3. Source of quinine; for what is it a specific?
4. What is meant by hemostatics? Describe their mode of action; name several of them.
5. Write a prescription for a general tonic with tincture nux vomica and a preparation of arsenic.

OBSTETRICS AND DISEASES OF CHILDREN.

1. How would you manage a shoulder presentation?
2. Differentiate between a five-months pregnancy, ovarian cystoma, ascites and uterine fibroid.
3. What is the Braxton-Hick's sign of pregnancy? How obtained?
4. Under what condition would you be justified in inducing premature labor?
5. What direction would you give the nurse as to care of infant during first week?

PHYSIOLOGY.

1. Describe a white blood corpuscle. Where are they formed? What is their function, and what is their ultimate end?
2. The salivary secretion is derived from what three glands? What is the physiological action of saliva?
3. What are the three motions of the heart, and their cause?
4. What is the volume of air taken in the body in an ordinary inspiration? How is this chemically represented, and how much of the O is absorbed?
5. What is the result of a lesion of the spinal cord in the cervical region? In the sacral region?

*It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the student with the general character of these examinations and to inspire him with confidence in the result of his trial.

PATHOLOGY.

1. Mention the pyogenic bacteria.
2. Describe the blood changes in pernicious anemia.
3. Give the structural changes which take place in chronic and acute appendicitis.
4. Differentiate between a typhoid ulcer and a tubercular ulcer of the intestines.
5. Describe the process of repair.

GYNECOLOGY.

1. Define menorrhagia and metrorrhagia. (a) Give causes and treatment.
2. Describe an operation for the repair of a lacerated cervix.
3. Give symptoms of carcinoma of the uterus. (a) Treatment.
4. Define retroversion and retroflexion of the uterus. (a) Symptoms and treatment.
5. Give symptoms and treatment of ectopic gestation.

PRACTICE.

1. Define lobar pneumonia. (a) Give symptoms and treatment.
2. Define malaria. (a) Give prophylactic and medical treatment.
3. Differentiate between chickenpox and smallpox.
4. Define measles; point out the most dangerous complications.
5. Differentiate true croup and spasmodic.

OBSTETRICS AND DISEASES OF CHILDREN.

1. Give symptoms, causes, and treatment, of acute mastitis?
2. Give principal causes and treatment of rupture of uterus.
3. Treatment of inertia uteri.
4. Differentiate between diphtheria and the disease with which it might be confounded.
5. Give treatment of bronchopneumonia.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

MICHIGAN STATE BOARD OF REGISTRATION IN MEDICINE.*

October 9, 10, *and* 11, 1906.

ANATOMY.

4. The collateral circulation is through (1) the internal carotid and vertebral of one side with those of the other, through the circle of Willis; (2) superior thyroid with inferior thyroid; (3) deep cervical of superior intercostal with princeps cervicis of occipital; (4) superior thyroid, lingual, facial, occipital, and temporal branches of external carotid, with corresponding arteries of the other side.

PHYSIOLOGY.

1. Metabolism is a name given to the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) anabolic, or constructive, and (2) catabolic, or destructive.
2. When, in the small intestine, by the action of the pancreatic enzyme amylopsin, it has been entirely converted into maltose and dextrose.
3. The portal system of veins begins and ends in capillaries. Its function is to carry to the liver blood loaded with material absorbed from the contents of the stomach and intestines.
4. The functions of the liver other than the secretion of bile are: (1) the formation of glycogen, (2) the formation of urea and uric acid, (3) the manufacture of heat, and (4) the conversion of poisonous and harmful into inert material.
5. The changes take place in the capillaries of the lungs, and are: (1) the giving up of the CO_2 by the venous blood, (2) the absorption of oxygen during inspiration, (3) the blood is cooled, and (4) it also loses a small amount of watery vapor.
6. The functions of the stomach are: (1) to receive the food after mastication and deglutition; (2) to secrete the gastric juice, which can act upon the food after it has entered the stomach; (3) by means of its muscular movements to blend and incorporate the gastric juice with the food it has received; (4) to absorb such parts as are ready for absorption.
7. The valveless veins are: the venæ cavæ, hepatic veins, portal vein and its branches, renal, uterine, ovarian, pulmonary, cerebral, spinal, and umbilical veins. The sinuses of the skull and very small veins are also without valves. These veins, not being liable to pressure, do not require the action of the valves, the chief function of which is to prevent a reflux of blood back towards the capillaries.
9. The function of the sympathetic nervous system is to supply (1) the muscles of the vascular system, by means of the vasoconstrictor and vasodilator nerves, also the accelerator and inhibitory nerves of the heart; (2) the muscles of the various viscera; (3) various glands, such as the lacrymal and parotid glands.
10. Proteids, carbohydrates, fats, and water are all essential to health.

HISTOLOGY AND EMBRYOLOGY.

3. The lymphatic circulation is, strictly speaking, not a circulation at all; since the lymph flows only in one direction, namely, toward the heart. The lymph capillaries take up any excess of the blood plasma which is not required for the nutrition of the tissues. These capillaries consist of a single layer of epithelium, and empty themselves into vessels very like the veins. The lymph vessels are well provided with valves, which are so closely approximated as to give the vessels a beaded appearance. All the lymphatic vessels, except those of the right upper half of the body, empty into the thoracic duct, which terminates in the left subclavian vein, where the left internal jugular vein also enters. Those from the right upper half of the body discharge into the right lymphatic duct, which, in turn, empties into the right subclavian vein at its junction with the right internal jugular vein.
4. About the end of the third month of fetal life the primitive epidermis, over the end of the digits, thickens, and the nail area is outlined by a furrow. The root of the nail is then marked by an ingrowth of the rete Malpighii. A little later, the upper cells of the Malpighian layer become covered with granules, which eventually become hardened to form the nail substance; at the same time the stratum lucidum cells increase in number, and help to form the body of the nail. Last of all, the free edge of the nail is formed by the shedding of the stratum lucidum. The growth of the nail is caused by the addition of cells at the posterior margin; it gains in thickness by additions from the stratum mucosum at the lunula.
5. Peyer's patches are large, oval groups of lymph follicles, closely packed together, and held in place by adenoid tissue. They are chiefly found in the ileum.

CHEMISTRY AND TOXICOLOGY.

1. An acid is a compound of an electro-negative element or radical with hydrogen, part or all of which hydrogen it can part with in exchange for an electro-positive element, without the formation of a base. A base is a substance which can enter into double decomposition with acids to produce a salt and water.
2. Valence is the combining power of an atom of an element as compared with that of an atom of hydrogen. Calcium is bivalent; sodium and potassium are univalent.
3. Ammonia is prepared by heating a solution of ammonium hydroxide:

$$NH_4HO = NH_3 + H_2O$$

4. An anhydride is an oxide capable of combining with water to form an acid.
5. Ferments of the body are: (1) proteolytic, *e.g.* trypsin; (2) amylolytic, *e.g.* ptyalin; (3) steatolytic, *e.g.* steapsin; (4) inverting, *e.g.* invertin; (5) coagulating, *e.g.* milk curdling ferment.
6. Gastric juice consists of ninety-nine and a half per cent. water, and half of one per cent. solids. It contains hydrochloric acid, pepsin, a curdling ferment, mucin, salts, and water. The amount of free hydrochloric acid is about two parts in a thousand. Tests for free hydrochloric acid: (1) Add to a few drops of filtered gastric juice one drop of a solution of dimethyl-amido-azo-benzol; a cherry red color develops. (2) The reagent is prepared by dissolving two grams of phloroglucin and one gram of vanillin in 100 cc. of 90 per cent. alcohol; then place an equal number of drops of this reagent and of gastric juice (filtered) on a porcelain dish, and allow the fluid to evaporate slowly; a rose tint appears at the edge.
7. Symptoms of poisoning by bichloride of mercury are: a burning pain in the mouth, pharynx, and stomach; the mouth and tongue are white; the vomitus is white, with shreds of mucous membrane, and tinged with blood; bloody stools, also salivation may occur.

Treatment: the antidote is white of egg, but too much must not be given at one time; this should be followed by an emetic.

8. In opium poisoning there may be three stages: (1) a period of excitement, in which the patient is active, talkative, and has hallucinations; (2) a period of drowsiness, in which the patient is sleepy, but may be aroused; his face is pale, lips livid, pupils contracted; this passes into (3) the stage of coma, from which the patient cannot be aroused, the reflexes are abolished, the pupils are very contracted,

*The questions were published in the issue of November 3.

the pulse is slow and irregular, and the respirations are infrequent and shallow.

In alcoholic poisoning the pupils are not contracted, the respirations are about normal, and the skin is cooler than in opium poisoning.

9. In cocaine poisoning there will be found pain and fullness in the head, pulse first quick, later feeble and slow, extremities cold. The symptoms are not constant.

10. The continuous use of acetanilide may give rise to decrease in the number of red blood cells; the face is livid and covered with perspiration, the respirations become slow and shallow, the pulse soft, compressible, and gradually weaker.

Treatment: stop further administration of the drug, then support the patient by stimulants, warmth, and strychnine.

BACTERIOLOGY.

1. Bacteria are unicellular organisms of vegetable nature, devoid of chlorophyl, and multiplying by fission. They are recognized by their shape, size, mobility, grouping, growth, and behavior to cultures and staining reagents. The chief culture media are: milk, blood serum, bouillon, gelatin, agar, potato. The conditions favorable for their growth are moisture, temperature of between 10° and 40° C., nutritive material in the shape of decomposable organic matter, a medium of neutral or faintly alkaline reaction, and rest. Bacteria enter the body through the abraded skin or mucous membrane, or through the respiratory and alimentary tracts.

2. The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin, and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

3. The bacillus of tetanus is characterized by its peculiar spore, formed at one end of the bacillus, and giving it the appearance of a pin; it is purely anaërobic, and cannot be developed at all in the presence of oxygen. It generally comes from the soil, and is found in penetrating wounds. It appears in two forms, the spore-bearing form, as described above, and the vegetative form, which is a short bacillus with rounded ends, and which may occur singly or in pairs, or may form long filaments. It grows in gelatin stab cultures in the middle of the medium, and the colonies look something like a fir tree; its growth is slow, and a disagreeable odor is at the same time emitted. In bouillon, it grows near the bottom of the tube, and produces gases.

4. Ptomaines are the putrefaction products of dead animal tissues or fluids.

Toxins are the products of pathogenic bacteria or of ptomaines or leucomaines, and are actively poisonous.

Toxoids are toxins whose poisonous properties have been reduced or modified.

An antitoxin is a substance formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

An antitoxic unit is the quantity of antitoxin, which, on being inoculated into a guinea pig weighing 250 grams, will neutralize one hundred times the lethal dose of toxin.

5. A sterile swab is rubbed over any visible membrane on the tonsils or throat, and is then immediately passed over the surface of the serum in a culture tube. The tube of culture, thus inoculated, is placed in an incubator at 37° C. for about twelve hours, when it is ready for examination. A sterile platinum wire is inserted into the culture tube, and a number of colonies of a whitish color are removed by it, and placed on a clean cover slip, and smeared over its surface. The smear is allowed to dry, is passed two or three times through a flame to fix the bacteria, and is then covered for about five or six minutes with a Loeffler's methylene-blue solution. The cover slip is then rinsed in clean water, dried, and mounted. The bacilli of diphtheria appear as short, thick rods with rounded ends; irregular forms are characteristic of this bacillus, and the staining will appear pronounced in some parts of the bacilli and deficient in other parts.

The dose of diphtheria antitoxin is from 2,000 to 3,000 units to be injected as soon as possible, and, if necessary, to be repeated in twelve hours; in severe cases it may be repeated earlier. In laryngeal and severe pharyngeal cases a larger dose may be used, up to 5,000 units. The immunizing or prophylactic dose is from 200 to 500 units.

SURGERY.

1. Local anesthesia can be caused by applying a mixture of salt and ice, or by spraying the part with ether or with ethyl chloride. Cocaine hydrochloride, in watery solution of about 5 to 8 per cent., can also be applied to a mucous surface, or in a one per cent. solution it can be dropped into the eye. The same drug can be used hypodermically in solution of from one to four per cent., but it does not act on inflamed tissues. When injected into a finger or toe, its action can be increased by the application of a tourniquet, which prevents the solution from being carried away in the blood current. Hypodermic injections of sterile water are said to have the same effect as those of cocaine.

2. Sepsis is a condition due to the entrance and multiplication of bacteria in the body, or by the absorption of their products. The stages are (1) that of septic fever, with rapid rise of temperature, remitting each morning, pulse full and rapid, anorexia, furred tongue, dry skin, constipation, scanty, high-colored urine, headache; (2) hectic fever, due to retention of discharges, with fever, flushed face, anorexia, tongue dry and red, diarrhea, profuse sweating, urine loaded with urates, and tendency to formation of bedsores; (3) in long-standing cases amyloid disease may follow, especially when there is a long-continued discharge; albuminuria and diarrhea are commonly present in this stage.

4. The indications for inguinal colostomy are: (1) congenital absence of the rectum when incision by the perineal route fails to reach the intestine; (2) chronic obstruction of the large intestine, which cannot be relieved by other means; (3) volvulus of the sigmoid flexure which cannot be otherwise reduced; (4) cancer of the rectum when a radical operation is inadvisable; (5) as a preliminary operation to excision of the rectum.

6. The chief complications of fracture are: compound fracture, injury to blood-vessels, gangrene, degeneration and contraction of muscles, stiff joint, atrophy of limb, suppuration, injury to nerves, fracture into joint, dislocation, septicemia, fat embolism, pneumonia, and delirium tremens.

GYNECOLOGY.

1. Laceration of the cervix may cause hypertrophy, elongation, sclerosis, cystic degeneration, or carcinoma of the cervix; subinvolution, or displacements of the uterus, also endometritis. Other results may be pain on walking, on defecation, or during coitus; sterility or abortion; headaches, backache, neuralgic pains, neurasthenia, indigestion, constipation.

2. Lacerated perineum may be followed by local tenderness, irritable scar, reflex disturbances, subinvolution of the uterus, rectocele, cystocele, prolapse of the uterus, and incontinence of feces.

3. Vaginismus is a condition of painful and spasmodic contraction of the vaginal orifice, which renders coitus either painful or altogether impossible. Its causes are irritable hymen, ulcer, or fissure anywhere in the immediate vicinity, urethral caruncle, carunculæ myrtiformes, a long perineum with vaginal orifice placed too anteriorly. The treatment consists in removing the cause when possible, tonics and general constitutional treatment, dilatation of the vaginal orifice; local application of a five per cent. solution of cocaine will relieve the hyperesthesia and allow of coitus.

4. The sources of streptococcic poisoning in the puerperium are the hands of the physician, nurse, midwife, or of the patient herself; unclean instruments and catheters; coitus during the time immediately preceding labor; contact with secretions from wounds of any kind, no matter where situated; general unhygienic surroundings, and contact with a patient suffering from scarlet fever or erysipelas on the part of any one attending on the woman. The percentage of such cases will depend on the care exercised by doctor, nurse, etc.; when infection does occur, it is generally streptococcic infection, either pure or mixed with other germs.

OBSTETRICS.

1. In external pelvimetry four measurements are generally taken: (1) between the anterior superior spines of the ileum, normally about ten and a quarter inches; (2) between the external edges of the iliac crests, normally about eleven inches; (3) between the heads of the two great trochanters, normally about twelve and a quarter inches; and (4) between the spinous process of the last lumbar vertebra and the upper margin of the anterior surface of the symphysis pubis, normally about eight inches.

2. It was formerly held that pregnancy had a beneficial effect upon tuberculosis, that the mother was likely to improve as long as the pregnancy lasted, though she might rapidly fail after the birth of the child. The more recent view is that pregnancy exercises a harmful effect; that pregnancy, labor, and lactation only weaken the patient, lower the vitality still further, and hasten the end.

3. The patient should be advised to avoid indigestible or very highly seasoned articles of food; her diet should be

nutritious and sufficient. In patients who have previously had unduly heavy children it would be well to restrict the carbohydrates and fluids during the last two or three months of pregnancy. The tendency to constipation, which may be increased during pregnancy, should be overcome by laxative foods or fruit.

PATHOLOGY.

1. The etiology of hyaline degeneration is somewhat obscure; it is said to be caused by infections and intoxications, such as lead, alcohol, and syphilis. The seats are: the blood-vessels in the brain, lymphatic glands, voluntary muscles, and ovaries. Aneurysms, sclerosed arteries, the heart in endocarditis, and gummata may also undergo hyaline degeneration.

2. Normally, the blood contains about 0.1 per cent. of grape sugar, which is chiefly derived from the carbohydrates in the food, but also by a splitting up and rearrangement of the elements of the proteids, and possibly also from the fats. This and other changes are supposed to take place in the liver, which, together with the muscles, converts the sugar into glycogen, and also acts as a storage place for the glycogen. The glycogen is changed again into sugar and passed into the blood, which is thus kept supplied with its proper amount. In diabetes this arrangement becomes disturbed, with the result that some of the sugar delivered to the blood is not utilized. According to Tyson, this may be brought about in several ways: (1) It may be that the glucose arising by a reconversion of the glycogen stored in the liver is contributed to the blood too rapidly to be oxidized; (2) It may be that, although the glucose is delivered in normal quantity, it is still not consumed because of some defect in the oxidizing mechanism, some deficiency in the glycolytic ferment; (3) It may be that the glucose arising from sugar and starch digestion in the intestine is not first converted into glycogen as in health, but passes directly through that organ to the vena cava too rapidly or in too large quantity to be utilized, or lacking some molecular quality which permits its oxidation.

3. In extreme cold the skin is pale and waxy, with irregular dusky, reddish patches; the superficial parts are bloodless, while the viscera, including the brain, are congested; the heart and large vessels leading from it are full of blood, and the blood is of a brighter red color than usual. In extreme heat, the lesions are great congestion of the viscera, early rigor mortis and putrefaction, the red blood corpuscles are broken up, and otherwise altered in appearance, there is also coagulation of the proteid matter in the tissues, and the kidneys have a reddish-brown color.

7. Fibrinous pneumonia is the same as lobar pneumonia; catarrhal, is the same as lobular or bronchopneumonia; purulent, is any form of pneumonia in which pus is formed; fibrinous pneumonia is the same as interstitial pneumonia, and is often called fibroid phthisis, or cirrhosis of the lung.

8. Caries means molecular death and disintegration of bone, attended with suppuration. Necrosis implies that a portion of bone has died *en masse*, molar death of bone. These two terms are used in regard to bone, in the same way that ulceration and sloughing are, with regard to the soft tissues.

PRACTICE OF MEDICINE.

1. The remote effects of syphilis of the nervous system are: Mania, melancholia, paretic dementia, pseudoparesis, myelitis, meningomyelitis, paraplegia, hemiplegia, locomotor ataxia, general paresis, neurasthenia, hysteria, epilepsy and neuralgia.

6. In duodenal ulcer the pain is apt to be more to the right and to occur at an interval of two or three hours after meals; the hemorrhages will be intestinal, and the blood will be passed by way of the bowels, and not vomited. In many cases the symptoms are identical with those of gastric ulcer.

7. In typhoid fever there is a dull and apathetic expression, the cheeks may be flushed, the tongue dry, and the teeth covered with sordes. In tetanus the jaws are firmly closed, the corners of the mouth are drawn up, and the forehead is wrinkled. In exophthalmic goiter there is a staring expression, accompanied with more or less protrusion of the eyeballs.

9. Streptococcic infection of the throat presents symptoms that are apt to be more severe than those of diphtheria. The temperature runs as high as 104° to 106°, but the only sure test is in the absence of the Klebs-Loeffler bacillus.

EYE, EAR, NOSE, AND THROAT.

2. In the condition known as the Argyll-Robertson pupil, the pupil responds to accommodation, but not to light. It is found in locomotor ataxia, general paralysis of the insane, and sometimes in cerebral syphilis.

MEDICAL JURISPRUDENCE.

1. Medical Jurisprudence is the application of the knowledge of any of the branches of Medicine to the problems and requirements of the law.

4. According to Taylor, the term insanity is applied to "those states of disordered mind in which a person loses the power of regulating his actions and conduct according to the ordinary rules of society. In all cases of real insanity the intellect is more or less affected."

5. Malpractice includes any act, whether willful, or through negligence or ignorance, by which a physician or surgeon causes a person under his care to suffer death or unnecessary injury. The physician is not supposed to guarantee a cure, but is expected to do his best to bring about a cure.

HYGIENE AND PUBLIC HEALTH LAWS.

1. Hygiene is the science and art of all that tends to the maintenance and improvement of health, the prevention or shortening of the duration of diseases, and the prolongation of life. Health laws are such regulations, ordered and enforced by the proper powers in a community, as deal with the subjects comprehended under hygiene, and include the arrangement and building of houses, schools, etc., their ventilation, water supply, lighting, and the removal of refuse and excreta; the regulation of dairies and slaughter-houses, the management of infectious diseases, the regulation of trades, the supervision of nuisances, and the disposal of the dead.

2. Impure water may cause typhoid fever, dysentery, diarrhea, indigestion, goiter, vesical calculi, cholera, yellow fever, scarlet fever, diphtheria, tapeworms, and lead poisoning. Impure milk may cause tuberculosis, scarlet fever, diphtheria, typhoid fever, and cholera.

3. CO_2, organic matter, or crowd poison may accumulate. As an adult is supposed to require 3,000 cubic feet of fresh air per hour, a child may be supposed to require, say, 2,400 cubic feet per hour, or forty cubic feet per minute.

MATERIA MEDICA AND THERAPEUTICS.

1. By the empirical use of remedies is meant the employment of them, because it has been found by experience that they are of benefit in conditions similar to the one under treatment; *e.g.*, colchicum in gout, opium to relieve pain. By the intelligent employment of remedies is understood their use based upon a knowledge of the physiological action of the drug and a further knowledge of the pathological condition present; *e.g.* the use of digitalis in mitral lesions of the heart.

2. Among the so-called remedies now relegated to a judicious oblivion, may be mentioned the use of quintine in typhoid, potassium chlorate in diphtheria, large doses of creosote in pulmonary tuberculosis, bleeding for nearly everything, methylene chloride as an anesthetic, Condurango for cancer, and sarsaparilla for syphilis.

3. Hypnotics are agents used to induce sleep. The two classes into which they may be divided are: (1) those which relieve pain and produce sleep, and (2) those which will produce sleep, but will not relieve pain. Opium is an example of the former class, and chloral of the latter.

4. Anthelmintics are drugs used for the purpose of removing intestinal worms. Vermifuges cause the expulsion of these worms, and vermicides destroy them. The parasites against which they are directed are: (1) the round worm (*Ascaris lumbricoides*); (2) the tapeworm (*Tænia solium, T. saginata,* and *Bothriocephalus latus*); (3) the seat worm, or round worm or pin worm (*Oxyuris vermicularis*); and (4) *Ankylostoma duodenale.*

Conception During the Existence of Amenorrhea.—Louis Bricout has made a careful study of this subject, and has reached the conclusion that amenorrhea is far less frequent during lactation than is generally admitted. Conception during this amenorrhea is very frequent. As conception often occurs during lactation it may be surmised that in spite of the absence of menstruation, ovulation continues in a normal manner. Bricout cites an extremely curious personal observation. A woman thirty-five years old had had within fifteen years seventeen pregnancies. Thirteen of the children were born at term; there were four abortions. In all of these pregnancies conception had taken place during the amenorrhea of lactation, without the re-establishment of menstruation. In essential amenorrhea, that which is not connected with any pathological alteration of the genital organs, conception is far more rare, although it is sometimes observed.—*Journal de Médecine et de Chirurgie Pratiques.*

State Medical Licensing Boards.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Dec.	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	January	8
Arkansas*	F. T. Murphy, Brinkley	Brinkley	January	7
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	January	1
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	12
Delaware	P.W.Tomlinson, Wilmington	Dover	Dec.	11
Dis. of Col'bia	W.C.Woodward, Washington	Washington	January	10
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago	January	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. F. Kennedy, Des Moines	Des Moines	Dec.	11
Kansas	T. E. Raines, Concordia	Topeka	February	12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Portland	March	—
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	January	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City	Nov.	26
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	Feb.	4
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	January	1
Ohio	Geo. H. Matson, Columbus	Columbus	Dec	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Dec.	26
Oregon*	B. E. Miller, Portland	Portland	January	1
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	Dec.	4
Rhode Island	G. T. Swarts, Providence	Providence	January	3
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt. Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	January	7
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Parkersburg	April	9
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne	Dec.	5

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Missouri reciprocates under certain conditions, with Indiana, Michigan, Nevada, Maine, Minnesota, Delaware, Iowa, Kansas, Colorado, Kentucky, Wisconsin, Wyoming, and the District of Columbia. A licentiate living in either of these States who desires to secure a license in Missouri to practise medicine must be able to comply with the following rules: (1) That a certificate of registration showing that an examination has been made by the proper board of any State, on which an average grade of not less than 75 per cent. was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the State where reciprocal registration is sought, may be accepted in lieu of examination, as evidence of qualification: Provided, that in case the scope of said examination was less than that prescribed by the State in which the registration is sought, the applicant may be required to submit to a supplemental examination by the board thereof in such subjects as have not been covered. (2) That a certificate of registration or license, issued by the proper board of any State, may be accepted as evidence of qualification for reciprocal registration in any other State: Provided, the holder of such certificate had been engaged in the reputable practice of medicine in such State at least one year: Provided, also, that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college of four years' requirements in good standing in the State in which reciprocal registration is sought, and that the date of such diploma was, prior to the legal requirements of the examination test, in such State.

Georgia.—A bill which has been introduced into the Legislature providing that the right to practise medicine should be granted all products of incorporated medical colleges in this State, without the necessity of passing the State board examination, was killed in committee.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending November 10, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	319	163
Diphtheria	290	39
Measles	57	2
Scarlet Fever	84	3
Smallpox	—	—
Varicella	36	—
Typhoid Fever	138	20
Whooping Cough	31	6
Cerebrospinal Meningitis	10	10
Malarial Fever	.....	.....
Totals	965	243

Basic and Acid Equivalents in the Urine in Physiological Conditions.—Arturo Campani studied the oscillations in the curve of acidity in the urine in various ages, sexes, and physiological conditions. He gives us his results in the following conclusions: As to the time of day, the urinary acidity is at its maximum in the afternoon, its minimum in the morning, between the two in the night; the basicity is least in the night, greatest in the morning, and is high throughout the day. The absolute amount of acids and bases is smallest in the night, greatest during the day. This is due to the food ingested; during digestion the acids and bases are increased; after digestion is over they are reduced again. The vegetables increase most the amount of the bases. The albuminoids reduce them. Acidity and basicity are least in infancy, greatest in the prime of life, lessened in age. In women the excretion of acids and bases is greater than in man; in menstruation the excretion of acids is increased; pregnancy produces no change except lessened diuresis.—*Giornale Internazionale della Scienze Mediche.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 9, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
District of Columbia, Washington	Nov. 3	1	..
Louisiana, New Orleans	Oct. 27–Nov. 3	2	(1 case imported.)
Wisconsin, Milwaukee	Oct. 20–27	14	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Sept. 15–22	2	..
Brazil, Bahia	Sept. 22–29	9	..
Canada, Moncten, N. B., vicin. of	Nov. 1	100	..
Chile, Antofagasta	Sept. 12–26	30	10
Coquimbo	Sept. 8–22	30	1
Ecuador, Guayaquil	Oct. 7–14	..	6
India, Bombay	Sept. 25–Oct. 2	..	1
Madras	Sept. 29–Oct. 5	..	3
Italy, General	Oct. 11–18	2	..
Mexico, Veracruz	Oct. 6–13	1	1 imported from Mexico.
Persia, Ispahan	Aug. 31	..	Present
Russia, Moscow	Sept. 30–Oct. 6	5	..
Odessa	Sept. 30–Oct. 6	2	..

YELLOW FEVER.

Cuba, Habana	Oct. 31–Nov. 6	9	1
Nueva Paz	Nov. 2	1	..
Rodas	Nov. 6	1	..
Santa Clara	Nov. 1	1	..
Mexico, Merida	Oct. 14–20	1	..
Ecuador, Guayaquil	Oct. 7–14	..	3

CHOLERA.

India, Bombay	Sept. 25–Oct. 2	..	12
Calcutta	Sept. 15–29	..	44
Madras	Sept. 29–Oct. 5	.	65

PLAGUE.

India, General	Sept. 15–29	11351	12702
Bombay	Sept. 15–Oct. 2	..	40
Calcutta	Sept. 15–29	..	21
Persia, Seistan	Aug. 1–17	2	.
Peru, Lima	Sept. 14	1	..

Medical Record

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Original Articles.

REPORT OF ONE HUNDRED CONSECUTIVE LAPAROTOMIES; WITH SOME GENERAL OBSERVATIONS, AND A SPECIAL REFERENCE TO APPENDICITIS.

BY VICTOR F. MARSHALL, B.S., M.D., AND
EDWARD W. QUICK, M.D.,
APPLETON, WISCONSIN.
SURGEONS TO ST. ELIZABETH'S HOSPITAL.

IN offering this analysis of one hundred recent consecutive laparotomies we wish to emphasize certain facts that are already well known to the profession, and, if possible, to add some data that may assist in clarifying some mooted questions in operative surgery. The cases come under the following heads: (1) Acute Appendicitis, twenty-one cases; (2) Chronic Appendicitis, eighteen cases; (3) Gallstones, five cases; (4) Cholangitis (Cholecystitis), two cases; (5) Gastroenterostomy, two cases; (6) Intestinal Obstruction, two cases; (7) Ectopic Pregnancy, two cases; (8) Hysterectomy (Abdominal), four cases; (9) Large Ovarian Cyst, two cases; (10) Miscellaneous operations on uterus and adnexa, including pyosalpinx, small ovarian cyst; prolapse ovary and displacement of uterus, thirty-one cases; (11) Hernia—Inguinal, six cases; Femoral, two cases; Ventral, three cases. The mortality in this series was 2 per cent. One patient operated upon for acute appendicitis died the second day. This case will be discussed under indications for operation in acute appendix disease. In the second case, a hysterectomy for fibroid weighing 12½ pounds, the patient died thirty-six hours after operation from shock. This patient had been confined to bed for four months and was exsanguinated.

We have endeavored in doing intraabdominal work to use the smallest incision possible and to enlarge it to give good view and ample room for whatever manipulations are necessary. In deep and difficult work no incision is large enough that will not admit the whole hand. That operative rapidity is an element of success there is no doubt, for the inconveniences of anesthesia, the chances for infection, the exposure to the air, and the drying of the anatomical parts exposed during the course of an operation are all factors which are unfavorable and increase in importance in geometrical ratio with the duration of the operation. Many simple appendicitis operations are completed in fractions of an hour, while others with extensive adhesions may consume more than an hour. Facility of technique is cultivated without especial thought as to the exact number of minutes used in the performance of the operation.

In this series of cases we have used the following procedure for closing the abdominal wall, employing the Bartlett process catgut for buried sutures: The peritoneum is closed separately, bringing the serous surfaces together to prevent, as far as possible, any adhesions of the abdominal viscera to the line of incision. Whenever necessary, the muscles are approximated with one or more sutures loosely tied. We think the proper approximation of the fascia is the keynote to the prevention of postoperative hernia, and our technique is to overlap the fascia according to the method popularized by Noble. If adipose tissue is excessive, sutures are placed in it. In small incisions the subcuticular stitch of heavy silkworm gut is used. The cosmetic effect even upon the patient's abdomen is not to be ignored, for ugly scars and stitch marks are offensive. Unless some special indication arises, the wound is not inspected until the time of removal of suture or sutures. Exception, of course, is to be made in those cases in which there is possibility of suppuration. In such cases the figure-of-eight suture is used, so that one or more may be removed if necessary to establish peritoneal drainage.

In the series peritoneal drainage was instituted in eleven cases, of which nine were drained by the insertion of a rubber tube. The methods of employing the tubes were as follows: (1) Simple fenestration and wrapping with gauze; (2) split tubes with gauze wicks; (3) cigarette drain made with alternate layers of gauze and dental rubber. The Mikulicz drain was used in one case of ovarian cyst in which there were dense adhesions and persistent hemorrhage—Case No. 40. We will refer to this later under intestinal obstruction. One, Case No. 15, was drained by ½-inch gum rubber tubing, fenestrated, from the abdominal wall externally through vagina. This case was an infected ecoptic pregnancy, which came to operation with a temperature of 103° and a pulse of 130.

In several evidently similar cases we were somewhat in doubt as to the advisability of employing drainage, and in these cases we found the progress quite as satisfactory as in those in which drainage had been employed, and our tendency is to use drainage less often than formerly.

During our student career ten years ago the recognized teaching was to keep all laparotomy patients quiet in bed for twenty-one days. We are following, however, more recent thought in this connection, and have shortened this irksome period markedly. In all simple laparotomy cases with small incisions, and in which extensive work is not done upon the viscera, the patients are placed in sitting posture upon the third or fourth day and permitted to be up upon the sixth day, usually leaving the hospital before the tenth day. The other cases are a law unto themselves, depending upon their general condition. Great latitude is permitted patients as regards movement in bed after the first day.

As soon as the vomiting ceases following anesthesia, and in those cases in which no vomiting has occurred, water is permitted by mouth in small quantities at frequent intervals. An exception to this is made in those cases in which the operation

involves the upper portion of the gastrointestinal tract. The withholding of water in times past from laparotomies has been the cause of untold suffering. We believe this practice was founded largely upon error. What is absorbed freely by the duodenum and should be given freely after vomiting has ceased. One point which stands out prominently is the fact that in but a very small percentage of cases was it necessary to use hypodermic injections of morphine to control pain. It has been our custom to use primarily aspirin in 10- to 15-grain doses, and if this is not effective, codeine sulphate gr. one-half hypodermically is given; if both fail to produce rest and quiet, morphine is given.

In ninety-four cases anesthesia was induced by ether, the open method being used. In the remaining six cases chloroform was used for the following reasons: In three cases there was present at the time of operation a mild bronchial affection; in three cases the operation was performed by lamplight in homes. A decided preference is given to ether for anesthesia, and, whether well founded or not, we shall act upon the belief for the present that ether is a safer general anesthetic than chloroform, due regard being paid to the respiratory, cardiac, and renal lesions. All anesthesias are preceded half an hour by a hypodermic injection of morphine gr. 1/4 and atropine gr. 1/100.

One of the routine rules followed in the after-treatment of our patients is the use of a rectal injection of eight ounces of physiological salt solution every three or four hours until all symptoms of shock and the feeling of thirst have disappeared. Hypodermoclysis was used in four cases. Intravenous transfusion was not found necessary in any of the cases of the above series. Whenever tympany became a source of discomfort to the patient before the bowels had freely moved, the rectal tube was inserted high to facilitate the passage of flatus, which usually gave immediate relief.

In all of the cases twenty-four hours after operation calomel was given in 1/10 gr. doses, repeated hourly until one grain had been given, followed in two hours after the last dose by two drams of magnesium sulphate. Exception to this is made, of course, in major-operations on the gastrointestinal tract. When an unsatisfactory result occurred, a high rectal enema of magnesium sulphate, glycerin, and water, in the usual proportion of 2, 4, and 6 ounces, respectively, was given.

During the day preceding the operation the patient is given light diet and allowed an abundance of good water and a warm general bath. A mild cathartic in the form of castor oil or magnesium sulphate is also given this day, followed by an enema the morning of the operation. Castor oil is generally given in the foam of beer or with extract of malt. The field of operation is prepared the evening before by first shaving, and by thorough washing with green soap and water, and then the application of soap poultice to the abdomen until entrance into operating-room. The abdomen is then washed once more with a soft brush or gauze and soap, followed by sterile water, and this in turn by ether, alcohol, and corrosive sublimate one part to one thousand. In emergency operations the preliminary preparation was necessarily omitted, and in this series we have noted no difference between the two methods in obtaining primary union. Four sterile towels are placed about the field of operation with just enough space exposed. Over the towels is placed a sterile sheet with an opening sufficient in size to do whatever is necessary. Upon completion the wound, unless drainage has been instituted, is sealed with gauze and collodion, which is not removed until the time of removal of suture or sutures. The hands are prepared by washing in an abundance of soap and water, using a brush which is not coarse. After thorough washing for fifteen minutes the hands are immersed in corrosive sublimate, one part to three thousand, and kept there several minutes. After washing again in sterile water and drying with a sterile towel, dry rubber gloves are put on. The rubber gloves are sterilized with dressings in the autoclave, and in the past two years that we have been using this method of sterilizing them we have as yet found no reason to change. There were no cases of stitch abscess when drainage was not necessary. Eight patients were operated upon in private houses, with no deaths, while the remaining ninety-two were operated upon in the hospital, with two deaths. The above number is too small to use as a legitimate base of comparison.

One patient, Case No. 40, aged twenty-two, had a somewhat stormy convalescence. In removing a large left ovarian cyst which was closely adherent to the pelvic floor, uterus, and bowel it was necessary to use a Mikulicz drain to check persistent hemorrhage. The drain was removed without difficulty six days later, and all augured well for a speedy convalescence until the morning of the twelfth day, when some symptoms appeared of intestinal obstruction, vomiting occurring after a breakfast of light cereal, toast, and coffee. During the night previous, however, she complained of some abdominal distress, as of "something pulling." As both the temperature and pulse were normal and nothing was found at the time to account for this sudden emesis, the nurses were directed to watch the case carefully and notify us of any change. Thinking the food had produced this sudden change, liquid nourishment was ordered for the day. Next day, the thirteenth day after operation, she vomited again an hour before the regular time for breakfast. The matter consisted of nothing more than stomach fluid. The stomach was now thoroughly lavaged and liquid food ordered continued. The bowels moved thoroughly shortly after the lavage. The following day the conditions were about the same, with the exception that there was no emesis until near noon, when vomiting again appeared, and recurred at intervals of half to one hour, first of stomach secretions, and later of a material with fecal odor. As we were occupied with other work outside the city, we did not see the patient until 5 o'clock, when, after examination, intestinal obstruction was diagnosed, due no doubt to angulation of the bowel from adhesions, and we decided upon immediate reopening of the abdomen. This was done with little difficulty and the obstruction was found to be caused by the omentum adhering quite firmly to the raw surface upon the posterior aspect of the uterus and floor of pelvis, about which the bowel had become angulated. The omentum was divided between two ligatures and the abdomen was closed, after which convalescence progressed rapidly, the patient leaving the hospital ten days after the second, or twenty-four days after the initial laparotomy.

The series presented eighteen cases of chronic appendicitis. Some were operated upon after a single attack in which local tenderness persisted, several after the second attack, and a few after a dozen or more. We do not advise operation after a single attack has subsided, but do invariably after the second. In no case has there been persistence of symptoms. In

several cases the appendices had such an absence of anatomical change that we doubted the correctness of the diagnosis, but the course of events demonstrated the efficacy of the operation. We are continually on guard against those patients with neuroses who imagine themselves suffering with the most common diseases in the community. Of acute appendicitis there were twenty-one cases. The time of operation varied from a few hours after the onset of symptoms to cases in which definite abscess was of several days' standing. We are without equivocation in the camp with those surgeons who believe there is but one indication for operation, and that is the positive diagnosis that acute appendicitis exists. To this we make one exception. Cases seen in consultation in which no abscess has formed and in which the patient is decidedly better, as evidenced by his own word and the facts recited by the attending physician, in short, where convalescence is progressing satisfactorily and patients are on the mend, we do not operate. However, we are not disposed to quarrel with our colleagues who do not make this exception.

No case is considered hopeless or too sick to stand an operation so long as the radial pulse can be felt. Early, intermediate, and late operations, as defined by hours and days, are terms that should be relegated to the attic of worn-out and obsolete medical terminology. The virulence of the infection and the condition of the lumen of the appendix with respect to drainage determine the time of gangrene and rupture. The only case lost was that of a young woman of twenty-five years. She was seen one morning and gave a history of diarrhea for two days, with diffuse abdominal pain of a mild character. There was slight tenderness over the appendix. Pulse 90, temperature 99°. She was seen again at 5 P. M., when the temperature was 102°, pulse 96, with marked rigidity on the right side. Appendicitis was diagnosed and immediate operation advised. The family wanted consultation, and the patient did not go on the operating table until 1 A. M. the following morning. When the peritoneum was incised a beginning peritonitis presented itself. The appendix was immediately accessible and was removed. A drainage tube was inserted. The patient died twenty-four hours later of septic peritonitis. We believe she would have died without operation. Other cases of the series had quite as unfavorable conditions and recovered. We cannot refrain from commenting on an article in the MEDICAL RECORD of October 6, written by Dr. J. J. Brownson of Dubuque, Iowa, under the heading, "Appendicitis—To Operate or Not to Operate." In the first paragraph Dr. Brownson makes the remarkable statement: "There have been more deaths from appendicitis since the operative method has been in vogue than during the expectant plan, which I believe is due to interference being practised at the wrong time." Our literature is replete with facts which directly controvert this statement. In Kelly's Monograph we note (p. 22) "Dr. Lewis (in the late fifties) wrote under the caption, 'A statistical contribution to our knowledge of abscess and other diseases consequent upon the lodgment of foreign bodies in the vermiform appendix, with a table of forty cases.' He declares that the obscure nature of this disease, its rapid and almost necessarily fatal termination invest it with a peculiar interest to the physician." The same author is quoted on page 23: "The prognosis is extremely unfavorable, as only three out of forty-seven recorded cases recovered." W. T. Bull, in the MEDICAL RECORD in 1873, analyzes sixty-seven cases; thirty-two recovered, thirty-five died. Kelly (p. 37) states: "It is of interest to note here the reduction of mortality from 'perityphlitis' after the introduction of the Parker operation. In 1867 the death rate was 47 per cent., while in 1882, when Noyes wrote, Parker's operation had been in use for fifteen years, and the mortality was reduced as low as 15 per cent." That the appendix is the source of practically all cases of peritonitis limited to the cecal region, and is the chief cause of generalized peritonitis, is now universally recognized. Nor can we doubt that our forefathers in medicine were dealing in a great majority of cases with appendicitis when they sent their patients to the grave with "inflammation of the bowels" and "idiopathic peritonitis." Appendicitis in times gone by has been a veritable slaughter of the innocents. Dr. Brownson states that as a result of following his theory that no operations should be performed during the so-called intermediate period there have been but two deaths in Dubuque county following operation for appendicitis since January, 1904. We think it is pertinent to ask Dr. Brownson how many have died of appendicitis in that time without operation. It is an easy matter to have a low percentage mortality if only selected cases are operated upon and desperate cases are denied the chance to live that an operation would give, for fear it would "injure the reputation of both the operator and the science of surgery." In the majority of cases of acute appendicitis in Appleton and immediate vicinity an operation is performed as soon as the diagnosis is made; but there are more deaths in the minority treated by the "do-nothing," "watch-and-wait" plan than in the majority under radical treatment. Dr. Brownson states also that "no case of acute septic peritonitis caused by the direct perforation of the peritoneal cavity will be found with a temperature of 102° and a pulse of 120; rather will they have a temperature of 105° or 106° and pulse of 140 or 160, together with a leaky skin, etc." We, too, have lived in the stage of surgical experience in which we made a god of pulse and temperature and worshiped at its shrine, with a simplicity born of childlike faith. But the rude awakening came as it will come to Dr. Brownson. Here are two cases in point which occurred in the practice of one of us.

A man entered the hospital with a history of having been injured by the toppling over of a pile of lumber. There were no visible signs of injury to the abdominal wall. Temperature normal, pulse under 90. During the following thirty hours moderate tympany developed and pulse and temperature increased, but both were less than 100. Peritonitis was suspected and the abdomen was opened. There was a diffuse inflammatory process as denoted by injection, effusion of lymph, and paresis, and there was no guesswork as the small intestine was "strung," as we say, from the duodenojejunal junction to the ileum, where a perforation was found. The patient died before the belly was closed. The second case was as follows: A patient was brought to the hospital on a stretcher with a history of having been kicked in the abdomen by a man four days previously. He presented the Hippocratic facies and tympany, but had a pulse of 92 and temperature of 101°. Laparotomy was performed. Profiting by the experience of the former case, a large incision was made and the intestines were turned out of the belly into towels wet in hot physiological salt solution to save time and avoid the trauma of running along the whole intestine in search of a perforation. There was a general peritonitis coming from a rup-

ture in the sigmoid. This was sutured and free drainage was established. The patient was sent to his bed with the remark that he did not have one chance in a million. He promptly proceeded to recover and left the hospital in six weeks a well man. If we had followed Dr. Brownson's theory that a temperature of 105° or 106° and a pulse of 140 or 160 are necessary to diagnose septic peritonitis from perforation, both patients would now be in their graves instead of one. Reference to the literature will show multiplied instances of similar sort. General peritonitis from perforated appendix is not unlike the same process from a traumatic rupture. All the patients die without operation. A few recover with operation, and we court the disrepute to "the operator and the science of surgery" engendered by saving these few. If Dr. Brownson is not convinced and still believes that cases of acute septic peritonitis from perforation are "forlorn tasks" with which a surgeon should not risk his reputation, let him attack Dr. John B. Murphy, who reports to the American Association of Obstetricians and Gynecologists thirty-six consecutive cases of general suppurative peritonitis from perforation with one death. For an account of the report see the MEDICAL RECORD of October 13, 1906.

We shall continue to operate in all cases of appendicitis at the earliest possible time, with the one exception above noted. But what do we mean by operating? We mean a surgical procedure done in the interests of the patient's life; and we do the least possible compatible with his interests. Relieve pressure and institute drainage—these are the keynotes. The exhibition of the perforated, gangrenous appendix is a minor consideration. As soon as the peritoneum is opened and pus is found, a large tube is inserted and retreat is made—even if there is an excess of peritoneal fluid turbid in character with a few flakes of fibrin on the presenting loops of intestine, further operation is immediately abandoned, and free drainage is established. These operations require but a few minutes and we believe in no case militate against the patient's chances of recovery. How can they? Has anyone ever doubted the ancient dictum, "Where there is pus evacuate"; is there anything sacred about a suppurating peritoneum; and is not this structure subject to the same laws of physiology and pathological physiology as are the pluræ, the liver, and the large joints? Whenever your patient has an acute suppurative infection of the peritoneum open the cavity instanter; but once it is opened, beware of pernicious activity.

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TREATMENT OF CANCER OF THE LARYNX BY SUBCUTANEOUS INJECTION OF PANCREATIC EXTRACT (TRYPSIN);*

A CASE OF GROWTH, SUPPOSED TO BE CARCINOMA, CURED.

BY CLARENCE C. RICE, M.D.,
NEW YORK.

I HAD the honor to present a paper of this title before the American Laryngological Association at its last meeting, May 31, 1906. I believe it will be of interest to direct the attention of this Society to the treatment of cancer by trypsin injections, because I have obtained a remarkable result in the case of a growth of the larynx, which furnished the basis of my former paper. At that time, May 31, the patient with a tumor covering almost the entire left vocal cord had gone to Europe in a half cured condition. When I last saw him the posterior fourth of the growth had sloughed away, the anterior three-fourths remained, but the ulceration had not healed at any point. I returned from Europe the middle of September. I was almost afraid to inquire about the condition of my patient, expecting that the ulcerative thickness had extended, and that perhaps a radical surgical operation had been demanded. But when I called to him over the telephone, at his place of business, he replied that his voice was much improved and that he felt perfectly well. He came to my office at once, and I found that the growth had entirely disappeared. The only conditions to be seen in the larynx which indicated that he had had any trouble at all was a mild congestion of the left vocal cord and a slight loss of tissue at the edge of the cord at one point.

It seems to me that you will agree with me that this is a remarkable cure. That the growth was removed by the effect of the trypsin injections, and by the pancreatic capsules called "holadin," there can be no doubt, because no other treatment was used. My associate, Dr. Ferguson, and I were positive that the growth which covered almost the entire length of the left vocal cord, and extended slightly up the side of the larynx, was malignant in character, because it had every appearance of malignancy. It was a dry, hard, grayish enlargement, having a nodulated, irregular surface. It was in appearance unlike any benignant growth I have ever seen. The only reason that we think it may not have been a malignant growth, is the fact that it disappeared entirely under the influence of this treatment.

The laryngologist, who is accustomed to examine tumors of the larynx, can pretty surely determine, without microscopical examination, the character of a growth. Malignant growths as a rule give the appearance of involving tissue more deeply than benign ones, and they have a firm, irregular surface that benignant ones do not. This growth had the irregular surface that is sometimes seen in papillomatous growths of the larynx, but papillomata have a friable breadcrumb appearance. They look as though the surface could be rubbed away with the finger. The benign fibroma is usually single and has a small attachment.

Dr. Frank Hollister, who referred this case to the office, had examined the larynx a number of times and told me that he was positive that it was carcinoma of the larynx. It was a favorable case for surgical operation because the growth was localized and the glands were not involved.

At my suggestion, Dr. Hollister gave his consent to the treatment of the patient by pancreatic injections. It seems to us, that no matter what the character of the growth was, its absorption and disappearance by reason of the effect of the remedies used, is a remarkable occurrence and worthy of consideration. We did not remove a portion for microscopical examination, because we did not wish to produce the irritation which would have followed the use of any cutting instrument, and I believe it is wise in the treatment of these cases to avoid all irritation by forceps or snare. Our attention was especially called to the desirability of avoiding such irritation by the conduct of another case of growth of the vocal cord which Dr. Ferguson was treating at this time. The patient, a middle aged, healthy man, had what seemed to be a simple fibroma of the vocal cord about the size of a small pea. This was at first removed by the snap guillotine. It showed a

*Presented to the Society of the Alumni of the City Hospital, November 14, 1906.

marked tendency to rapid recurrence. The uneven surface at the edge of the cord was afterwards reduced by forceps, but in a few weeks the growth had enlarged so as to cover one-half of the vocal cord. At this time the pancreatic injections and holaden were administered daily to this patient, in about the same doses as were used in our successful case, but no favorable results were obtained, and later the whole of the larynx was removed. We felt that it was possible that if the growth had not been subjected to any operative procedures, it too might have yielded to the effects of the hypodermic trypsin treatment. This latter growth did not present at all the appearance of malignancy which was present in the case which was cured. I give this as my explanation for not examining the growth microscopically:

Before giving in detail the history of the case which I wish to present to you this evening, it will be well to call your attention very briefly to the views of Professor John Beard, who occupies the position of Lecturer in comparative embryology in the University of Edinburgh, and who was the first, I believe, to use the trypsin injections in the treatment of malignant growths. In my first paper I premised the report of my case with a brief sketch of Beard's embryological work—his views as to the causation of cancer, and its evolution from the embryological viewpoint. This was in the main prepared from his own announcement of his ideas in an abstract of a lecture on Cancer, delivered before the Anatomical Society, the members of the Medical Institution, and of the Biological Society of Liverpool, January 20, 1905, and entitled "Germ-Cells in Relation to Malignant Disease." In this announcement Beard states what he believes to be the nature of cancer, based upon his own researches, pursued for many years, as to the origin of the germ-cells. All this had led him to conclude that "cancer has ceased to be a problem for the embryologist."

I also referred briefly to his published and now well known experiments—the trypsin injection of mice, inoculated with the "Jensen-tumor" which resulted, as he believes, in the destruction and disappearance of the cancer, under conditions which led him to state so positively the belief that his solution of the embryological problem of cancer had also led to the development of a cure for cancer.

Perhaps this is not an opportune time to review at length the theories of Beard. There is ample literature accessible and his views have been published to the world. It, however, might be said that Beard denies the parasitic origin of cancer and insists that one advocate of this theory refutes another. He asserts his belief that "the nature of cancer as an irresponsible asexual generation or trophoblast, has been known for two and a half years." In the description of his own work upon the origin of "the germ-cells" he states that his researches have established beyond question that "these are preembryonic in origin, arising upon an asexual foundation or trophoblast, and that by the self-sacrifice of one an embryo is unfolded to contain and to nourish the other germ-cells for a certain brief span of time." In every case examined it has been found that a varying percentage of the germ-cells failed to reach the right place in the body, and these may be found in almost any organ or position. "At first sight it had seemed that any one of these might later on give rise to a tumor, benign or malignant, for they represent, and in fact are, the hypothetical 'lost germs' of the pathologists."

Beard believes that "prior to the appearance of an embryo or sexual form, there arises an asexual foundation, the trophoblast, upon which the germ-cells and the embryo come into being. In a normal case, at a certain definite period the embryo is able to suppress the asexual foundation and the latter slowly degenerates. If, however, the embryo is absent, or very abnormal, the trophoblast may and often does become a very malignant form of cancer. The two generations have different nutritions, a fact of extreme importance, and the 'digestion' of a cancer exactly resembles that of the trophoblast of normal development. The mammalian embryo solved the problem of cancer ages ago. The very existence of the embryo is conditioned by the suppression, the degeneration, and death of the asexual generation, upon which it has come into being."

Speaking again of the "critical period," when the change in nutrition invariably occurs, Beard states that "the true problem of cancer is simply that of the antithesis of two digestions, that is, of two enzymes or ferments." He further states that "at the critical period the embryo, complete in all its parts, begins to nourish itself by an alkaline pancreatic digestion and with a ferment known as trypsin. If this latter is wanting, the asexual generation, the trophoblast, may become a malignant tumor of the deadliest description; if present, it becomes harmless, and slowly degenerates. Clearly, then, since cancer is an irresponsible trophoblast, the ferment which brought about its degeneration in normal development, ought to possess potency when directed against the cells of a malignant tumor. It is important also to note that just as cancer may be found anywhere in the vertebrata and just as there is one mode, and one only of development for all the higher animals, so also the pancreas and its secretion are a common heritage of the higher animals. The whole story of cancer is but another example of that antithetic alternation which underlies all the phenomena of living things."

Whatever may be the outcome of what Beard calls the "medical aspect" of his theory as to the causation of cancer, his long continued researches as an embryologist, at least entitle his views to respect, and they are to be corroborated or disproved only by the work of specialists in this same department of science.

As a result of Beard's experiments upon two "Jensen" mice by the trypsin injection, he states that it appeared to him certain that "the action of trypsin upon the cancer-cell is to pull down albumin (a living substance) and that its action is direct and ruinous upon the trophoblast or asexual generation." He expressed very remarkable confidence both as to the results of these experiments and their significance. He further states that the destructive action of the cancerous cells is due to malignin, a fact which was discovered by Petry in 1899. Beard further states that Prof. Jensen, whose brilliant work has been thoroughly recognized in Great Britain, did not succeed though he tried many times to transfer cancerous material from man to the lower animals. He did, however, many times transfer cancer from one animal to another of the same allied species, and so produced the so-called "Jensen mouse tumor." This was first done four years ago. I am not familiar with all of Prof. Beard's writings, but Saleeby says that Prof. Beard has, by trypsin injections, cured two mice and several individuals of cancerous growths. The theory is that trypsin acts upon cancer by digesting the cells and then the other pancreatic enzymes dispose of these products of digestion.

As for the medical aspect of this subject, it suffices to say that the matter came to my attention, as it has to that of many practitioners, in a way and under circumstances which led me to give it consideration. I do not propose to discuss Beard's theories or express any criticism as to his experiments or their significance; it is sufficient to say that this treatment has come to our notice at a time when the whole subject of cancer is receiving the most acute attention. The practitioner of medicine, familiar as he is with the present status of the subject, must maintain an expectant attitude toward any therapeutic measures directed toward the mitigation or cure of cancer. This treatment of Beard's, which is by the hypodermic injection of pancreatic extract, trypsin, certainly causes constitutional reactions which are worthy of serious study. The hypodermic injection of organic extracts is not new. We know that, generally speaking, when properly prepared and sterile, they are nontoxic; but they must be prepared by the trained specialist and under scientific laboratory methods. The suggestion of the hypodermic use of a potent digestive secretion of the pancreas gland with its enzymes was met with a feeling of hesitancy because of the possible effect of the trypsin, in view of its well known powerful proteolytic action, notably on fibrin and albumins. I was assured, however, by Mr. Fairchild, that the results of both experimental and clinical work had already established the fact that trypsin itself exercises no digestive or destructive action upon the blood owing to the presence of an antitrypsin body. Furthermore, that the "injection" was obtained from the fresh gland under rigid aseptic methods; was a 60 per cent. glycerin extract, sterilized by filtration under pressure through a Berkefeld filter, and taken up in vacuum into glass ampoules and then immediately sealed. The injection I have used was supplied by Fairchild, under these circumstances.

The hypodermic solution which I used, "injectio trypsini," contains the trypsin enzyme in its natural association with the other gland constituents, notably the amylopsin. To this fact special importance is attached by Dr. Beard, and after some months of observation he has expressed very strongly his conviction that certain symptoms which follow the use of the injections are not due to any direct action of the trypsin or to that of any of the pancreatic enzymes, but rather to the result of the absorption of the products formed by the action of the trypsin upon the cancer-cell, and to the dispersion of these throughout the system. And he suggests the use of an amylopsin injection in conjunction with that of the trypsin.

It is of significance in this connection, that the toxic effects produced by the *x*-rays are likewise said to have been due to the occasional disappearance of the tumors under the influence of the rays, and to the absorption into the system of the broken-down tissue products.

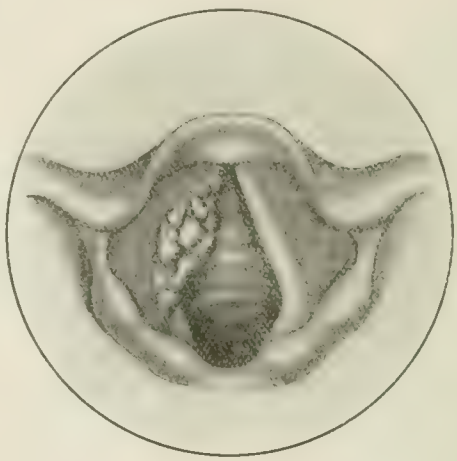
In accounting for certain symptoms which followed the use of the trypsin injections, we were strongly inclined to the view that they were due to the effect upon the system caused by the absorption of the tumor substance when it was attacked and disorganized by the "trypsin" injections. It should be remembered that this treatment has been employed for some months by numbers of practitioners in various parts of the world, and with results which in the main have been so far from negative that it is now, I learn, to be submitted to a thorough clinical trial by specialists, and at hospitals upon such a scale and by such a method as to conclusively prove its therapeutic properties.

I will now give the history of my case as it was presented to the American Laryngological Association. It is as follows:

George M., age seventy; father died of acute bowel trouble at the age of sixty; mother died of cancer of the breast at age of seventy-five. She had been operated upon two or three years before. There were twelve children in the family; nine died of consumption, ages twenty-seven to fifty. One was supposed to have died of cancer of the kidney, aged seventy-five.

Mr. M. had erysipelas forty years ago, which left a scar under the left eye. Six years ago he was sick in Paris for four weeks with an acute indigestion. He had had no other illness. Never had been a hard drinker or smoker.

The history of the present ailment is as follows: In December, 1905, he began to get hoarse. There was no pain about the throat or cough. He was treated by his family physician. We first saw him March 7, 1906. We found that his left vocal cord was covered or involved throughout three-fourths of its length anteriorly with a dry, hard, grayish enlargement, having a nodulated irregular surface, presenting a typical carcinomatous appearance.



The surface was dry and apparently not ulcerated. The injections were commenced at once, and repeated every second day. Five minims diluted with equal parts of water were injected under the skin of the abdomen each day for the first ten days. After that the dose was increased to 7½ minims every other day, which was employed for one week; later 10 minims every other day. Later seven and one-half minims every day and finally ten minims every day were used.

With these injections, holadin, which also is an extract of the pancreatic gland, was administered in three-grain capsules, one three times each day. The first effect of the trypsin injection that we noticed was a congestion and softening of the laryngeal growth. From gray it became red, from hard it became soft, and from dry it became moist. The posterior fourth of the growth sloughed away in small pieces, and had disappeared after two weeks' treatment. The surface of the vocal band from which the slough had disappeared was congested but smooth, and there was no appearance of regrowth. The remainder of the growth was at all times soft, and moist, and two or three pieces sloughed away, but when the patient went to Europe in the middle of May three-fourths of the length of the growth was still present. In elevation it had somewhat shrunken.

About a week before the treatment was stopped the hoarseness was suddenly increased, and we found that it was due to a marked congestion of the other vocal cord. Whether this was caused by an acute cold or by the effects of the medicines we could not tell.

We employed no other treatment. No doubt exists in our minds that the trypsin injections produced a very prompt and marked effect upon the growth. When the injections were given in the largest quantity, viz., ten minims every day, constitutional symptoms were produced. The patient complained of feeling generally ill, headache, slight nausea, pain through body, slight rise of temperature, never above 100. At such times the injections were omitted for one or two days, and all disagreeable symptoms disappeared. I should have said that the patient is in fine general health, quite as good as the average man of sixty. We felt that we could always trace a direct relation between the size of the dose of trypsin and the degree of the congestion of the growth.

One other symptom was noted, that is, a tendency to congestion about the lips, soft palate, and uvula. The congestion was followed by ecchymotic spots at these locations. We believe that they were undoubtedly caused by the trypsin injections.

We were very much encouraged for the first two or three weeks of the treatment, because, as we have said, one-quarter of the growth disappeared. During the latter part of the treatment there was but little improvement and the patient was so anxious to go to Europe that we finally consented.

The growth is entirely confined to the vocal band and shows no tendency to attack the sides of the larynx above. We only allowed him to use a cleansing spray. He is to be away for two months, and we hope to resume the treatment on his return.

This case seemed especially favorable for the trial of the pancreatic treatment because the growth is so localized; it had not been irritated by any form of local treatment, and the patient's general health is good. We have regretted that the patient's business has required him to talk a great deal. We feel that it could not have been merely a coincidence that the laryngeal growth commenced to soften and disintegrate in ten days or two weeks after the trypsin injections were commenced.

It will be noted that the patient has a marked inheritance in the way of cancerous growths. When the patient went to Europe in a half-cured condition, we gave him 100 of the holadin capsules, and he took these, three a day, until they were all completed. This was the only treatment that he received, except that he was given an ordinary cleansing spray. When he first came to us, his voice was very rough and hoarse, and it almost entirely ceased after three or four minutes' conversation. Since his return he tells me that his voice slowly improved during his ocean trip to Europe, but that it became much worse the first few days he was in Paris. He remained in Paris a week and traveled slowly during the following two months. During this time his voice gradually recovered and at present it is low pitched and somewhat roughened in quality; but he is able to transact his business without special vocal fatigue.

In the *Journal of the American Medical Association*, August 11, 1905, Prof. Beard in a short article on trypsin and amylopsin in malignant growths says that "this particular treatment has been in use for about six months and naturally it is still in the experimental phase of its existence." Further on Beard briefly outlines this method of treatment: "After a few preliminary injections of small amounts, that is, one-half ampoule of the injectio trypsini, the course should be: 1st—Injectio trypsini daily up to two ampoules for three or four weeks. 2nd—Then one ampoule of injectio trypsini on a certain day, followed by an ampoule of injectio amylopsini on the next day, and so on alternately for about four weeks. 3rd—Lastly, one or even two ampoules of the new injectio amylopsini daily for about four weeks, or longer, in the judgment of the physician.

"The injectio amylopsini, therefore, is meant to replace the injectio trypsini in the later periods of the treatment, and also even from the start to meet any bad symptoms, such as nausea, vomiting, pain in the back, drowsiness, albuminuria, high arterial tension, edema, etc. If any injections be still not well borne, the injections should be further diluted and given more frequently, but so that the total daily amount is not thereby diminished. It is easy enough to kill every cell of a cancer with injections of trypsin, but for its removal, and to prevent formation of poisonous products from its degeneration, injections of the diastatic ferment of the pancreas gland, amylopsin, are absolutely necessary." Beard thinks that the injections should be made into sound tissue as close to the growth as possible.

We consider it eminently proper to present these notes on the treatment of the case of supposed carcinoma of the left vocal band by pancreatic injection, the so-called trypsin treatment of Beard, for the reason that the results obtained left no ground for doubt that this treatment exerted a very prompt action upon the growth and was accompanied by certain well-marked local and constitutional symptoms. I am informed that there is a grave question as to the quality of the preparations which have been frequently employed in this treatment in London. We can readily believe that the slightest chemical change in, or the smallest degree of decomposition of the pancreatic extract would render them inert or inefficient and harmful. In this connection I can but express, as I know Dr. Beard has done, our debt to Mr. Fairchild as a specialist in the chemistry of the digestive ferments.

No fixed rule as to the exact method of treatment has been formulated. The quantity of injection which I employed, from seven to ten minims every day, is much less than that employed by Dr. Beard and others.

We have at the office treated four cases in all. Our successful case was the first one. Our second patient was a woman of sixty or more who was very near death when we first saw her. She had a cancerous growth involving the posterior wall of the larynx and the esophagus. She had been unable to swallow food for many weeks. It was a hopeless case from any standpoint, and although we gave the injections of trypsin no benefit resulted. The third case was the one already referred to, in which the growth, which seemed to be a simple fibroma, was removed by snare and forceps. After such removal the trypsin injections were used without benefit. The growth recurred and the entire larynx was removed. The fourth case we are treating now. This is probably an epitheliomatous growth attached to the lower pharynx on the right side which pushes the larynx and the epiglottis to the left. We thought for a time that we were getting marked benefit from the trypsin injections in this case, as the growth seemed smaller and softer and the swallowing was easier, but for the last two weeks there

seems to be no improvement. We are giving him a full ampoule every day. He is a poor man and has to come some distance to our office every day. He ought to be under better conditions in the way of eating and home living in order to give the treatment the best possible chance.

There may be one particular form of growth, and only one, which can be cured by the injections of trypsin, and it may be that the growth which we have seen removed is the particular type which can be controlled by pancreatic injections. What the exact quality of such a growth is, I do not know. All of these points must be ascertained by further study.

It is just as remarkable that the injection of trypsin will disintegrate one form of growth as another. In conclusion common sense would teach us that the earlier a case of cancerous growth is put under the trypsin treatment, the greater the chance of success. We feel, with Professor Beard, that the doses should quickly be made as large as the patient can judiciously bear. The unsatisfactory cases, so far as I have observed, have been those which have come under treatment in very advanced stages of the disease, consequently when the general health of the patient was very much undermined. We certainly are not giving the trypsin treatment of cancer a fair trial, unless we are conserving the general health of the patient by the best of care in the way of food, sanitary surroundings, and healthful living.

123 East Nineteenth Street.

TREATMENT OF PROSTATIC ENLARGEMENT.*

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My purpose in this paper is to discuss the subject broadly, to indicate, if possible, what leads up to prostatectomy and what away from it, to cite cases in illustration and avoid the technical details of the operation in its several modifications. These details have been discussed sufficiently, sometimes to the exclusion of the more important considerations. The subject should be the patient, not prostatectomy; our object should be to net him the best results, not alone to perform an operation seductive because of the skill required and radicalism implied. Perfection in technique does not justify an operation not indicated.

The first of the important considerations is: When shall surgical intervention be advised? The second, logically: Which is the operation of choice in the patient under treatment? As to the time for surgical intervention, three teachings are recognized: (1) Immediately upon the first retention; (2) as soon as catheter life has to be begun; (3) when catheter life fails. As to the operation of choice we have to consider, in the order of our preference, (1) perineal prostatectomy; (2) suprapubic prostatectomy; (3) prostatotomy by means of either a bistoury applied through a perineal incision or Bottini's galvanocautery incisor.

At the present stage of our knowledge it is not possible, in my opinion, to say categorically when surgical intervention should be advised. We need more detailed, descriptive, and searching statistics, especially as to end results, on both the conservative and the radical sides. The exclusive advocacy of one operation as the operation of choice, I beg to submit, is unwarranted and futile. The variations in the state, degree, and complications of the pathological condition to be relieved should preclude a fixedly preconceived operation of choice.

Recent statistics of significant value are contained in the comprehensive paper by Belfield in Vol. IV of "Progressive Medicine," December, 1905. Further condensed they would show that the English and French, the former especially, advise the suprapubic operation; that the Germans are almost evenly divided, the slight though important preponderance being, however, on the same side; that with us the apparent choice is the perineal; that the mortality abroad and at home practically agree at about 9 per cent. as to the perineal operation and at about 5 per cent. as to the suprapubic, making about 7 per cent. for all cases. This differs from Watson's statistics based on an exhaustive analysis of 2,627 cases variously operated by 100 different operators (*Annals of Surgery, June,* 1904). He gives the mortality in 530 cases of perineal prostatectomy as 6.2 per cent.; in 243 cases of suprapubic prostatectomy as 11.3 per cent.; in 1,086 cases of Bottini's operation as 6.3 per cent., and in 207 cases of catheterism at 7.7 per cent.

I would agree with Belfield in commending Whiteside's paper (*American Journal of Urology,* July and August, 1905), in which a timely protest is entered against excessive enthusiasm for operating and a just criticism is made of the lack of ante-operation details. In a group of 238 mixed cases, Whiteside finds "absolutely good results in only 30 per cent.," a mortality in perineal prostatectomy of 20 per cent. in 36 cases reported by nine operators, of 8 per cent. in Murphy's 51 cases, of 5 per cent. in Young's 75 cases, and of 3 per cent. in Goodfellow's 75 cases. He pointedly remarks that the average of these mortality figures is not much better than the 13 per cent. given as the mortality twelve years ago, and he rehearses the "untoward results" found among the 36 cases already cited. While commending both his protest and his criticism, I cannot agree with his comparison. A just comparison cannot be drawn except from the statistics of a longer series of cases furnished with ante-operation details and "end-results" by several operators of more nearly equal skill. Supporting my point is the fact that Freyer's mortality of 10 per cent. in 110 suprapubic prostatectomies falls to 5.8 per cent. if his first 25 operations are thrown out and the results of the remaining 85 alone are computed.

I would next comment upon Albarran's report, the conclusions in which are drawn from his study of the end-results in his cases of perineal prostatectomy, 44 of which were inspected a year after operation and 15 after from three to four and one-half years had elapsed. All but 7 are regarded by him as complete successes in that they totally empty the bladder. Of these 7 failures (4 partial and 3 complete) he remarks as noteworthy, that 5 had small prostates and incomplete retention. The total number of *small* prostates he subjected to prostatectomy was eleven. Five of these had an enlarged median lobe; its removal was followed by a perfect result. Six had no enlarged median lobe and netted only one perfect result. He calls the pathological state presented by these six cases, chronic hypertrophic prostatitis. He says that it sometimes eventuates in complete retention; but that the partial retention is not due so much to visible obstruction as to imperfect opening of the urethrovesical orifice.

It is pertinent to remark here that these are the

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cases in which prostatotomy by either the Bottini instrument or a bistoury is of service when any surgical intervention is indicated, and that, as Albarran says, they are rarely benefited, in fact are often made worse by prostatectomy.

Case I., incipient prostatic enlargement, illustrates the value of palliative treatment in postponing indefinitely the necessity for radical measures.

V. R., 51, married, always a hard manual worker and looking older than his given age, had suffered frequency of urination, slight hesitancy and initial pain for two years. These symptoms had developed gradually; it was two months before they had reached their climax. The frequency rose to an hour and a half, and the complete emptying of the bladder meant a teasing desire gradually relieved by the discharge of a small quantity of urine every fifteen minutes. That the quality of his urine had had something to do with his symptoms is evidenced by two facts: the occurrence of a general pruritus apparently of lithemic origin concomitant with his greatest frequency, and the slight, temporary improvement that had followed medication by his physician. Recently the frequency had been two hours. He had had no venereal disease. His sexual life, which began with his marriage at 26 years of age, had been normal, barring a moderate frequency in coitus during the first five years. Desire began to wane with the onset of the bladder symptoms and he had not cohabited in the past six months. Examination showed three ounces of residual urine and an enlargement of the prostate, the left lobe especially, as felt by rectum.

Under treatment that comprised irrigations with and instillations of silver nitrate solutions, and digital massage of the prostate, his frequency at once began to decrease and his residual urine to diminish. This improvement has been constant and progressive. Since the eighth week he has been able to hold his urine three hours comfortably and up to four hours when necessary; he has not had to urinate more than once a night—many nights not at all—and the residual, accurately measured, is two drachms. His urine has been and is of normal appearance; the urethral length is 8½ inches; the prostate is now about normal in size, but dense and hard, the left lobe especially. He declares he is comfortable and that his urination is steadily improving. It is probable that if he could modify his diet and improve his assimilation, a further reduction in his diurnal frequency would result.

Case II. illustrates a class, many of which, undoubtedly, have been hurried into an unwarranted operation. It raises the question whether it is good practice always to perform prostatectomy on the occurrence of the first retention. The case is typical and not rare.

V. Q. J., 63, single, had been in the habit of holding his urine for an hour or more overtime during the preceding two years. Apparently, however, he experienced no urinary symptoms until a recent vacation that exposed him to unexpected discomforts and coarse, poorly-cooked fare. Within a few days there developed frequency, some ardor, considerable tenesmus, and incontinence whenever recumbent, awake or asleep. The frequency was fifteen minutes day and night. The incontinence amounted to a few drops when he was awake; but to a large volume when asleep. Under medical treatment by his physician the symptoms persisted for a week, then began to abate gradually. When he was referred to me, seventeen days after the onset, the diurnal frequency was only an hour and a half, only slight ardor remained, and the tenesmus practically had ceased; but the nocturnal frequency had been entirely superseded by the incontinence, made worse by the large quantities of water he was drinking by advice.

He has always been a total abstainer from alcohol; he has not used tobacco in twelve years; he drinks coffee twice daily. There is a history of a venereal lesion fifteen years ago without sequelæ. His sexual life has been extremely negative.

Examination showed an overdistended bladder reaching to the umbilicus and obscuring the contour of the prostate by bulging downward toward the rectum. Out of respect for the patient's exhausted condition and timidity, instrumentation was not undertaken on this occasion, his first visit; but the daily allowance of water was reduced to physiological limits, his coffee was restricted, and his fluid diet was replaced by solids. He refused to remain in bed until it should become imperative, though the possibilities were told him.

Within forty-eight hours the ardor and incontinence had begun to lessen, and when he reported to me at the end of that interval he was able almost completely to control the diminishing overflow. He had urinated only three times during the night. Gradual relief of the overdistended bladder was now begun. That night he rose but twice and had no incontinence. It never recurred. The next morning, at my office, after he had voided four ounces as usual, four and a half ounces were drawn, emptying the bladder, thus establishing four and a half ounces as the initial residual. That night he urinated but once. Three nights later he began to sleep through without urinating, and at the end of a week, after he had been taught to urinate in "editions," the residual was found to be only two and a quarter ounces. Seven weeks later, when tested again, it was only one and a half ounces; his diurnal intervals were two hours long on occasions, but three hours long as a rule; there was no nocturnal urination and he had recovered his strength. Two weeks later when he reported, he could hold his urine four hours. This condition obtains to-day. The urethral length is 8¼ inches; the prostate, by rectum, is broad, flat, and moderately enlarged; the urine is sterile.

In other words, this patient had complete retention, overdistention, and incontinence, due to an acute congestion of his enlarged prostate, all of which disappeared under treatment, leaving him absolutely as well as before. Barring the first three weeks, he was not seriously incovenienced nor kept from business, and had the retention been recognized the moment the incontinence developed or earlier, this period of three weeks would have been significantly shortened. The very prompt return of power to his detrusor is noteworthy. This result gives me satisfaction, and, considering the patient's temperament, environment, and lack of vigor, I think the satisfaction justifiable. To have operated would, I believe, have exposed him to an unnecessary risk.

Case III. illustrates a phase of catheter life that leads to a change of advice.

V. L., 60, married, when referred to me three years ago, gave the following history. For the past seven years he had been passing a soft rubber catheter once daily and irrigating regularly. He had gone along very comfortably holding his urine as long as seven hours, suffering only off and on from attacks of prostatitis and exacerbations of his chronic cystitis. Ten days before his visit an unusually severe attack had developed with the usual symptoms—great frequency, some urgency, sharp tenesmus.

After a week he stopped passing his catheter on finding that the residual was only a very little instead of "the quart" he had been accustomed to draw. He had had urethritis thirty years before and syphilis "two or three times." His habits as to alcohol, tobacco, and coffee were good.

Examination showed a large man in fair general condition. He urinated a feeble, dribbling stream. A soft rubber catheter entered easily and found four ounces of residual urine. The prostate was large, full, boggy, and symmetrically ovoid, as felt by rectum; it presented considerable intravesical enlargement to the searcher. There was no calculus. The membranous urethra was narrowed to 25 F.

After five days of preparatory treatment, including gradual dilatation of the membranous urethra, cystoscopy became possible and was performed. It proved the absence of calculus and demonstrated a large median lobe with considerable enlargement of the left as compared with the right. He remained under observation and treatment eleven days longer, then disappeared, the attack and exacerbation having so far subsided as to make catheterism only twice daily sufficient. The dilatation of the membranous urethra had reached only 29 F. Prostatectomy was offered, but not urged; the man's average comfort more than outweighing the very infrequent and temporary discomforts.

He appeared a year ago complaining that all voluntary urination had ceased, necessitating catheterism four or five times every twenty-four hours, including once at night, and that for the past three months he had suffered from recurring attacks of epididymitis.

After five days of treatment under observation it was clear that catheter life in his own hands had come to an end. Perineal prostatectomy was performed, the intravesical outgrowth as estimated by searcher, cystoscope, and rectal touch not being so large as to demand the suprapubic operation, and a complicating calculus having been excluded.

The patient made an uneventful recovery aside from a slight febrile movement the first three days and a mild phlebitis later on in his long-standing varicose veins of the leg. The iodoform gauze packing was removed the first day; the tube at the end of forty-eight hours. He was up on the tenth day and left the hospital on the eighteenth. The perineal wound had closed permanently; but he suffered a slight incontinence whenever the bladder became full, on which occasions he voided from eight to nine ounces, leaving a proven residual of three ounces. There was no nocturnal urination. Six days later he passed a small, black, irregular calculus with yellowish incrustations—undoubtedly a prostatic calculus that had been forced from its follicle during the prostatectomy.

Under persistent after-treatment the chronic cystitis improved and the residual fell to one and a half ounces. It is now stationary at two ounces. The incontinence obliged him to wear a urinal for about two weeks and continued in varying but gradually decreasing degree, favorably affected by rest and massage of the prostate, unfavorably by exercise and any dilatation of the urethra beyond 20 F., until at the end of six months it ceased. A few drops escaping when his bladder is very full and he is fatigued is all that remains of it to-day. His urinary intervals have been normal since he left the hospital; very rarely has he had to urinate at night; his general condition and health are good; he has gained about 18 pounds. For a time his potency was as before the operation; but latterly it has shown a decline.

In view of the otherwise good result, it is to be regretted that the very last portions of the prostate were not removed. Had this been done he might have been permanently relieved of all residual urine and that, in all probability, without having increased or prolonged his temporary incontinence.

Case IV. brings out one of the indications for suprapubic prostatectomy and presents other interesting features.

I. E., 68, married, came under observation last June in a forlorn condition due to prolonged suffering and neglect. The salient points of his long history were, that, about three years ago (having been on catheter life), he had had galvanocautery prostatotomy performed through a perineal incision; that he had left the hospital unimproved, had visited many dispensaries without benefit, and that from time to time sudden attacks of retention had occurred which he had relieved by passing the soft rubber catheter he used regularly before the prostatotomy. His constant subjective symptoms were great frequency, some urgency, marked tenesmus, and exhaustion.

Very little study showed that the attacks of retention were mainly, if not wholly, due to spasm. Under test, the bladder capacity was about two ounces. The searcher promptly detected a calculus and suggested a second. When cystoscopy became possible it revealed a deep, median groove below the internal meatus; prominent lateral lobes bounding this groove; a phosphatic calculus lodged beyond the border of the right lobe and partly overhung by it, and a second calculus, apparently caught in a secondary groove above the level of the internal meatus.

Knowing that the true state of the prostate could not be determined until some time after the calculi had been removed, litholapaxy was undertaken. Much to my chagrin the calculi could not be dislodged; only their free portions could be seized and crushed. A suprapubic cystotomy was therefore subsequently performed. The actual enlargement of the prostate was much greater than suspected; it resembled a thick ring obliquely surrounding the internal meatus. The groove dividing the median lobe was not deep enough to completely drain the bladder. The remains of the calculi were removed, complete prostatectomy was performed, and drainage above and below established.

The patient's powers of resistance were so low that the suprapubic wound became badly infected as soon as the tubes had been removed, which was on the fourth day. The perineal tube therefore had to be reintroduced. It was not until eighteen days later that it became permissible to remove it permanently. Thus, unavoidably a perineal sinus resulted which persisted despite every attention on my part consistent with his daily work, leaking more or less continuously for four and a half months. He left the hospital on the thirty-fifth day with the suprapubic wound firmly healed. Incontinence, apparent as soon as the perineal tube had been removed, persists, obliging him to wear a urinal. As was the case with the leakage, the incontinence ceases when he lies down, sometimes when he sits down. There is no nocturnal urination. On rising in the morning he voids from six to eight ounces in a free, forcible stream. The urine is feebly acid; but contains an excess of mucus and a few flakes and small shreds.

Possibly the patient could have been classed among those who do better when a preliminary suprapubic cystotomy is performed to rest the bladder by drainage and allow the patient to recuperate

his vitality before undergoing the prostatectomy. He has, however, done well, all things considered. He has gained flesh and strength; he is now able to do a full day's work in the factory with fair comfort. Sexually, he is as negative as he was for some time before the operation.

Case V. illustrates the condition called "prostatism without enlargement," the treatment of which calls for considerable study.

F. K. M., 67, married, complained that for "several years" past he had had to urinate once during the night and for a year past had had diurnal frequency—from once every hour to once every three hours, depending upon the quantity of fluid ingested and upon the character of his immediate mental occupation. To these facts he voluntarily added that some form of urethral instrumentation, given him three times weekly for six months about a year before, when the diurnal frequency first developed, had been of no benefit; but that after three days of treatment in bed for a gastrointestinal disorder, the urination had returned almost to normal and had so remained for "several days." He had escaped the venereal diseases, though his sexual life began when he was seventeen years old. From the day of his marriage until he was 50 he had cohabited several times weekly, thereafter once weekly, and had practised withdrawal regularly until he was about 45. He was still vigorous sexually, and now cohabited normally with perfect satisfaction. He had been a total abstainer from alcohol and coffee for the past year and from tobacco for the past thirty years. Considering his partially sedentary life, he was overeating and was not drinking enough water between meals.

Examination showed a healthy, active man, vigorous alike in mind and body. His urine, voided in a good stream without the slightest abnormal sensation, showed uric acid and calcium oxalate crystals in abundance, thus confirming the suspicion that the quality of the urine might be a partial cause of his frequency. The residual urine amounted to one and a half ounces. The prostate, by rectum, was of the small, firm variety, indicating interstitial changes. It was slightly tender. The urethral length was 8 inches.

Under regulation of his diet and fluids, supplemented by local treatment, the residual soon fell to half an ounce and the urinary intervals lengthened to an average of two hours when at his desk, to somewhat longer when exercising, and to four hours when recreating. Coitus once weekly not only was allowed, but also advised, observation proving in his case that it added to his comfort by helping to relieve the prostatic congestion.

This patient has been under my observation nearly two years. During this period he has had three slight and two sharper exacerbations, the former marked by increased diurnal frequency, the latter by a nocturnal frequency as well, plus, on two occasions, the characteristic pains of prostatic hyperemia. Coincidently there was an increase in the residual urine; but it never reached the original ounce and a half. The average residual to-day is six drams. Retention has never even threatened. All five of the exacerbations followed definite errors in diet; two were accompanied by subacute rheumatism in certain joints; one was aggravated by an unsatisfactory coitus. Through all, the urine has kept its normal appearance. None of the exacerbations kept him from business. In the intervals the days have been few when he could not hold his urine five hours if necessity demanded, though more frequent urination was more comfortable. Though this degree of frequency is an interruption, it is not an interference in his case; therefore even so comparatively trifling an operation as dividing the prostatic bar with bistoury or the Bottini instrument in the hope of further improving his bladder function has not been advised. In my opinion he is as near normal as a man of 69 can expect to be, and by reasonable attention to his diet, habits, and mode of life, I believe he can always keep his "prostatism" under control.

Whereas Bottini's operation has failed of universal application, it nevertheless has a well-defined, though limited place in the surgery of the prostate. This should be more generally conceded than it is, as the end-results reported by competent observers are undeniable. Granting that surgical intervention is demanded in the given case, the indications for the Bottini operation are: Prostatic bars; Albarran's chronic hypertrophic prostatitis without median lobe enlargement of any extent (chronic contraction of the vesical neck); advanced carcinoma of the prostate (Willy Meyer); prostatic enlargement when positive contraindications to prostatectomy exist. The contraindications to prostatectomy are those of any major operation; but advanced kidney disease probably will become less of a contraindication than in other fields of surgery, in proportion as operators attend to the preparatory treatment for prostatectomy, and as the two-stage operation comes more into vogue in critical cases. Among the writers making special mention of these points is Albarran, who counts chronic overdistention of the bladder and systemic infection from the bladder contraindications to prostatectomy until those conditions shall have been first relieved by catheterism, irrigation, and, if necessary, by drainage. It is doubtful whether we can yet assure a patient that he will be both potent and virile after prostatectomy. More evidence is needed. The procreative power, therefore, when made an imperative requirement, will still be a contraindication to any radical treatment. Old age, taken alone, is no contraindication.

Taking the patients with the symptoms of prostatic enlargement as they have presented themselves to my observation, the foregoing cases being type-illustrations, it is my opinion that the teaching which advises surgical intervention as soon as catheter life fails, comes nearest to being correct. Even this cannot be accepted, however, without further definition and a clear understanding of its qualifications. Thus, catheter life may fail at once upon attempting to establish it, or not until it has progressed for years; the patient may be unwilling to enter upon it, and insist upon immediate radical measures; the patient's susceptibilities, his intelligence, and his dexterity are factors for or against trying catheter life. Who shall say that the intelligent, dexterous man, able to care for himself, or that the man of extreme sensibilities, able to have a trained attendant, will not live at least as long and as comfortably as to his bladder function as his less fortunate neighbor who had to submit to an early operation, which, though it has enabled him to urinate perhaps with comfort, has not necessarily freed him from all complications nor sequellæ? Attention may be called at this point to what is implied in Albarran's statement that perineal prostatectomy is preferred because of the lower mortality; but that suprapubic prostatectomy will become the operation of choice as soon as the technique shall have been perfected, its results being remarkable, because it is followed by "no permanent fistulæ, no cicatricial contractions about the neck, no injuries to the rectum, no loss of sexual power."

My paper is not a plea for catheter life as opposed

to prostatectomy, for bare conservatism as against bare radicalism. It is submitted as an argument for discriminate intervention as against indiscriminate operating; for finer distinctions in the field of indications, and for a rational application of all the known methods and means of treatment in such proportions as shall gain the maximum results for each individual patient suffering from the condition known by the generic term, prostatic enlargement.

20 East Forty-sixth Street

SOME MENTAL SYMPTOMS DUE TO DISEASE OF NASAL ACCESSORY SINUSES.*

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That acute or chronic disease of the nasal accessory sinuses frequently gives rise to serious forms of mental disturbance is very evident from the number of cases of melancholia and suicide which are reported as being due to grippe or influenza. A few cases noted in my own experience in which the mental symptom was sufficiently pronounced to deserve record, especially in chronic suppuration of the accessory sinuses, leads me to bring the subject before this society for discussion.

I shall report only one case in detail; in the others only the mental symptoms will be given with the pathological findings as result of operation. All of these cases gave every evidence of chronicity, having existed for a long time. All gave the prominent characteristic symptoms of suppuration and were submitted to the usual diagnostic tests. All were operated upon after the Killian method, of entering the frontal sinus, removing the floor of the sinus, or enlarging the infundibulum, as well as removing the middle turbinate and the anterior ethmoid cells, and as many of the posterior cells as could be found which gave evidence of being involved in the suppurative process. In two cases, in addition to invasion of the frontal and ethmoid, the sphenoid was involved; in eight other cases, the maxillary sinus was also involved in the suppurative process.

The case which I shall report presented unusual and interesting neurological symptoms, and was seen by Dr. G. P. Sprague in consultation. Dr. Sprague's notes are given in detail, followed by notes of my examination, as well as the operation which followed.

Case I. White, male, age 44, consulted me on account of pain over right eye. The left eye turned in; he had double vision when looking with both eyes; slight ptosis of left lid; pain over eye was worse at night and on arising in the morning and was aggravated by exercise or stooping over. Discharge of yellowish fluid from nose gave relief for several hours. The following are the notes of the examination taken by Dr. Sprague: "Patient examined August 3, 1906; he said that in November, 1904, having been in good health, he suddenly became deaf in the right ear, soon after which it seemed as though there was a lump the size of a man's fist in the right nasal region, in which all sounds accumulated, and became confused or lost. He had no other symptom until late in December, 1905, when he suddenly began to have a sharp pain—which has never since spontaneously ceased—over the entire right half of the brain; the worst pain being over the parietal protuberance. About six weeks after the pain began he suddenly began to see double and found that the left eye had an internal squint; both eyes have failed considerably, and the pain extends all over the right eyeball. With the beginning of the strabismus, the breath became vile, the tongue heavily coated, and there was a slimy taste, with lack of appreciation of the difference in the taste of foods. Upon examination, the skin of the entire right side of scalp and right side of face, exclusive of the external ear, and following a line near the insertion of the lower teeth to the middle line of the chin, is lacking in sensation, although not wholly anesthetic. The right pupil is enlarged and stellate; left pupil is smaller than right, and both react very slightly and slowly to both light and distance. Tongue is without tremor, but sharply deviates to the right. Knee jerks are normal; there is no ankle clonus. Shuffles in walking, and leans forward, with head extended. Right eyelid droops very little. Grip of both hands normal. Has no aphasia. His family physician says that his mind is more sluggish, that he is more religious than formerly, that he occasionally 'preaches' in a wild manner about himself, and that he talks differently than when well, and uses wrong words at times, unless he talks slowly. His digestion is good and his bowels regular."

My examination—ophthalmoscopic—is negative so far as fundus is concerned, except for slight swelling of edges of disk. Right pupil irregularly dilated; no evidence of iritis or synechia; media clear; vision 20/40 when looking with one eye, 20/50 when looking with both; lens do not improve vision. Hearing normal; no evidence of disease of drum head or middle ear. Examination right anterior nares shows a contracted and degenerated middle turbinate closely adhering to antral wall, completely occluding the middle meatus at its lower border; a thin yellowish discharge without odor oozes from upper part of middle meatus; when wiped off with cotton quickly returns on bending head downward. Left anterior nares normal. Post rhinoscopic examination showed right side blocked with bluish mass covered with yellow pus and mucus; left side was normal. Tenderness on percussion over right frontal sinus, more marked on deep pressure, especially under the orbital ridge and at the inner canthus.

Transillumination of the sinuses is negative, except the right frontal, which is decidedly positive. A diagnosis of disease of the frontal ethmoid and sphenoid sinus was made and an exploratory operation advised, which was consented to. Under local anesthesia, the right middle turbinate was separated from the antral wall and removed with scissors and snare; this was followed by flow of pus from ethmoid cells, which were found in a degenerating condition. The post nasal obstruction proved to be of tough tissue, resembling exteriorly a mulberry and was adherent to the anterior inferior wall of the sphenoidal sinus. This was with some difficulty removed with the cold wire snare and was larger than an average sized chestnut. After the removal of this mass, the sphenoid sinus could be easily entered with a probe, and found to be filled with soft granulations which were removed with the curette. This operation gave prompt and pronounced relief.

On the following day, August 5, the patient was etherized for the modified Killian operation. The posterior nares was tamponed to prevent blood from filling the pharynx, and an incision beginning below the median line of the base of the nose on the right side and extending to the supraorbital notch along the upper edge of the eyebrow and as deep

*Read at the thirty-second annual meeting of the Mississippi Valley Medical Association at Hot Springs, Ark., November 6-8, 1906.

as the frontal bone. The periosteum was carefully elevated and retracted and the sinus opened with chisel near the median line and above the orbital ridge, the opening was enlarged with rongeurs sufficiently to admit thorough inspection. The lining of the sinus was greatly thickened, was soft and edematous and of a dark blue color, and filled with dark serous fluid; the infundibulum was blocked by firm granulations. These were removed with curette; the ethmoid cells were probed and found to have undergone polypoid degeneration; the bony opening was extended down below the junction of the nasal bones, which gave free access to the anterior ethmoid cells. These were removed with curette. After removing all morbid material, the bone edge was beveled and the frontal sinus was lightly packed with selvage gauze extending down into the nose. The incision was closed with the exception of a small opening for drainage at the inferior angle. The packing was removed the second day, and the nose and sinus irrigated with warm saline and alphozone solution (1 to 2,000) twice daily. The stitches were removed the fourth day, and the entire wound closed by the ninth day. The patient was up and walking around the hospital on the fifth day after the operation. The pain did not cease completely after the operation, but was so much relieved that he expressed himself as feeling like a new man, and although he had acquired the morphine habit, having taken it twice daily for some weeks, was enabled to do without it after the first day. The nervous symptoms and religious boisterousness rapidly improved, and at this time are scarcely noticeable. His gait is steady, pupils normal; he does not see double though he says he is sensitive to bright light; there is little or no tendency to squint, but he still has a heavy feeling on the right side of his head. His conversation, facial expression and general condition is that of another man.

This case is one of the most unique in my series, and some of the symptoms I am unable to account for. There is no evidence of syphilis and his well-nourished condition does not suggest tubercular or intestinal trouble. He was on anti-syphilitic treatment for some months before being brought to me, and both the iodides and mercury pushed to the point of toleration, with only the result of increasing rather than diminishing the intensity of his symptoms.

In the series of cases which follow, only the prominent mental symptoms are given. Practically the same operation was done and the same results obtained, only the results were more marked and rapid. All were of the chronic suppurative variety.

Case II. Male, white, age sixty-nine. Disease of nose for thirty years. Last year or two intense and increasing mental depression, with fixed idea that his end is near and he will die suddenly. Operated June, 1904. Complete Killian operation on the frontal and ethmoid (both sides); offensive pus, granulations and necrotic bone removed. No syphilis or tuberculosis. Cured.

Case III. Male, white, age thirty-two. Disease of nose for five or six years. Last few months increased mental activity or excitability; insomnia and morbid suspicion of everything and everybody. Operated June, 1906. Right frontal, ethmoid and maxillary antrum contained pus and granulations; modified Killian operation and maxillary antrum opened through canine fossæ. Cured.

Case IV. Female, white, age twenty-one. Disease of nose for several years; for two weeks previous to operation, mind sluggish; indifferent to her condition or surroundings; responds slowly and hesitatingly to questions, but accurately. Operation March, 1905. Both frontal, ethmoid, and both maxillary antra full of offensive pus and granulations. Cured.

Case V. Male, white, age forty-two. Disease of nose for fourteen years; for some months troubled with insomnia and mental depression; feared he would take his life; had syphilis in youth. Operation January, 1905. Left frontal and ethmoid full of pus; no granulations. Cured.

Case VI. Male, white, age thirty-three. Syphilitic; disease of nose for four years; mentally depressed; indifferent to his whereabouts or surroundings; slovenly and immodest in his dress; whereas in his normal condition was a Chesterfield in his tastes. Operation June, 1904. Empyema of right frontal, ethmoid, and maxillary. Entirely relieved, but syphilitic deformity of nose rapidly followed operation.

Case VII. Female, white, age fifty-five. Great mental depression; desired to be left alone; this condition had existed for two months and growing worse; had so increased that she remained in bed for five weeks prior to consulting me, two weeks of which were spent in hospital under treatment for melancholia. Operation May, 1905. Frontal and ethmoid empyema. Cured.

Case VIII. Female, white, age forty-one. Disease of nose for seventeen years; morbid fear she would take her life; was in everybody's way; feared to be left alone. Operation August, 1904. Empyema right frontal, ethmoid, and maxillary. Entirely relieved except occasional migraine.

Case IX. Male, white, age thirty. Disease of nose for six or seven years; stupid from pain; sleeps a great deal; mind enough to do his work but felt sure he was losing his mind; would sometimes wander miles from home without a motive. Operation December, 1905. Empyema right frontal, ethmoid, and maxillary. Entirely cured ten weeks after operation but relief was immediate.

Case X. Male, white, age fifty-one. Disease of nose and throat for twenty years; had syphilis in youth; increasing mental depression with suicidal inclination (threats). Operation August, 1905. Empyema left frontal, ethmoid, and maxillary. Complete relief.

Case XI. Female, white, age thirty. Disease of the nose for eleven years; syphilitic; melancholia with suicidal inclination; asked to be locked up so she would not disgrace her family by killing herself. Operation May, 1905. Empyema left frontal, ethmoid, sphenoid, and maxillary. Complete relief.

The cause of the pronounced mental depression in the majority of my cases can better be explained by the neurologist and alienist, and we have as yet little data outside of the clinical history to base conclusions upon, owing to the fact that medical men do not attach more importance to the condition of the nasal cavities, either at the bedside or on the post-mortem table. When this is done, the association of disease of the accessory sinuses and cranial cavities will be more fully substantiated. "Whether the symptoms and conditions described are due to intracranial pressure, direct or indirect meningeal irritation, reflex nervous conditions, disturbed cerebral circulation, or toxemia, is not determined. But the fact remains that in these cases ventilation of the occluded sinuses or cure of the purulent process cured the psychosis; on the other hand, retention of pus aggravated the mental defect, or return of the purulent infection in the sinus was accompanied by return of psychosis." (W. Sohier Bryant).

The presence of pus or granulations in the sinuses is not necessary to produce marked toxic symptoms, with pain and mental depression. In some of my most aggravated cases, no pus was suspected and none found, but as soon as the obstructing middle turbinal was removed, the relief was immediate. "The etiology of this condition depends on the anatomic relation of the middle turbinates to the hiatus semilunaris and infundibulum. The air, in the frontal and anterior ethmoidal cells is imprisoned there by pressure of the middle turbinal against the lateral nasal wall, the turgescent tissues filling in the hiatus semilunaris and effectually blocking it. The lining membrane of the sinuses absorbs the oxygen in the imprisoned air and thus creates a vacuum. The absorption results in negative pressure and consequent swelling of the lining membrane with increased blood supply to this region. Stasis, to a greater or less degree, results; pressure of the congested tissues on the contained nerve endings, together with this stasis, produces the symptoms and results in reflex vasomotor disturbances in the circulation of the neighboring structures. This theory is advanced by Brawley, Robertson, Ewing, and Sluder, and seems to me to be worthy of acceptance.

The mental symptoms in the class of cases under consideration may be due to a meningitis of a passing type, namely a meningitis serosa (Amberg). The anatomical conditions favor the easy appearance of such a coaffection of the surrounding parts of the sphenoid, ethmoid, and frontal sinuses. Undoubtedly toxins developed by fermentation and putrefaction in the gastrointestinal tract—a faulty metabolism—and from the poison in the blood developing from acute affections (Stevenson).

These toxin-producing bacteria are probably the chief agents combined with the sepsis from pus absorption, the influence of which acts upon the cortical cells and nerve fibers of the brain. The proximity of the acessory sinuses to the brain is of signal importance if we can assume that an irritation of the brain, directly or indirectly, in predisposed or not predisposed cases, is caused by an affection which has its seat in the sinuses, the indications for interference is plain.

In conclusion it is worthy of note that in each case presented in this paper the ethmoid cells were extensively involved in the pathological process, and I do not now recall ever having seen a case of frontal or sphenoidal suppuration in which the ethmoid was not implicated. My observations almost force me to the conclusion that probably in the ethmoid or its "offshoot" the middle turbinate, is to be found the cause for the majority of cases of infection of the frontal, maxillary, and sphenoidal sinuses, and the statement made by me at this society in a paper on a similar subject in 1904, is repeated with greater emphasis at this time, viz., "the middle turbinal most frequently causes obstruction of the natural openings of the accessory sinuses and thus interferes with free drainage and ventilation, and the early removal of its anterior third decreases the necessity for more extensive and radical operations later."

Only the mental symptoms that were most conspicuous and gave rise to most anxiety are mentioned in this series of cases, but in these and in many other cases of chronic ethmoiditis I have noticed one or several of the group of symptoms associated with this disease mentioned by Beaman Douglas, the cause of which has not been explained. "It is evidenced by a slow deterioration of the mental faculties, an inferior quality of work, loss of memory, disability for continued application, overanxiety, general incapability, and procrastination."

In neurotic subjects and those with a lowered vitality from any cause, an ethmoidal, sphenoidal, or frontal sinus affection may start the vicious circle composed of the sinus affection proper and the neurasthenia or hysteric conditions which later we know, may reach a form and a degree which sometimes allows us to classify the bearer as one "bordering on insanity."

THE DIAGNOSTIC VALUE OF THE CYSTOSCOPE AND URETERAL CATHETER.*

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Lesions of no part of the body are, perhaps, more difficult of diagnosis than those of bladder, ureter, or kidney. For many years surgeons felt the need of some means whereby they might obtain more definite information concerning the actual state of affairs present in a given pathological urinary tract. From comparatively simple and crude beginnings there have been gradually evolved through the united efforts of many colaborers diagnostic instruments of scientific precision and accuracy.

The entire subject is of comparatively recent date. In 1874 Tuchman collected urine from one ureter by compressing the mouth of the other with a forceps introduced into the bladder. About this time Hegar proposed tying the ureter per vaginam for the same purpose. In 1875 Simon catheterized the ureter by the aid of a finger used as a guide, passed through the dilated urethra. General anesthesia was required, the after-effects were unpleasant, and the procedure was difficult. Pawlik, a Privat Docent in the clinic of Billroth, discovered in 1880 a method of introducing the catheter by the guide of external anatomical landmarks; this method is not easy and yet has some practical points to commend it. In this method the operator is guided largely by the sense of touch. Newman, Kelly, and Byford have worked along the same lines without adding anything to Pawlik's method. Later Brenner, Grunfield, and Kelly began to practise ureteral catheterization by aid of endoscopy, which rendered the orifices of the ureters visible. Kelly, in his dry method, dilates the urethra gradually then introduces a speculum with an obturator which, on withdrawal, allows the bladder to fill with air. Then, by the light thrown from a head mirror, the ureteral orifices are located by direct vision. Morris exposed the mouths of the ureters by the use of straight tubes with obturators.

In 1876 Nitze conceived the idea of a cystoscope, after much patient effort, in which he was joined by Hill, Fenwick, Thompson, Boisseau, Du Rocher, Caspar, Albarran, and others, and by Leiter, an instrument maker of Vienna, the cystoscope has been so perfected that it leaves but little to be desired.

Inasmuch as for obvious reasons a comparatively limited number of physicians will ever make use of the cystoscope and ureteral catheter, and as not all cases can be catheterized, there will always be a demand for some other means of obtaining the separate urines of the two kid-

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neys, Harris devised a segregator which acts on the principle of elevating the bladder wall by means of a bar passing into the vagina or rectum, as the case may be, so as to form a ridge or watershed between the orifices of the ureters, the urine being carried from the bladder by separate catheters. Luys invented an instrument consisting of two catheters, between whose tips is placed a curved metal part, which can be bent further if desired by a chain passing as the string to a bow on out to the handle. Over this curved piece of metal and chain is stretched a thin rubber cover. Guyon, in 1902, suggested a similar instrument, which was latterly perfected by Cathelin, one of his assistants. On the convex side of this instrument there is a spring covered by a thin rubber bag. This spring can be pushed out of a slit so as to form a septum which will fit accurately the posterior wall of almost any bladder. Fine catheters may be passed through the body of the instrument so as to come out on either side of the septum. This instrument is said to be fairly accurate and to cause no pain.

Neumann has a metal divider or separator which he places in the bladder that collects the two urines separately. Although the ureters usually open into the bladder three centimeters apart, many complications may arise to prevent accurate results. The ureters may not open into the bladder equidistant from the median line of the body. Urine may leak under the instrument. If the bladder should be at all sacculated this would be almost certain to happen.

Heusner has described a new urine separator based on the principle to which attention was called by Bier, that the flow of urine could be stopped by pressure on the ureter. The most effective point is the niche at the side of the fifth lumbar vertebra where the ureter passes over the hill formed by the iliacus muscle. The body is encircled by a sort of cylinder, and pressure is made over the ureter by a pad attached to a screw with a crank device; the center of each pad corresponds to a point two fingers' breadth above the umbilicus, their inner edge a finger's breadth from the median line. This device is said to control the flow perfectly. The uretercystoscope and catheter possess the advantages of almost absolute accuracy.

Quite a number of different cystoscopes are on the market; those of Nitze, Caspar, Albarran, and Brenner; Bierhoff, Young, Follen Cabot, and Tilden Brown have also made modifications of the original instrument. In the Brenner cystoscope the catheter emerges from the convex side, while in the instruments of Caspar, Albarran, and Nitze the catheter is situated on the upper or concave side. There are made operative, examining, photographic, and retrograde (for inspection of the prostate) cystoscopes. The instruments of Follen Cabot and Tilden Brown have attachments for irrigation of the bladder, while the apparatus with the catheters is *in situ*. This attachment, in cases in which the field of vision is continually being rendered opaque by blood or pus, is of great value. Some of these instruments give a direct view of a section of the bladder wall, while in others a part of the bladder mucosa is reflected on a prism, thence through the shaft of the instrument to the eye of the observer.

For the introduction and use of the cystoscope, local, and even general anesthesia will be necessary in some cases. The urine should be withdrawn and half an ounce of a 1 per cent. solution of cocaine or eucaine (which is less toxic and can be sterilized by boiling) is introduced into the bladder, a little of the same solution being left in the urethra as the catheter is withdrawn. To do successful cystoscopy the following conditions are a *sine qua non*: A urethra that will admit at least a 22 French sound, a bladder capable of containing from four to six ounces of clear fluid, or a solution that can be kept clear by the use of the irrigating cystoscope. A contracted bladder whose contents are continually being rendered opaque by an influx of blood or pus is a very unfavorable one for the use of the cystoscope; a week or more of preparatory treatment consisting of the administration of genitourinary antiseptics, bladder irrigation, and the passage of sounds. Not only will the urine be rendered aseptic, but the bladder and urethra will in some measure become habituated to instrumentation, and one will be enabled to judge of the amount of reaction that will be likely to follow the examination of bladder and ureters. The patient should be on a table, the buttocks projecting slightly over the edge, the thighs widely separated, the feet resting on chairs, or on a shelf provided for the purpose. If general anesthesia is used the patient should be placed in the lithotomy position; six to eight ounces of clear sterile solution usually produces sufficient dilatation for the purpose of a bladder examination.

With the obturator in place, the instrument is entered after the withdrawal of the obturator, the light is turned on, and the cystoscope is carefully held, so as to come in contact with no portion of the bladder mucosa or a burn resulting in ulceration may be produced. By raising or lowering the shaft of the instrument, revolving the beak from side to side, pushing forward or withdrawing the shaft of the instrument a little most of the bladder surface can be brought into view. By continuing these manipulations the orifice of a ureter can be brought into view and the catheter directed into it. To bring the left ureter into view, the ocular end of the cystoscope is swung to the right, and vice versa.

The beginner must naturally first make a study of the normal bladder. The mucosa has a normal yellow color. The surface vessels have an arborescent appearance. The surface of the bladder wall is distinctly but slightly trabeculated. When an air bubble has entered the bladder it presents a round, shining surface, from which the cystoscopic lamp is reflected. The protrusion of mucous membrane at times seen about the ureteral orifice may be mistaken for a tumor. When the bladder is not sufficiently injected the rugæ may be thought to be papillomata. The base of the bladder and the trigonum suggest a sandy shore in appearance. At the posterior angles of the trigonum are the mouths of the ureters, each appearing as a slit or depression placed in a little ridge of the mucous membrane.

The cystoscope is of undoubted value in the diagnosis of diverticuli, calculi, foreign bodies, *e.g.* a silk ligature in the process of extrusion from the bladder wall, simple ulcer, tuberculous ulcer, papilloma, malignant growths, polyps, fibromata, in fact all new growths. In cases of pyelitis, pus can often be seen escaping from the ureter. The appearance of the ureteral orifice is often characteristic in inflammatory conditions of

the renal pelvis. The extent and character of a cystitis can easily be determined.

Blood deposited on the normal bladder mucosa simulates a severe subacute or chronic cystitis. In the acute or chronically inflamed bladder the rugæ resemble papillomata, especially if the inflammation is localized. Some forms of chronic cystitis produce an even rectangular quilting of the bladder with projections between the seams of swollen mucous membrane. Acute and chronic cystitis causes the mucous membrane to vary in color from deep red to yellow, according to the stage and degree of the inflammation. Naturally, the correct interpretation of pigmentation, exfoliation, and color variation must be based on a thorough familiarity with the appearance of the normal bladder.

Tuberculous cystitis has some features that make its diagnosis at times difficult, and even impossible. The lesions are sometimes associated with growths of a papillomatous character. When sharply-defined ulcers develop in the absence of either acute or chronic cystitis, the diagnosis should be easy, though this condition in its early stages may be thought to be solitary simple ulcer. When thickening and infiltration is general and associated with the papillary growths mentioned above, diagnosis may be difficult. Bladder tubercle when about to break down shows itself in the shape of small, white caseous spots. In advanced tuberculous ulceration the bladder is apt to appear mottled, by reason of the alternating anemic and hyperemic areas. One ulcer may be ragged and red in outline or covered with blood clot; another may have on its surface a dirty gray slough and have undermined edges. In far-advanced bladder disease this organ becomes so irritable and contracted that the cystoscope cannot be used.

Simple ulcer usually presents a pale yellow slough, contrasting vividly with the red of the mucous membrane. Sessile growths and polyps are easily diagnosed by their appearance. Many papillomatous growths bleed easily and should not be touched during examination if possible to avoid it. Hemorrhage beneath the mucous membrane produces a yellow, projecting tumor resembling a papilloma. Malignant new growths of the bladder as a rule do not possess any very characteristic appearances.

The appearance of the orifices of the ureters is often corroborative or suggestive of certain renal or ureteral conditions, according to David Newman. When one orifice is altered and the other normal the kidney affected is on the side of the abnormal ureter. Congestion and swelling of the mucous membrane in the neighborhood of the orifice and along the ureter associated with pouting of the lips denotes acute irritation of the pelvis or parenchyma of the corresponding kidney. A dilated orifice, thickened lips with dark red mucous membrane between them, indicates descending ureteritis with dilatation. A punched-out orifice, thickened lips, induration, and congestion of the surrounding mucous membrane indicate a dilated ureter with ascending ureteritis. Simple dilatation of the mouth with local congestion suggests mechanical irritation of recent origin. A pinhead opening on a ridge of deeply pigmented mucous membrane denotes induration of the ureter walls from ureteritis. The vascular orifice denotes increased vascularity of the kidney. The golf-hole opening indicates atonic dilatation of the ureter. A calculus arrested near the mouth of the ureter produces edema of the orifice.

Much can be observed by a study of the shoots or the urinary afflux from the ureteral orifices. These shoots may be accentuated by giving methylene blue by the mouth or indigo carmine by hypodermic. When the urine shoots in distinct jets, but more frequently on one side than the other, greater functional activity is indicated when the shoots are large and uniform in size. If they are small in size, frequent or irregular irritation may be inferred. Stricture, stone, or inflammatory troubles are to be suspected when the shoots are irregular or distorted in form. The action of certain drugs, the drinking of fluids, excitement, etc., may cause a very rapid flow of urine. Dilatation of the ureter without paralysis of the sphincter is denoted when the urine dribbles into the bladder at intervals. When the sphincter has lost its efficiency the urine flows into the bladder almost continuously. When no urine is being secreted no shoots will be seen even after several examinations. The orifice of the ureter may be undiscoverable. The urinary shoots consist of blood-stained urine in acute inflammation of the parenchyma of the kidney, in breaking down carcinoma and sarcoma of the pelvis, in injuries of the kidney, in ulceration of the pelvis, in malignant disease, and in syphilis; occasionally slight bleeding is seen in stone, in early tuberculous disease, and in chronic interstitial nephritis.

The flow of urine from the ureter is pus stained; in septic pyelitis and pyonephrosis, when the kidney is still active, the urine will be ejected at regular intervals. In tuberculous pyelitis the pus is not intimately mixed with the urine and many of the shoots will be clear; most of the pus passed will be in the shape of flakes. In old-standing pyonephrosis, in advanced tuberculous, syphilitic, or malignant disease, the secretion of urine will have practically stopped and pus, blood, or bands of puttylike material may come from the ureters.

About the most easily discovered morbid object in the bladder is a stone lying on its floor; this stone may be covered with mucus or be in such a position that it cannot be reached with a sound. At times a calculus will float in the urine content of the bladder. The stone may be lying behind the prostate and may be brought into view by placing the patient in the knee-elbow position.

Ureteral catheters can best be sterilized by suspension in a rack in a container over formaldehyde solution. Just prior to its introduction into the bladder by way of the cystoscope the catheter should be lubricated with glycerin or oil. As a precaution against a possible introduction of infection into the ureter and renal pelvis, some irrigate through the catheter with a small amount of dilute silver-nitrate solution. In introducing the catheter one should be careful not to touch the bladder wall with its tip.

The ureteral catheter is of especial value in determining in a given case which of two kidneys is involved. Strictures of the ureter may be located, dilated, and treated, and some mild cases of hydronephrosis may be cured by this means. Stone in the pelvis of the kidney has been detected a number of times by the use of the wax-tipped

bougie. Inasmuch as the introduction of the ureteral catheter often causes some bleeding, it is well, especially in uncertain cases, to leave it *in situ* for some time. In addition to its value as a diagnostic instrument, the catheter is useful for the purpose of lavage of the renal pelvis and as a guide and protection to the ureters in certain cases of pelvic surgery.

The cystoscope and ureteral catheter should be, as a rule, used in cases in which a positive diagnosis cannot be made by other means. In the introduction of the instrument into the bladder, with the possible traumatisms incident thereto, a certain risk of infection is incurred. In the same way there are chances of ascending infection of the ureter and possible kidney involvement from the use of the ureteral catheter. A few cases of contracted bladder and certain cases in which the hematuria or pyuria is excessive cannot be satisfactorily cystoscoped. In cases of stricture so large an instrument cannot be passed. At times it is impossible to catheterize the ureters. Time, patience, expensive apparatus, excellent eyesight, extensive experience, and skill are prerequisites to the accomplishment of results from this sort of work. Some patients cannot tolerate this procedure even by aid of a local anesthetic.

In a considerable number of otherwise obscure cases I believe the cystoscope and ureteral catheter to be of much value, and that they fill a want in our armamentarium of diagnosis that nothing else will.

My conclusions are that the cystoscope as an accurate scientific instrument is of comparatively recent inception and perfection; that the other mechanical aids to the collection of the separate urines are not by any means absolutely dependable; that the cystoscope and ureteral catheter have their limitations, shortcomings, and defects, and are not ideal; that these appliances are of especial value in diagnosing the causes of hematuria, in the discovery of calculi and foreign bodies in the bladder; that a careful study of the ureteral orifices gives more than an inkling of the conditions present in ureter and kidney. Definite information concerning the origin of a pyuria can be elicited by the use of the cystoscope and ureteral catheter which could not have been obtained in any other way.

The Origin and Structure of Moles.—Dr. Wilfred S. Fox has made a study of moles, and in a subsequent paper will discuss their relation to malignancy. He considers that the tendency of research into the origin of cancer has been toward abandoning the infective hypothesis. Moles are of two general classes: smooth or abnormal pigmentations, and verrucose with hypertrophy. He makes the following groups: Vascular nevi, dermoid cysts, hard nevi, soft nevi, (or moles as generally understood), giant nevi, linear nevi, and mullusciform nevi. His paper deals chiefly with the commoner forms of hard and soft nevi. He finds that though congenital in their origin, moles are seldom actually present at birth, but develop during the first year or may be delayed till puberty. Von Recklinghausen's and Unna's views as to origin are discussed. The conclusions drawn from a series of cases examined and from the evidence given by histological workers are that the cells of soft moles which show the typical columnar formation in the corium are epidermal in origin, but that there does appear to exist a more rare variety of soft mole, which resembles clinically the above, but whose cells are in all probability derived from the mesoblast.—*British Journal of Dermatology.*

Recurrent Luxations of the Patella.—According to Dupic, in cases in which the first dislocation has been spontaneous or caused by trauma this accident may be brought about afterward by merely an energetic contraction of the quadriceps extensor femoris. This dislocation, which occurs more commonly than is generally thought, is found most often in young subjects from twelve to twenty years old. Two-thirds of the cases are girls and women. The dislocation occurs nearly always on the external side, and is of two principal varieties, being complete or incomplete, according to the degree of the displacement. As a predisposing cause there generally exists an affection which distends the ligaments, such as hydrarthrosis, a bony deformity, or a slight degree of genu valgum. In such conditions a violent muscular contraction, when the leg is half flexed, is sufficient to bring about the displacement. The prognosis of these dislocations is always serious and depends upon the number and location of the recurrences. The number of recurrences is extremely variable. In some cases they take place several times a day and even oftener. The degree of the dislocation is equally important. Sometimes it is so slight that the function of the part is hardly disturbed. In other cases the dislocation is complete, with absolute functional impotence. Reduction is generally easy. Immobilization should be enforced for about eight days, after which massage and electricity are indicated. However, when recurrent dislocation becomes chronic surgical intervention is indicated.—*Gazette Médicale de Strasbourg.*

Acute Intoxication by Mercury.—Barthe and Ch. Mongour record certain observations which they have made. There are three distinct phases in cases of this kind, the initial period being separated from the terminal by an absolute cessation of symptoms in certain instances. The first period begins soon after the ingestion of the poison. It is characterized by bilious vomiting, followed by hemorrhagic fluid. A painful sensation of burning in the retrosternal and epigastric regions is very troublesome. In the hours which follow, salivation develops, with lesions of mercurial stomatitis. There is also fetid diarrhea, the dejecta being bloody and stringy. This period lasts from two to five days. As to the condition of the blood, the leucocytes, according to their power of resistance, tolerate a mercurial infiltration for a period more or less long. When the lesions of the digestive tract begin to heal, this tolerance still exists and the patient appears to be entering upon convalescence. But the mercury later disorganizes the white cell, which then allows the poison to diffuse itself throughout the entire organism. The general symptoms of the third period then develop. Although the white cells do not play an exclusive rôle in the defense of the organism, they are the most important factor. This whole subject is of medicolegal interest.—*Journal de Médecine de Bordeaux.*

A Benign Tumor Developed on the Interior Surface of the Labium Minor.—Gaignerot reports this case. The size of the tumor corresponded to that of a mandarin. It was elastic, of unequal consistence, and had on its surface a series of nodosities of woody hardness and of the size of small peas. At the time of its extirpation its color was a pinkish yellow. On section this tumor was seen to consist entirely of small granules like those that covered its surface, hard and yellow. These granules were connected by a gristly tissue, slightly translucent. Microscopically this growth was found to be a fibroma, with lipomatous patches here and there. The tumor was interesting on account of its location. The patient was fifty-four years old and entered the hospital for the treatment of an umbilical hernia. It was by chance only that the tumor was mentioned. She had noticed a small swelling at the age of seventeen years. This growth had increased in size up to the present time.—*Journal de Médecine de Bordeaux.*

MEDICAL RECORD.

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THE ARMY MEDICAL DEPARTMENT.

THE report of the Surgeon-General of the Army for the year ending June 30, 1906, recently issued, shows a gratifying increase in the health of the troops and in the sanitary conditions in the various posts. The mean enlisted strength of the Army, excluding native troops in the island possessions, as reported in the monthly sick reports of the Medical Department, was 56,901, and on returns to the Military Secretary's office, 58,556, the difference representing those temporarily absent from a command. The total number of admissions to sick report was 73,742, an admission rate of 1,295.97. This rate was 1,354.89 for the previous year, and 1,903.31 for the sexennial period 1898 to 1903. As in many diseases, the same man may be admitted several times, the total number of admissions is, of course, greater than the actual number of cases. The death rate was 6.28 per thousand, compared with 6.75 for the previous year and 16 for the sexennial period 1898 to 1903. As usual, venereal diseases were the most important affecting the efficiency of the Army, and next to these came malaria. Then followed diarrheal diseases, but in these there was a most decided improvement, the admission and noneffective rates being 84.67 and 2.87 respectively, compared with 108.36 and 3.87 for the previous year. Alcoholism was next in order, and in this, thanks to the continued prohibition of the canteen, there was an increase in the admission, death, and noneffective rates compared with last year.

The average enlisted strength of the troops serving in the United States was 42,834. Among these the admission and death rates were 1,305.83 and 6.44 respectively; these were lower than for the previous year, but slightly higher than for 1903. Venereal diseases led the list as causes of admission, and following these in order were bronchitis, diarrhea, malaria, and influenza. A study of the causes of death shows that over 42 per cent. were due to external causes, and of these 23 per cent. were suicidal and 20 per cent. due to drowning. Among the causes of death from disease, tuberculosis led, with a rate of 0.86, as against 0.68 for 1904; pneumonia, typhoid fever, alcoholism, and appendicitis were next most potent as causes of death. There was a most remarkable and gratifying diminution in the number of admission for typhoid fever during the year, the total number having been 153 and the rate 3.57, as against 247 and 5.62 for 1904; the death ratio, however, was a little higher than for 1904, 0.30 and 0.27 respectively. There was an improvement in the ratios for malarial diseases.

General O'Reilly adds his testimony to that of the other officers of the Army regarding the havoc to health and morals wrought by the refusal of Congress to restore the canteen feature of the post exchanges. In discussing alcoholism, the admission rate for which increased from 25.42 in 1904 to 30.22 in 1905, he says: "Many medical officers consider that the abolition of the sale of beer in post exchanges has had much to do with the increase in alcoholism and venereal disease, by driving the soldiers to disreputable resorts outside of the post and beyond the control of the post authorities. In that opinion this office concurs." It is strange that the good ladies of the W. C. T. U. and other advocates of compulsory temperance, so called, cannot see that true temperance in the Army would be promoted by restoring the canteen privileges. If soldiers could spend their evenings in innocent games over a couple of glasses of beer at the post exchanges, all, except the most vicious and the confirmed dipsomaniacs, would be content, and sobriety, a very different thing from total abstinence, would be promoted. The men resent this motherly restraint, and improve their leave by spending it in the many dives which have sprung up immediately outside the posts since the canteen was abolished. There they drink spirits instead of beer, and, when inflamed with alcohol, consort with the vicious and diseased women attached to the dives. It is a pity the President has not the authority to order the restoration of the canteen feature of the post exchanges, as he apparently had to order the deformed spelling which disfigures this otherwise interesting report of the Surgeon-General. He would assuredly do so if he could.

The bill to increase the efficiency of the Medical Department of the Army, which was passed by the Senate in the former Congress, but failed to come to a vote in the House, was introduced in the present Congress, and passed the Senate in the spring of 1906. It was favorably reported by the Committee on Military Affairs in the House about the same time, but did not come to a vote in the first session. It is to be hoped that this vote will be reached early in the second session. "The need of an increase in the Medical Corps," General O'Reilly says, "is evidenced by the fact that there were on June 30, 1906, 166 civilian physicians employed under contract. The need of increasing the attractiveness of the service is shown by the fact that during the year no progress has been made in filling the nineteen vacancies now existing, the number of accepted candidates commissioned being exactly equaled by the losses occurring during the year. It is impossible for the Medical Department to reach a high degree of efficiency or to escape a lamentable breakdown on the occurrence of war if Congress does not come to its relief. Nor can this relief be postponed until war is imminent, for the selection and training of medical officers is a gradual process which requires years of time, and an efficient medical corps can no more be created out of hand than a tree can be made to grow in a night."

The strength of the Hospital Corps on June 30, 1906, was 3,196, a gain of 136 during the year. The number of female nurses was 97, employed at the Presidio, San Francisco, Fort Bayard, and vari-

ous posts in the Philippines. Some embarrassment in recruiting this corps has been caused by the greater inducements offered by the Isthmian Canal Commission, so that now there is the smallest eligible list from which appointments can be made to the Corps since its organization. Recommendations for similar provisions for Army nurses have been made, and as time goes on, the Surgeon-General says, the wisdom and necessity for such become increasingly evident.

In accordance with the recommendations made by the Surgeon-General last year, the Secretary of War, on October 21, ordered the establishment at the United States Military Academy, West Point, of a Department of Military Hygiene, with the senior medical officer at the academy as the head of the department and a member of the academic board. This is a great step forward, and will no doubt have a very decided effect in advancing the cause of sanitation in the Army. The line officer, having been instructed in the elements of hygiene, and as a result of this having been made to appreciate the value of sanitary measures in maintaining the effectiveness of the troops, will be less inclined to regard such measures as foolish and unnecessary, and to oppose obstacles to the efforts made by the medical officers to enforce them. Another recommendation made in the report of last year has been adopted, and a permanent board for the study of tropical diseases in the Philippines has been detailed, Assistant Surgeons Ashburn and Craig constituting this board.

Experiments have been made during the year with the so-called "galloping ambulance," a British invention, two of which have been purchased for the department. This vehicle is intended for rapid ambulance service with mounted troops, and the results obtained with it so far have been very satisfactory. A motor ambulance has also been under trial, and the Surgeon-General is convinced, as a result of this trial, that some type of that class of vehicle will form a necessary part of ambulance equipment for both post and field.

General O'Reilly renews his recommendations of last year in regard to the systematic physical training of all soldiers, and strongly urges that the proper steps be taken to carry into effect those recommendations. "Commencing with a gymnastic course to develop gradually the weak points in each soldier and give him agility, strength, and the control of his muscles, the course would go on through outdoor athletics to military gymnastics or gymnastics applied to overcoming the obstacles which the soldier is likely to meet with in warfare."

The report presents a number of other interesting facts regarding the Army Medical Museum, the library of the Surgeon-General's office, the Army Medical School, the work of the Medical Corps in the Philippines, the Army hospitals, etc., and bears witness to the great achievements of the Surgeon-General and his most efficient aids in the Medical Corps against the odds of the indifference of Congress and the unreasoning prejudice of some officers in other branches of the service. The medical profession of the country has very good reason to be more than satisfied with its representation in the United States Army.

INTESTINAL DISINFECTION.

In the treatment of many conditions in which an infection of the intestinal tract with pathogenic bacteria constitutes one of the features of the disease, the endeavor has been to bring about a more or less aseptic condition of this portion of the alimentary canal by the administration of certain drugs, astringent or antiseptic in character. Considerable doubt, however, has been expressed as to their value, particularly as to the degree of their disinfectant properties. If their action is germicidal, then, it has been suggested, this effect is also manifested against the normal bacterial flora of the intestine, which, as is well known, is essential to the proper conduct of the intestinal economy. In addition to this, it has been claimed that an unimpeded growth of these bacteria forms one of the most important means by which the pathogenic invaders are destroyed and eliminated. Intestinal antiseptics, therefore, apparently work in opposition to the natural defensive efforts of the organism, the development and preservation of which it should be our aim to encourage.

This subject was discussed at the recent Congress of German Naturalists and Physicians in Stuttgart, at which some interesting suggestions were brought forward in a paper by Moro (*Münchener medizinische Wochenschrift,* October 9, 1906). He held that the ideal way of combating intestinal infection would be by the introduction into the canal of the normal bacteria or by providing conditions in the intestine suitable to the further development of the harmless bacteria already present. The oral administration of bacterial cultures must be ruled out for various reasons, but in place of this the speaker suggested, in the presence of infectious process in the large intestine, the rectal injection of the proper organisms. Thus the colon bacillus, which is said to inhibit the growth of the organisms both of typhoid fever and of dysentery, might be given per enema in fluid agar cultures. A less radical method would provide for the maintenance of conditions favorable to the growth of the bacterial flora already present in the gut, and this end might be attained by appropriate feeding rather than by drugs. Moro found, for example, that *Bacillus bifidus,* a nonpathogenic organism present in the intestine, grows with surprising rapidity when human milk is administered and soon appropriates the field to itself, the other bacteria being repressed. The discovery in its present shape is not likely to have any immediate application, for it would hardly be feasible to supplant the trained nurse by a wet nurse in a case of typhoid fever in the adult, but it may be possible to discover the element in human milk which favors the growth of this organism and so to turn the discovery, if discovery it is, to practical account.

It would be worth while to follow up this lead for a time to see if it is really of value, for the successful control of intestinal infections still constitutes one of the leading problems of medicine. Intestinal antiseptics, although introduced in great variety, have not been generally successful, and this failure has led to the introduction of the serum treatment in certain forms of dysentery and in typhoid fever; but though encouraging results have

been obtained, the therapeutics of intestinal infections still lacks much before it can be placed on a firm and practical basis.

PROSTATECTOMY IN TWO STAGES.

Among surgical procedures in general there is none attended with more hazard, comparatively speaking, than the removal of the prostate gland under certain conditions. Although the percentage of mortality has been greatly reduced within recent years by improvements in the technique of the operation, there are factors which prove an almost unsurmountable barrier to a successful outcome. Among the most noteworthy are the age and generally reduced vitality of the patient added in most cases to an impaired condition of the kidneys and other internal organs. The kidneys bear such an important relation to the immediate recovery and future prognosis in every patient that any damage which they may have previously sustained will probably be seriously aggravated by the additional strain imposed by an operation of this character. Hemorrhage, shock, urinary suppression, and general toxemia may be summed up as the main difficulties consequent upon a prostatectomy, and the mortality rate will be found to bear a more or less definite relation to the existence of these features in any given case.

A complete and radical removal of the gland, particularly in cases in which an emergency exists, necessarily increases the hazard. In order to improve the patient's chances, C. H. Chetwood, writing in the *Annals of Surgery* for October, 1906, suggests that the operation under such circumstances be done in two stages. He reports a series of eight cases of a severe type and threatening in character, in which death would almost infallibly have followed a radical primary operation. The ages of the patients varied from sixty-five to eighty years, and all could be classified as poor surgical risks. After preliminary drainage a complete radical removal of the prostate was done in each case with excellent results, the former giving the patient immediate relief from his symptoms and an opportunity to gain in strength as a preliminary to the second operation.

The writer lays great stress on the control of the hemorrhage during the operation and has had excellent results with formaldehyde gelatin as a local hemostatic. The postoperative conditions are thus greatly improved and the drainage is more perfect than in cases in which the tube is constantly clogged by blood clots. It is also claimed that the secondary operation can be more readily carried out because the congested tissues no longer obscure the field and the necessary procedures can be more quickly done, with a consequent reduction in the amount of hemorrhage and shock. Postoperative toxemia is also eliminated, as the patient has had an opportunity during the preliminary period of drainage to fortify his normal resisting powers. The suggestion contained in Dr. Chetwood's paper is timely and sensible, and, although its value has been tested in only a small number of cases, there seems to be no good reason why it should not give equally good results in the hands of other operators.

EARLY OPERATION IN TRAUMATIC INTRACRANIAL HEMORRHAGE.

Very little doubt exists in the minds of surgeons as to the necessity of early operative interference in the presence of hemorrhage from the intracranial blood-vessels, and yet the diagnosis of the condition presents so many difficulties that many sufferers are not afforded this source of possible relief. The percentage of recoveries from expectant treatment is very small, and it is a matter of experience, as shown by autopsy results, that early resort to trephining would have been followed by success in many a fatal case. The absence of focal symptoms, even when the evidences of general and increasing cerebral compression are present, is considered by some surgeons sufficient reason for desisting from operation, because no definite information is afforded where the trephine should be applied. In most instances, however, a definite history of trauma may be obtained, and a careful examination of the scalp will reveal a contusion or abrasion as the desired guide. A good deal of uncertainty also exists regarding the condition known as cerebral concussion, which, it should be remembered, is transient in character. Many so-called cases of concussion are in reality cases of compression, and an earlier recognition of the true condition would result in operation while there is still a chance for relief.

A timely article by F. W. Murray, appearing in the *Annals of Surgery* for September, 1906, is one of the latest contributions to this subject. In this early operation is advocated, although the writer does not go to the extent of advising an exploratory operation in every doubtful case, as some extremists would do. The necessity of operating in hemorrhage from the middle meningeal artery is evident, but as regards the propriety of similar treatment in cases of subdural hemorrhage there is still some difference of opinion. As Murray states, and with justice, this view is inconsistent, for it is only rarely that the symptoms are sufficiently characteristic to allow of a differential diagnosis, and very frequently it is only by exploration that the source of the hemorrhage is ascertained. Whether extra- or subdural, the result of hemorrhage is always compression by the clot, and the sole indication of treatment is the removal of the clot and the checking of the bleeding. The important point is to recognize the presence of intracranial hemorrhage, and, if the symptoms of compression are severe, to relieve the compression immediately, no matter what the source of the hemorrhage.

The Use of Alcohol in Pneumonia.

The exact indications for the administration of alcohol in acute diseases, and even to a great extent the entire rationale of its behavior in the human body, are still far from being thoroughly understood. Medical opinion has already undergone several reversals in regard to this question, and the end does not yet appear to be in sight. It was only sixty years ago that a German physician was publicly accused of having caused the death of a patient ill with typhoid fever because he had administered wine to him, whereas, at a later period, the use of alcohol became so universal and indiscriminate as

no doubt to have caused the loss of many lives. This extreme attitude has now been abandoned, but there are still many pros and cons to this important question. Foch of Hamburg publishes in the *Münchener medizinische Wochenschrift* of October 30, 1906, the results of an effort he made to arrive at the consensus of opinion as to the use of alcohol in acute disease, taking as his example pneumonia. He directed a series of questions to a very large number of eminent physicians in Germany, Austria, Switzerland, Denmark, Sweden, and England. The answers received were sufficiently numerous to enable Fock to present a very interesting review of current opinion in Europe on this matter. The questions were the following: "Do you prescribe alcohol in every case of pneumonia, or only in special cases? In what form and in what quantity do you administer alcohol? Do you consider that it is necessary to give alcohol in pneumonia occurring in alcoholic patients? What effect do you expect from the administration of alcohol, and do you get it? Could this effect be obtained by the use of other measures?" As was to be expected, the answers received presented a wide disparity of opinion, and cannot be discussed in detail here, but it may be said that the majority of those questioned considered that alcohol should be given only in selected cases of pneumonia. The majority were also united in declaring for the advisability of not depriving alcoholic patients of all stimulant when suffering from pneumonia. There were many opinions as to the effect to be expected from the use of the drug, and very many of those questioned admitted that other remedies might be expected to give equally good results. Of especial interest were the statistics of the London Temperance Hospital, which is second to none in its cures of pneumonia, and yet in the four years from 1901 to 1904 reports the use of alcohol only 11 times in treating 297 cases of pneumonia. Many clinicians are of the opinion that while the use of alcohol may not be unfavorable to the course of the disease itself, the convalescence of the patients who have received it is more protracted than that of those who have not. This, of course, is very largely a matter of opinion, and is hardly susceptible of statistical demonstration since the patients receiving alcohol are apt to be the victims of the severest infections. Indeed, this whole inquiry of Fock's, while interesting as portraying the lack of uniformity in opinion among some of the most prominent European clinicians, does not help a great deal toward the solution of the problem. Definite results can be expected only when in large hospitals long series of cases are treated in strict rotation, first one with alcohol and the next without, of course making exceptions in cases in which the welfare of the patients seems to demand it.

Voluntary Dilatation of the Pupils.

The ability voluntarily to dilate the pupils is probably one of the rarest of physical endowments. It certainly has been very seldom recorded in medical publications, and Bloch, in reporting a case of this sort (*Deutsche medizinische Wochenschrift*, November 1, 1906), states that he was able to find in the literature only two references to observations of a similar nature. One of these is only a matter of hearsay, and the other was a patient of Bechterew's, who was able voluntarily to dilate widely the pupil of his right eye. Bloch's own patient was a young man under treatment for morphinism, and his power of pupillary control was discovered through the fact that the patient did not present the myosis customary to such individuals. In response to Bloch's inquiries, the patient stated that several years ago he had discovered that he possessed the power to dilate his pupils voluntarily, and on this and numerous subsequent occasions he gave demonstrations of his peculiar faculty. In order to perform the feat he would sit in the center of the room, with his head tilted backward and eyes directed toward the ceiling, that is, with the accommodation relaxed. Three to four seconds after the word of command a distinct dilatation of the pupils would take place, the apertures regaining their normal size at the expiration of about a quarter of a minute. The author relates various precautions taken in order to exclude all possibilities of intentional or unintentional deception on the part of the patient, notably the dilatation occurring on relaxing the accommodation, and then points out that if it is found that this ability to control the ciliary muscle exists to any extent, the current conception of the localization of the pupillary center must undergo revision. It is generally considered that the pupils are controlled either from the neighborhood of the corpora quadrigemina or in the medulla, that is, from a subcortical center. The ability voluntarily to initiate movements of the ciliary muscle not only connotes the power of voluntary motion in unstriated muscle, but also leads to the conclusion that for the pupils there must exist a cortical motor arc. The author closes by expressing the hope that this cortical center for pupillary control may at some time be discovered.

A Plan for Saving Infant Life.

When Alderman Broadbent, a brother of Sir Wm. Broadbent, the King's physician, took office as Mayor of Huddersfield, on November 9, 1904, he devised a novel scheme to reduce infant mortality. He offered to give parents living in a specified district of the city a guinea for every child born during his twelve months in office and living at the end of twelve months. The result of the experiment was announced recently, on the second anniversary of its inauguration. The rate of infant mortality in the Longwood district of Huddersfield, which is the experimental area, had averaged 122 per thousand for the preceding ten years. The period of the tests proved somewhat unfortunate. There were serious epidemics of whooping cough and measles, while the summer of 1906 was one of the deadliest recorded. The first baby to earn the gift was born on November 10, 1904, and the last on November 8, 1905. The mothers notified the managing committee of the births of these babies. No fewer than 107 received the gift. Four died and one did not claim the gift and its fate cannot be learned. If, however, it is reckoned as dead the average mortality works out 44 per thousand as compared with the previous 122 per thousand, certainly an astounding reduction.

The Army Canteen.

The canteen question will not down. In his annual report, made public in Washington some time ago, Brigadier-General McCaskey strongly urges the restoration of the canteen features of the post exchange at Oklahoma City. He says it is the belief of the men that the closing of the canteen is an interference with their personal rights guaranteed by the Constitution of the United States, and they ask that it may be submitted to the Supreme Court for final decision.

News of the Week.

The Annual Discourse at the Academy.—Thursday, November 15, being the fifty-ninth anniversary of the New York Academy of Medicine, the usual scientific character of the meeting of the Academy gave place, as is customary on these occasions, to the presentation of a subject interesting to laymen. This custom was initiated in order to show that the interest of the profession is not confined to medicine alone, but to subjects of general interest as well. Dr. Roswell Park of Buffalo gave a discourse on "Medicine and Surgery in Classic Art and Satire," which was accompanied by the presentation of over one hundred lantern slides. The necessity of a knowledge of anatomy had, from the earliest times, formed a bond between medicine and art. Raphael and Michael Angelo had made a study of anatomy, and Leonardo da Vinci had left an elaborate work on anatomy which had been plagiarized. The lantern slides consisted of illustrations of the works of great masters, having special bearing on the subject of medicine, the favorite subject seeming to be an anatomical demonstration by some famous physician before a class of students. Medicine in the past had furnished much material for the artist satirically inclined, and he hoped that the present and future would not furnish so large an opportunity in this devotion as had the past. At this meeting a painting was exhibited which had been presented to the gallery of the Academy. The president announced that the collection had been very fortunate of late in its acquisitions, and it was a matter of great satisfaction to the Academy.

Public Health Defense League.—About one hundred and twenty-five delegates, representing organizations in New York, Philadelphia, and cities of the South and Middle West, assembled in the Hudson Theater on November 16 under the auspices of the County Medical Society, and organized a society with the above title. Its object is to obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, and to work for the enlightenment of the public on all matters affecting these subjects. The society will also assist the authorities in getting evidence against violators of the public health laws, and will interest itself in securing legislation of this sort where it is needed. The meeting was called to order by Dr. Floyd S. Crandall, and Mr. Austen G. Fox was made chairman.

More Accommodations for the Insane Needed.—The fact that at present the State's institutions for the care of the insane are overcrowded, and that many individuals requiring institutional care cannot be provided for, was emphasized by Dr. William L. Russell, chairman of the Committee on the Study and Care of Defectives, in a report submitted to the State Board of Charities last week. He stated that altogether there are 2,500 such persons for whom no provision has been made. Statistics offered by the State Commission in Lunacy and the State Board of Charities show that on September 30 last there were 29,338 persons in the institutions for the insane, feeble-minded, and epileptic, of whom 26,357 were in the State hospitals, 1,946 in the institutions for the feeble-minded, and 1,035 at the colony for epileptics. It is said that the thirteen hospitals under the direction of the Commission in Lunacy have accommodations for 24,465 patients, and the total population on September 30 was more than 26,000. In the metropolitan district the greatest need of accommodations exists. At the close of the last fiscal year the four hospitals to which the insane of the metropolitan district are sent were badly overcrowded, and there are already about 2,000 patients belonging to the district in hospitals in other parts of the State.

A Second Institution for Dependent Epileptics in New York State.—At the seventh New York State Conference of Charities and Corrections held in Rochester, November 13-15, the urgent need for an institution for epileptics of a low grade of mentality was discussed, the suggestion being made that the Craig Colony for Epileptics at Sonyea should be reserved for patients whose minds have been but little or not at all impaired as a result of their disease. There are 16,000 epileptics in New York State, and we understand that there are at present about 1,000 applications on file at Sonyea from patients who cannot be admitted into the Colony because there is no room. The census of the Colony now is 1,050. Nearly 300 delegates to the Rochester Conference visited the Colony at Sonyea by special train on November 16, where they were provided with luncheon in Sonyea Hall, and where they later listened to addresses by Mr. Daniel B. Murphy, of Rochester, the newly-elected president of the Conference; the Hon. J. W. Wadsworth, Jr., Speaker of the Assembly, and Dr. W. P. Spratling. All were especially pleased to hear the Speaker of the Assembly declare himself forcibly in favor of a second institution in this State for low grade epileptics, and he promised, in case a bill to that end should be introduced into the Legislature, to do what he could to secure such an institution within reasonable proximity to New York City. There are sixteen great State Hospitals for the Insane. Why not more colonies or institutions for epileptics?

Census of the Blind.—The New York State Commission to Investigate the Condition of the Blind announces that it is greatly desired that the census of the blind in this State, which is now being taken, shall be as accurate and complete as possible. The purpose of this census is not only to determine the number of blind men and women who are phvsically capable of engaging in some of the occupations suitable for them, and to make recommendations to the Legislature concerning the establishment of industrial schools for the blind, but also to learn the cause of blindness in each case, in order that prophylactic measures may be instituted. The Commissioners will be grateful to any one who will send the names of blind persons, in order that they may be properly registered. The Commissioners are: Dr. F. Park Lewis, 454 Franklin street, Buffalo: W. J. McClusky, 425 Kirk Block, Syracuse, and Eben P. Morford, 512 Gates avenue, Brooklyn. The secretary is O. H. Burritt, Batavia, N. Y.

Seaside Hospital to Be Kept Open.—At its fortieth annual meeting held last week, St. John's Guild announced that it would keep its Seaside Hospital at New Dorp, Staten Island, open during the winter for use as a convalescent home for women and children. This is a new departure in the work of the Guild, which heretofore has kept open its floating and seaside hospitals during the summer months only. The committee on floating hospitals reported that during the summer season from July 5 to September 7, 1906, a total of 38,392 women, children, and babies were carried on the steamer *Helen C. Juilliard*. Of these 13,411 came from the East Side, 14,786 from the West Side, and 10,195 from Brooklyn. Patients to the number of 2,591 had been admitted to the Seaside Hospital,

and only 97 deaths had occurred there during the summer. The Treasurer's report indicated that more contributions were received in the year from October 1, 1905, to September 30, 1906, than ever before. Besides the annual appropriation of $20,000 from the city, more than $60,000, largely in small amounts, was received.

New Hospital Sunday Plan.—At a meeting of the Hospital Saturday and Sunday Association, held on November 12, it was decided to attempt to increase collections by securing offers of special gifts contingent upon results. By adopting this plan the trustees hope to increase the $95,000 collected last year to more than $100,000 this year.

Illinois Nurses Plan for State Registration.—Plans for a campaign for State Nurse Registration will be brought before the next session of the Illinois Legislature by the nurses of the State. The nurses are determined that in this case the proposed measure, which twice before has passed both Houses of the State Legislature, only to be vetoed by the Governor on account of technical defects, shall not fail for lack of due deliberation. The bill is now in the hands of an attorney, who is examining its provisions carefully, and who will report to the Association on its constitutionality and the probability of its passing.

Aid for Sick Pupils.—The Visiting Nurses' Association of Chicago has completed a profitable year of work among the school-children of the city. It has issued a report showing that hundreds of boys and girls have been cured of ills and returned to school as a direct result of the experimental campaign of investigation and visitation carried on by the nurses of the Association during 1906. A year ago the directors of the organization decided to appropriate $1,000 of their money to be used in sending nurses to the schools of the poorer districts for the purpose of bettering conditions among the boys and girls.

Two British Suggestions.—According to the daily press, the difficulty in determining just when objectionable sounds are to be regarded as a nuisance is to be dealt with by a British committee that will endeavor to standardize noise in some way, so that its intensity can be expressed in precise terms. The problem has been set by the Commissioner of the Metropolitan Police, who is troubled how to interpret the words "undue noise" which the regulations governing motor omnibuses prescribe. Lord Raleigh is to be one of the committee. The *Lancet*, in a recent issue, makes an appeal for the standardization of staircases as a needed reform. It gravely pictures the evils arising from irregularity in the height of steps, such as falls and toe-smashing against the edge, and contends that they should be everywhere of uniform height and breadth, and roomy enough for each step to accommodate the whole foot from toe to heel.

New York Skin and Cancer Hospital.—At the twenty-fourth annual meeting of the managers of this institution, held last week, the following officers were elected: *President*, J. Cleveland Cady; *Vice-President*, William C. Witter; *Secretary*, L. Duncan Bulkley; *Treasurer*, Alfred R. Kimball. The reports called attention to the necessity for increased accommodations for the hospital, and it was stated that many patients had to be turned away because of lack of room.

New York Orthopedic Dispensary and Hospital.—The Trustees of the New York Orthopedic Dispensary and Hospital announce that the Surgeon-in-Chief, Dr. Russell A. Hibbs, will give a course of clinical lectures on orthopedic surgery at the institution on Tuesday and Friday afternoons at 4 o'clock, from November 20 to December 21, inclusive. The course will be free to the medical profession and students.

To Stop Child Labor.—Senator Beveridge has announced his intention of introducing at the coming session of Congress a measure to prohibit child labor. This bill will provide that no railroad, steamship, steamboat or other carrier of interstate commerce shall transport or accept for transportation the product of any factory or mine that employs childen under fourteen years of age.

A Black List in Middletown.—The physicians of Middletown, N. Y., are reported to have compiled a list of the people who are able to pay their doctors' bills but do not do so, and have agreed, except in emergencies, to collect in advance from these persons before treating them.

The Sultan of Turkey is reported to be in a very precarious state of health, and Dr. Bergmann has again been summoned in consultation from Berlin. The details concerning the Sultan's illness, which is the result of enlargement of the prostate gland, were given by the Constantinople correspondent of the MEDICAL RECORD in the issue of September 8, 1906.

To Study Sleeping Sickness.—The French Geographical Society has collected the sum of $40,000 for the purpose of organizing a mission to West Africa to study the sleeping sickness in the French Congo. A central laboratory will be established in Brazzeville.

Consolidation of Medical Journals.—On January 1, 1907, the *Therapeutic Gazette, Medical Age*, and *Medicine*, all three published by E. G. Swift of Detroit, Mich., will be consolidated and issued in future as one journal under the title of the *Therapeutic Gazette*. The editors will be Drs. Hobart Amory Hare and Edward Martin, long associated in the editorial conduct of the *Therapeutic Gazette*.

Gift to the Yale Medical School.—At a meeting of the Yale Corporation in New Haven on November 19, a gift of $50,000 from an anonymous giver was announced to establish the John Slade Ely Professorship in the Medical School in memory of Prof. Ely, who died in the spring.

Dr. Theodore Schott of Bad Nauheim intends visiting the United States this winter for a stay of six or eight weeks. He will arrive in New York about the middle of January, and will, while in the country, read papers before societies in Boston, Cincinnati, and elsewhere.

Dr. D'Orsay Hecht has been appointed Assistant Professor of Nervous and Mental Diseases and Medical Jurisprudence in the Northwestern University Medical School, Chicago.

One Death in the Wesleyan Typhoid Epidemic.—One of the six students who contracted typhoid fever supposedly as the result of eating infected oysters at a banquet, has died.

Death of the Oldest Twin.—Last week what were supposed to be the oldest living twins were separated by death. They were brothers, living in Amsterdam and Syracuse, N. Y., respectively, and their age was ninety-one years. The deceased three years ago celebrated the sixtieth anniversary of his wedding. The death of an old lady on November 12 is reported from Danville, Pa., as the result of a cold caught on the occasion of the celebration of her one hundredth birthday a week before.

Immigration Increasing.—The report of the Department of Commerce and Labor, issued on November 15, shows a marked increase in the immigration statistics. In the six months ended October 31, 1904, the number of arrivals from all countries was 442,685, and in the corresponding period this year 632,137 immigrants landed at American ports, an increase of 45 per cent.

International Tuberculosis Congress.—At the fourth biennial session of this body, held at the Hotel Astor last week under the presidency of Dr. Daniel, the following officers were elected: *President,* Dr. C. H. Irion of New Orleans; *Vice-Presidents,* Dr. George R. Tabor of Texas, Dr. Charles Wood Fassett of Missouri, Dr. F. B. Fess of New Mexico, Dr. W. F. Drewry of Virginia, and Dr. J. W. McDonald of West Virginia; *Secretary-Treasurer,* Dr. M. M. Smith of Texas. Mr. Clark Bell was elected *Honorary President.*

Society of Medical Inspectors.—At a meeting of the Society of the Medical Inspectors of the City of New York, held on November 16, the advisability of further development of the medical inspection of school children was urged. A number of school principals discussed the effect of physical defects in retarding the progress of the pupils, and one speaker stated that nearly 95 per cent. of the children were suffering from eye affections, adenoids, or some other condition that impeded their mental and physical growth.

A Pure Milk Conference.—A public meeting was held in the hall of the New York Academy of Medicine on Tuesday evening of this week to consider the best means of insuring a pure milk supply. No definite conclusions were arrived at, but resolutions were adopted to do away with the prohibition of the sale of pure skim milk, urging the spread of information as to the importance of cleanliness in handling milk, recommending legislation making pollution of milk receptacles a misdemeanor, and insuring the separation of milk from other goods sold in groceries.

Southern Surgical and Gynecological Association.—The nineteenth annual meeting of this organization will be held in Baltimore on December 11, 12 and 13, 1906. The president is Dr. George H. Noble of Atlanta, the secretary Dr. William D. Haggard of Nashville, Tenn., and the chairman of the committee of arrangements Dr. Howard Kelly of Baltimore.

Rockingham County (N. H.) Medical Society.—At the second annual meeting of this society, held in Exter on November 8, these officers were elected: *President,* Dr. A. B. Sherburne of Portsmouth; *Vice-President,* Dr. J. J. Berry of Portsmouth; *Secretary,* Dr. Walter Tuttle of Exeter; *Treasurer,* Dr. Alice M. Chesley of Exeter; *Censor,* Dr. Charles A. Morse of Newmarket.

Æsculapian Society of the Wabash Valley.—At the sixtieth annual meeting of this society, held recently at Paris, Ill., the following officers were elected: *President,* Dr. Chas. B. Johnson, Champaign, Ill.; *Vice-President,* Dr. F. E. Bell, Mattoon, Ill.; *Secretary and Treasurer,* Dr. H. N. Rafferty, Robinson, Ill.; *Censors,* Drs. J. T. Montgomery, Charleston, Ill., C. E. Price, Eaton, Ill., Mark Rowe, Paris, Ill., W. E. Bell, Terre Haute, Ind., and T. E. Walton, Danville, Ill. Champaign, Ill, was chosen as the place for the semiannual meeting in May next.

Obituary Notes.— Dr. Allen L. Jenkins, a well-known physician of Plainfield, N. J., who was once mayor of that city, died suddenly of heart disease on November 13, at the age of sixty years. He was graduated from the New York Homeopathic Medical College in 1877. After practising for a short time in Connecticut, he returned to Plainfield, and had lived there ever since.

Dr. T. M. A'Heron of Hampton Junction, N. J., died of nephritis on November 15, at the age of sixty years. He was born in Ireland, and came to this country about thirty years ago. For many years he was a surgeon to the Central Railroad of New Jersey, and was well known for his skill in performing amputations.

Dr. Ferdinand Beach of this city died on November 15 in Santa Barbara, Cal., where he had gone about a year ago for his health. Dr. Beach was born in New Haven, and was graduated from the Yale Medical School in 1864, and served as an army surgeon from that time until the end of the Civil War.

Dr. W. A. Ball of Toronto, Ont., died on November 3, at the age of thirty-eight years. He was graduated from Trinity and University College eleven years ago, and had acquired an extensive practice in Toronto.

Dr. Asa Wall of Winchester, Va., died on November 10, at the age of seventy-six years. Dr. Wall was a surgeon in the U. S. Army during the war with Mexico and during the Seminole and other Indian wars. During the Civil War he served in the Confederate Army.

Dr. William Shafer of Camden, N. J., died on November 8 of heart disease, at the age of fifty-five years. Dr. Shafer was born in Leesburg, Va., and was graduated from Jefferson Medical College in the class of 1884.

Dr. Ossian Sumner of Providence, R. I., died on November 11, at the age of eighty-seven years. He was born in Ashford, Conn., and received his medical education at Jefferson Medical School in Philadelphia, from which he was graduated in 1844. He practised for a year at Pomfret and then removed to Providence, where he had practised ever since. He was made a member of the State Board of Pharmacy in 1870, and had held numerous other official positions.

Dr. Leopold De Rudder of Marcus, Wash., died on November 8, at an advanced age. He was a native of Belgium, and was educated in Brussels, but came to this country when a young man, and was surgeon in the Mexican Army during the war with the United States. In 1860 he entered the service of the U. S. Army and came to Colville as an army surgeon in 1872. When Fort Colville was abandoned in 1883 he began private practice, and had been engaged in active work until recently.

Dr. J. R. Mansfield of Wakefield, Mass., died on November 11 in Chelmsford. Dr. Mansfield was born in Carlisle, Mass., in 1832, and after serving as surgeon in the Civil War he settled in Wakefield, and had been engaged in active practice until a few years ago.

Dr. J. T. Reeve of Appleton, Wis., died on November 5, at the age of seventy-four years. Dr. Reeve was born at Goshen, N. Y., and was a graduate of Jefferson Medical College, Philadelphia. He had practised in Wisconsin since 1855, and for nineteen years was secretary of the Wisconsin State Board of Health; he also served several terms as president of State Medical Society.

Dr. H. H. Rodman, formerly of this city, died suddenly in Buffalo on November 12. He was graduated from the College of Physicians and Surgeons in the class of 1896.

Correspondence.

OUR CANADIAN LETTTER.

(From Our Special Correspondent.)

DEATH OF DR. JAMES STEWART OF MONTREAL [illegible] MEDICAL ASSOCIATION PROVINCIAL [illegible] EXHIBIT —MEDICAL INSPECTION OF MONTREAL SCHOOLS—CONSUMPTION OF ALCOHOLIC STIMULANTS IN CANADA [illegible] OF DEPENDENTS AND DELINQUENTS [illegible] IN CANADA.

[illegible], November [illegible], 1906.

The death of Dr. James Stewart of Montreal has removed one of the greatest names from the list of Canadian physicians. He had a distinguished career. Born in 1846, he studied at McGill University, where he graduated with honors in 1869. He subsequently studied at Edinburgh, Vienna, Berlin, and London; in fact, he was always a student, and nearly every year went to Europe and spent some time at the hospital centers. He began the practice of his profession in a small country hamlet, where his qualifications were so recognized that his eminence brought to the little village the greatest fame it ever had before or since. He was beloved by all his professional confrères, and the field of his work became very extensive. He declined all invitations to leave the country for the city until 1883, when the chair of Materia Medica at McGill was offered to him. Then he reluctantly left the field of country practice to enter upon the duties of the professoriate in Montreal. During the whole of his career he did special and valuable work in nervous diseases, and after taking up his residence in Montreal he became recognized as probably the best Canadian authority in that department of medicine. His whole life was devoted to work. His observation was exceedingly acute, and it was often remarked that he gathered more information with the eye than most men could by a complete examination of the patient. His clinics were certainly unsurpassed in Canada, and were always greatly appreciated by the students. He deprecated shotgun prescriptions made up of many ingredients. "Never give a drug," he would say, "unless you have a very good reason for doing so, and then give sufficient to be of some use, and give it in the simplest way you can." He was for several years before his death Professor of Medicine at McGill. His acuteness at clearing up a diagnosis made his skill in great demand. His kindly disposition was coupled with a most retiring manner. On the opening of the Royal Victoria Hospital, Dr. Stewart was unanimously selected for the position of physician-in-chief, and so continued until his death. His chief medical works were "Treatment of Heart Affections" and a textbook on "Nervous Diseases." Besides these he wrote numerous papers for English, American, and Canadian medical journals. He was a past president of the Canadian Medical Association and did excellent work on its behalf. Dr. Stewart had been ill for about two years, but the final illness lasted little more than a week. An apoplectic shock was the immediate cause of death.

The Winnipeg Medical Association has held its annual meeting and elected the following officers: *President*, Dr. E. W. Montgomery; *First Vice-President*, Dr. J. R. Davidson; *Second Vice-President*, Dr. N. J. McLean; *Secretary-Treasurer*, Dr. C. H. Vrooman; *Councillors*, Drs. McKinty, A. MacKay, Galloway, and Todd. Judging from the interest manifested at the annual meeting, the association has entered upon a year with promising results.

The Ontario Government has decided to take practical action with a view of educating the people of the province in regard to the nature of tuberculosis and the means available both for its cure and its prevention. The tuberculosis exhibit which was made under the auspices of the Canadian National Sanitarium Association during the meeting of the British Medical Association at Toronto in August is to be duplicated, and arrangements are now being made by the Provincial Board of Health to have this exhibit open for a certain number of days in each county in Ontario. The exhibit will in this way reach, and doubtless benefit, every portion of the country. This marks a new step in the great forward movement to educate the people in regard to the nature of the disease and the simple but effective methods by which tuberculosis can be prevented. The bold action taken by the Ontario Government in this matter is certain to bring about results that could not be easily accomplished without such influences behind them. The Provincial Secretary of Ontario, Hon. W. J. Hanna, has, by deciding to take action in educating the people of Ontario in regard to tuberculosis, shown himself to be favorable to medical progress. The exhibits are now being arranged for in such a way that all the cities and county towns will be given the advantages of these free exhibits, with the series of lectures that will accompany them.

The medical inspection of schools has been established in the city of Montreal, where there are 175 schools, with a school population of 150,000 children. Forty medical practitioners were recently appointed by the City Council to carry on the work. One inspector, in presenting his first report, gives many reasons why the work should be diligently carried out. These reasons speak of "thirty pupils out of a class of sixty-six, attacked by measles, as the result of one pupil suffering from measles attending that class; schools suffused by stenches from civic dump heaps; 15 per cent. of pupils at one school suffering from defective eyesight; 15 per cent. of pupils at another school suffering from tumors, which are disclosed by a simple examination at first sight, and which are the cause of serious throat troubles. These tumors predispose the pupils to diphtheria and reveal their presence by eruptions on the face. We found a school in a basement, where the light is defective, the air bad, and humidity permanent; a school beneath the basement of a church; temporary accommodation at one school to deceive the medical inspector; forty pupils crowded in one classroom where the cubic contents of air should barely suffice for fifteen; large numbers of pupils showing signs of tuberculosis and insufficient nutrition." With such conditions reported there is every reason to expect that the system of medical school inspection will produce good results. The citizens of Montreal have set an excellent example to other Canadian cities in thus protecting the lives of the children, and a determined effort is likely to be made that will prove a blessing, the value of which it would be difficult to estimate.

A recent Government return shows that the per capita consumption in Canada of alcoholic liquors and tobacco during the year ending June 30, 1906, was as follows: Spirits, .927 gallons; beer, 15,.660 gallons; wine, .6989 gallons; tobacco, 2.991 pounds. This report shows a decrease in the quantity of spirits and an increase in beer, wine, and tobacco compared with previous years. The duties paid were at the followig per capita rate: Spirits, $1,939; beer, $2.46; wine, $0.54; tobacco, $1,135. Dr. G. Bourgeois presented a report to the recent Congress of French-speaking physicians in which he gave some striking details of alcoholism, indicating that, as compared with other countries, Canadians are a temperate people. In the Province of Ontario there is one "bar" for every 815 people; in the Province of Quebec, one for every 1,045 people; and in New Brunswick, one for every 1,898 people. Full and interesting discussions followed a paper presented by Dr. Triboulet of Paris on "Alcohol as a Causal Influence of Tuberculosis." As a result of these discussions the following resolutions were adopted by the Congress: (1) The surest method of doing away with alcoholism in Canada would be to pass a law prohibiting the manufacture and sale of all distilled alcoholic liquors in the Dominion of Canada, save for therapeutic and industrial purposes. (2) If for political or other reasons, this proposal cannot be realized, it is desirable that the Provincial Government should undertake to carry on the liquor traffic. (3) Should the Provincial Government refuse to take over the liquor traffic, a charter should be granted to a private company in each province which would take charge over the liquor traffic on the express understanding that the company was to pay to its shareholders only a fixed dividend of a moderate amount, and the surplus profits were to be devoted to charitable philanthropic or other purposes to be designated by the Provincial Government. (4) Should none of these proposals be accepted, the Congress recommends to the legislatures to amend the liquor license act by limiting the rights and privileges of municipal councils in such a way as to permit them to grant only one liquor license per 1,000 of population. The attitude taken by the French-speaking physicians of the Province of Quebec at their recent Congress is favorably commented upon, for it furnished a reliable expression of opinion on a subject which is receiving considerable attention in Canada at present.

Stringent measures have recently been inaugurated by the Ontario Government to deport all delinquents and dependents who have resided in Canada for less than two years. Already a large number of immigrants have been returned to the European ports, and a careful inquiry is being made to ascertain the number of patients in the hospitals for the insane who have had less than two years' residence in this country. For several years there has been evidence of the fact that in the large immigration to Canada there were many who soon became a public charge and whose maintenance had to be provided for in public institutions. Strange to say, there was considerable hesitation in taking the steps which are now being taken to have such persons returned to their homes. One of the results will no doubt be that steamship and railway com-

panies will be more careful when they understand that the undesirable immigrants brought over have to be returned free by the transportation companies. Those coming from the United States are also returned to their homes, for as a result of a recent census it was quite manifest that in the public institutions of Ontario there were many American citizens being cared for who had resided in Canada for less than two years.

There have been several football fatalities in Canada during the past few weeks; in fact, so frequent have been these unfortunate occurrences that it is now suggested that the game should be prohibited. The university campus at Toronto has been the scene of numerous accidents, and two young men who went into the game there in apparently the best of health were fatally injured. Montreal, Ottawa, and Kingston have each reported serious accidents. It is said that last year in the United States twenty-eight students were killed and over 1,000 more seriously injured at football. Canada this year is certainly contributing its full share to the fatalities of the sport. Considering the numbers engaged, the casualty list is greater than in the late Russo-Japanese War. It is now seriously felt that a game with such a record should have no place in college life, and its total banishment from the campi of Canadian universities will not cause much surprise or any long-continued regret.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HYGIENE AND FOOD SUPPLY—DILATATION OF THE HEART—BACTERIOLOGY OF ASEPTIC WOUNDS—CLINICAL EXHIBITS—THE VIVISECTION COMMISSION—FEEBLE-MINDED COMMISSION TO REPORT ON LUNACY.

LONDON, November 2, 1906.

A PUBLIC meeting convened by the National Health Society was held on Monday, with the object of drawing attention to the need for further measures to guard the food supply of the country. Sir F. Treves took the chair and, remarking that the society had for years preached to deaf ears, but it was to be hoped that for once the public would listen, urged the importance of the food supply, as it affected everyone personally and acutely. This supply was spoken of as good, but much uncertainty existed as to whether it was wholesome, untainted, and incapable of communicating disease. As the bacillus of typhoid was not visible to the public, they did not seem to mind swallowing it by the thousand. The matter touched the diminishing birth rate at one end and the infant mortality at the other. The treatment of our meat before we ate it was no advance on that of the cave dwellers. It was said that cooking destroyed all germs, but that was no reason for throwing meat on the floor. Our neglect was being paid for by ill health, disease, and death. He paid a cordial tribute to the work of the medical officers of health, but those gentlemen would agree that their inspections were carried out at the wrong end—at the finish instead of at the source. He quoted certain statements from the last report of the medical officers for Stepney and declared such things could only be remedied by an aroused public opinion.

Sir J. Crichton-Browne referred to a meeting held a few days previously, when it was declared that recent revelations about canned meats had only the flimsiest foundation, and that on the whole they were as nutritious as fresh meat. He disputed these statements. Properly prepared canned meats were palatable, wholesome, and nutritious, though not so nutritious as fresh. It was most desirable they should be subjected to inspection—as, indeed, should all perishable foods. Imported foods should bring with them a public warranty from the country of origin, and also be tested at the port of entry. Inspection must be of a highly technical and skilled character if the wiles of the adulterator were to be circumvented. Private slaughter-houses should be abolished and the London Act which penalized the sending a diseased carcass to market should be extended to the whole country. The adulteration acts worry the retailer, but let the real culprit go scot free. A resolution was adopted demanding further protection of our food, particularly meat, milk, preserved foods, and shellfish.

At the Medico-Chirurgical Dr. A. M. Gossage read a paper on "Dilatation of the Heart," advocating almost exclusively the myogenic theory. The action of the heart being of muscular origin, he attributed dilatation to diminished tone of the fibers of the muscle, though he admitted that tonicity might be affected by nervous or other influences, and that in either direction. Thus it would seem that those who do not accept the myogenic explanation have foundation for their scepticism. Dr. Gossage credited the cardiac muscle with the power of rhythmically building up excitability, conductivity, contractility, and tonicity. He adopted the view that the contraction started from the great veins, but he had to admit that it is possible under artificial stimulus that it may begin in the ventricles. Dilatation, he held, was due to diminution of tonicity and was associated with increased excitability, and also, perhaps, contractility. Drugs which increase tonicity are followed by a reverse condition. With loss of tone the ventricles become the more excitable part and extra systoles ensue, and if this loss become excessive, the stimulus is greater still in the ventricles, and from them the rhythm starts.

In discussing the paper, Dr. A. Morison remarked that more than one factor was concerned in any organic action, and in loss of tone the blood supply and innervation had to be considered. The most constantly rhythmic organs had the most nerve supply. He could not accept the myogenic theory as altogether sufficient.

Dr. E. I. Spriggs referred to mechanical factors as the load on the ventricular walls in bringing on dilatation, and said he would like some proof of extra systoles starting in the ventricle.

Dr. John Hay mentioned the new point of the paper, viz., that when tone increased, other functions decreased. It was doubtful whether tonicity was of the same nature as contractility. He cited the effects of infusing sodium and digitalis.

Professor Wenckebach accepted the myogenic theory in full. Was the stimulus for contraction given by nerves or the cardiac muscle? The properties of the latter were known and could be acted on. No proof was forthcoming that tone and rate were interdependent. The relation of tonicity to contractility was not known.

This discussion seems to show that physiology has yet more to investigate on the points considered.

At the Medical Society "The Bacteriology of Aseptic Wounds" was the subject of a paper by Drs. Dudgeon and Sargent. The staphylococci were spoken of a good deal. In fifty aseptic wounds, most of them operative, no chemical antiseptic having been used in forty-five, the authors found in these forty-five the wound was sterile in twenty-six. In the other nineteen the *Staph. albus* was present in fifteen. In six of the forty-five the skin was sterile. In only one of the whole fifty cases was there suppuration, and in that the *S. aureus* was found. In all there was some pyrexia after operation which they thought due to *S. albus*. They suggested that this might play a physiological part.

Mr. Lockwood considered any wound containing bacteria to be septic. He used carbolic acid, but only one in sixty, and thought chemical antiseptics indispensable in London.

Mr. Spencer thought there was no proof of such distinction between *S. albus* and *S. aureus*, as suggested in the paper.

Mr. Malcolm said the *S. albus* was not always present, and therefore could not be physiologically necessary in healing wounds, and inflammation sometimes had a chemical origin.

Mr. Leedham-Green described experiments with pure metals as sutures, etc. Copper was the most powerful bactericidally, silver and iron being both much weaker.

At the Clinical Society there were many interesting exhibits. A case of traumatic cephalhydrocele in a female infant of six weeks which he had treated by operation was shown by Mr. Drew. The baby was admitted to the hospital within a few hours of accident with a large swelling on the right side of the head. There had been no loss of consciousness. For two days after admission there was twitching of left arm and leg and impulse in the swelling when the child cried. The tumor increased and the gap in the bone widened to about one-half an inch. At the operation the sac was found to be formed by separated peritoneum. On letting off the fluid profound shock ensued. The fracture was in the parietal, one-half inch across, and through the center hernia of brain protruded. This was cut off, the bones drawn together with silver wire, periosteum replaced, and the wound sutured. Mr. Godlee congratulated Mr. Drew, and remarked on the rarity of success in such cases.

Another brain case was a child of four years and ten months admitted to the Children's Hospital with symptoms of cerebellar tumor. Mr. Ballance operated in June, 1905, and removed the large tumor shown. Good recovery followed.

Dr. Garrod showed a case of alkaptonuria. A girl of three was the patient, and no other case had been known in the families of her parents who were not related. The condition seems more rare in females than in males, only

six or seven cases in girls being recorded out of a total of about forty congenital cases.

Several bone cases were exhibited, *e.g.* traumatic separation of the head of the femur, as shown in a skiagram. Malunited fracture of both bones at the ankle joint treated by operation. Deformity of the long bones in a girl of eight. Skiagrams seemed to show that the chief deformities were due to fractures and irregular ossification at short distances from the epiphyseal lines. Mr. Clutton, president, thought the case was one of rickets, and still progressing; he found fragilitas ossium often due to rickets. Another bone case was in a girl of seven, who was noticed to limp thirteen months before admission to hospital, when the right leg was two and one-half inches shorter than the left. The shafts of femur and tibia were thickened, chiefly at their ends. Some thought the disease syphilitic. Another child of eight, boy, who had dysentery when seven weeks old, followed by swelling of right knee, which lasted two months, a year ago walked with peculiar gait, resembling that in congenital dislocations. No pain, no tenderness, joint movements free. The trochanters were raised, especially the right, prominently so on adduction of legs. A member compared the case to septic arthritis in adults after dysentery. They were often of long duration. A case of double coxa vara with possible fracture of neck of right femur, as seen in skiagrams, was shown in a boy of sixteen. A barrow fell on him in August, 1905, and broke his right thigh. The trochanter was more prominent than the left, and was three-fourths of an inch above Nelaton's line. Both limbs rotated outward; abduction and adduction much limited; walking difficult, and the gait that of coxa vara. The lad said his toes had always turned out, but he was active and could join in games up to the time of his accident.

The antivivisectionists are angry with the Royal Commission for deciding to hold its meetings in private and have protested that the press must be admitted and the witnesses cross-examined by counsel in order to elucidate the truth. Mr. Stephen Coleridge said he was most anxious to be examined and cross-examined. Poor fellow, his appetite for notoriety seems unappeasable.

The Royal Commission on the care and control of the feeble-minded have been entrusted by an extension of their terms of reference with the additional duty of inquiring into the constitution, jurisdiction, and working of the Commission in Lunacy and of other lunacy authorities, and into the expediency of amending the same or adopting some other system of supervising the care of lunatics and the mentally defective, and of reporting as to any amendments in the law which should, in their opinion, be adopted. This great addition to the duties of the Commission may well be the forerunner of a complete reform of our lunacy laws and their administration.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

WHERE, WHEN, AND HOW CAN AMERICAN PHYSICIANS OBTAIN POSTGRADUATE INSTRUCTION IN GERMANY?

BERLIN, [illegible]

In Berlin there are three organizations for postgraduate study, the first of which is the *Dozentenverein für Ferienkurse*. These courses are held twice a year, in the months of October and March. In case Easter comes in the month of March the courses are held in April. These courses are given by the University *Dozenten* and their assistants, and are noteworthy for their variety and excellence. For example, to mention a few subjects, normal and pathological anatomy is taught by eighteen instructors, internal medicine by forty-one, neurology by seven, surgery by ten, ophthalmology by six, rhinology by ten, gynecology by eight, and skin and urinary diseases by ten. In addition lectures are held on physiology, forensic medicine, hygiene, chemistry, radiotherapy, and scientific photography. Information regarding these courses may be obtained from the office of the Langenbeckhaus, Ziegelstrasse 10. Another organization for the same purpose is the *Vereinigung zur Veranstaltung von Kursen für praktische Aerzte*. This is much smaller than the previous one, but possesses the advantage that its courses are given throughout the entire year, beginning with the first of every month. Its members are seventeen laboratory and clinical workers, who give instruction in bacteriology, internal medicine, massage, psychiatry, surgery, ophthalmology, rhinology, otology, gynecology, urology, dermatology, and disorders of speech. Correspondence for the association is conducted through the book store of Oscar Rothacker, Friedrichstrasse 105. The third organization is the *Verein für ärztliche Fortbildungskurse*, and is in general very similar to the preceding one. Under its auspices courses lasting four weeks are given every quarter, including all medical branches. The business address of the organization is care of the book store of Otto Enslin, Karlstrasse 32. In addition, once or twice every year practical courses in bacteriology are given in the Königlichen Institut für Infektionskrankheiten. These cover bacteriological technique, with especial reference to modern methods in dealing with domestic and tropical diseases, as well as the subjects of immunity and the specific treatment of infectious diseases. The entire course consists of fifty lectures requiring from one to one and one-half hours a day, and of practical laboratory work. Besides these facilities for postgraduate work, a great many of the directors of municipal or governmental institutions, laboratory workers, chiefs of clinic, etc., give courses at any time when they can secure a sufficient number of participants. In general three to four persons are sufficient to form a class.

In Greifswald there is an association for postgraduate study. The courses comprise only the chief branches, and usually are held in the last week of July and the first part of August. The president and secretary is Prof. Dr. Martin, Greifswald.

In Halle a series of courses is held during the first two weeks of August in the institutes of the university. All of the chief subjects are taken up. Address, *Vereinigung für aerztliche Fortbildungskurse*, Halle.

In Marburg postgraduate courses in surgery, pathology, anatomy, ophthalmology, and internal medicine are held in the university from the middle of August to the end of September.

In Munich postgraduate work can be done in the university buildings during the autumn vacation, from the middle of September to the middle of October. The subjects in which courses are held are anatomy, pathology, bacteriology, physical therapy, clinical chemistry, children's diseases, internal medicine, rhinology, hygiene, dermatology, surgery, gynecology, and ophthalmology. Address, Dr. Kerschensteiner, Ziemssenstrasse 79.

In Erlangen and in Würzburg there are associations for postgraduate study which usually hold their courses in September. Correspondence should be addressed to Privatdozent Dr. O. Schulz, Erlangen, or to the Universitätsquästur, Würzburg.

In Dresden courses are held in the Königlichen Frauenklinik during May, November, and February. In addition, during the summer and winter terms clinical instruction is given daily. Inquiries should be addressed to the Direktion der Frauenklinik, Dresden.

In Leipsic there is an association for postgraduate study which gives courses in ophthalmology, internal medicine, bacteriology, pediatrics, urology, otology, dermatology, and surgery, usually during the month of August. Information may be obtained from the Universitätsquästur, Leipsic.

In Jena postgraduate courses are held during July in the following subjects: psychiatry, gynecology, internal medicine, surgery, ophthalmology, otology, rhinology, hygiene, bacteriology, and pharmacology. Information may be obtained from Prof. Dr. Gärttner, Jena.

In Hamburg during November postgraduate instruction is given in the Eppendorfer Krankenhaus in internal medicine, nervous diseases, surgery, ophthalmology, gynecology, pathology, rhinology, otology, massage, Roentgenology, urology, dermatology, hygiene, and forensic medicine. Courses are also given in the Seemanns Krankenhaus und Institut für Schiffs und Tropenkrankheiten during the months of April, May, June, October, and November. These are especially intended for ships' surgeons and deal with tropical diseases and allied subjects. Correspondence should be directed to Prof. Dr. Nocht.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

VESICAL CALCULUS—SUPRAPUBIC LITHOTOMY—CASE OF THE SPLEEN—[illegible]—CHRONIC PANCREATITIS—[illegible]

VIENNA, [illegible]

Dr. Hugo Unterberg has recently operated on several unusual cases of vesical calculus. The first patient was a man of twenty years, who complained of urinary dribbling and severe pain in the bladder region. A stone present in the membranous urethra blocked the lumen so completely that not even the thinnest sound could be passed beyond it. The Roentgen rays were resorted to in order to determine whether stones were present in the bladder also, and two calculi were revealed. A suprapubic cystotomy was therefore done. The second patient was a man sixty-seven years

old, who exhibited the typical picture of stone. Cystoscopic examination revealed the presence of numerous calculi, arranged in two rows behind the moderately enlarged central lobe of the prostate. Forty-nine uratic concretions were removed by the suprapubic operation. In the first case an exact diagnosis would have been impossible without the Roentgen rays, and in the second the operation was much facilitated by the cystoscopy. Unterberg sutures the bladder completely only in those cases in which pure urate or oxalate stones are present; if there are phosphatic calculi, the vesical incision is not closed entirely, but is drained in the suprapubic region. The same operator has recently had an interesting case of renal calculus. This patient, who was thirty-five years old, had for some years complained of pain in the left side. On making a cystoscopic examination, it was found that the bladder was the seat of a diffuse cystitis, and that the left ureteral orifice was dilated, while the right one was normal. The left kidney was functionally inefficient, and at the nephrotomy a well-marked perinephritis was revealed. The exposure of only a part even of the convexity of the organ was attended with considerable difficulty, owing to the density of the adhesions. On opening the pelvis, which was much dilated, five stones were removed. The patient made an uncomplicated recovery.

A puerperal strangulation of the spleen has been treated by Prof. Barsany. The twenty-six-year-old primapara presented the symptoms of a severe peritonitis, owing to torsion of the pedicle of a wandering spleen. On admission she had a high temperature and 17,000 leucocytes, so that a tentative diagnosis of suppurating ovarian cyst was made. Some weeks later the fever had subsided and Barsany opened the abdomen. Fifteen liters of pus were evacuated from an enormous cystic swelling, while near the lumbar vertebræ the necrotic spleen with its twisted pedicle was found. The organ was extirpated, and the abscess cavity was flushed out and drained, after its wall had been sutured to the abdominal wall. It was supposed that the spleen became freely movable after an attack of malaria, and that its pedicle became twisted in the course of the pregnancy, producing hemorrhage into its capsule, which was followed by infection from the intestine and gave rise to the enormous abscess, although the condition might have been pyemic in origin.

Ernst Fischer successfully treated a perforating wound of the lung, caused by a stab from a pocket-knife, in a woman thirty-two years old. The wound was four cm. in length, on the left side of the thorax, and a thick stream of blood mixed with air poured out. On extending the skin wound, it was found that the wound, which traversed the eighth intercostal space, did not involve the costal arteries. Ten centimeters of the ninth rib were resected and the pleural wound extended; the lung was drawn out and was found to present a wound six cm. deep, from which arterial blood was flowing. The hemorrhage was promptly controlled by five catgut sutures and the pleural cavity drained. Complete recovery followed in five weeks.

Koloman Bauer has succeeded in obtaining from ox blood an active ferment in solution which in a period of three days is capable of chemically decomposing 83 per cent. of the uric acid added to it. The fermentative capacity is greater when the amount of uric acid added is comparatively small. If the ferment is peptonized or undergoes other destructive changes, it loses its potency. There is but little evidence that ferments entering the body from without retain any activity, and experiments in this direction can be regarded as successful only if the foreign ferments can be rendered resistant to gastric digestion.

Bencse has observed a case of chronic syphilitic indurative pancreatitis. The diagnosis of chronic atrophic hepatitis had been made four years previously on the thirty-seven-year-old patient. Recently she had presented emaciation, diarrhea, small spleen, no ascites. There were six or eight stools a day, the feces being gray in color and fatty. The urine contained 8 to 10 per cent. of sugar, and three to fourteen liters a day were voided. The administration of one hundred grams of butter gave rise to lipuria, butter floating on the surface of the urine. The patient died in consequence of gastric and intestinal hemorrhages. The symptoms pointed toward involvement of the pancreas, probably diffuse, as catarrh and impaired meat digestion were present, and with probably destruction of the cells of Langerhans. The syphilitic nature of the condition was probable, owing to the presence of enlarged cervical lymph glands, and as one pregnancy had terminated in a still birth and the other in an abortion. The diagnosis was confirmed at autopsy.

Balas has resorted to iodoform wax in order to fill the cavity left after exenteration and total removal of the orbital roof. The patient was a man forty-one years old, whose right eye had been removed two years before, owing to the presence of a new growth, which recurred and caused intense pain. The entire orbital cavity was cleaned out and the new growth removed, together with the roof of the orbit, which had to some extent been eroded by the tumor. Two days later Mosetig's iodoform wax was employed in the following way: The cavity was first disinfected with concentrated formalin solution, and then the warm iodoform-oil-wax emulsion was poured in. After it had congealed the eyelids were united over it. Healing was uncomplicated.

Progress of Medical Science.

Boston Medical and Surgical Journal, November 8, 1906.

Achylia Gastrica.—F. W. White gives a general description of this condition, basing his observations on nine cases of the disease seen in 235 consecutive cases of chronic disease of the digestive organs, in which number there were forty-one cases of subacidity. He therefore regards the simple achylia gastrica as a relatively common condition. The symptoms are not characteristic, and the diagnosis must be made from the physical examination of the patient, and of his stomach contents and feces. Those cases are best classified as achylia (although not such in the strict sense of the word) in which there is an entire lack of HCl secretion, but in which very minute traces of pepsin or rennet are retained. In making the diagnosis of gastric cancer we should remember the frequency of simple achylia, which may resemble it closely. The examination of the feces for invisible blood is, under these circumstances, especially useful. The etiology of simple achylia is unproved; its course suggests a functional origin. Its most satisfactory treatment is hygienic and dietetic.

The Analytic Method in Psychotherapeutics.—H. Lilienthal and E. W. Taylor refer to efforts made at the Massachusetts General Hospital to systematize methods of mental treatment. Those familiar with neurological hospital patients know that very many of them do not require the use of drugs or mechanical means of treatment, but rather analysis of the disordered mental state and the treatment of the condition based on the results of such an analysis. Two illustrative cases are given illustrating the methods followed. Thus in one case regarded as hysterical aphonia in which the usual therapeutic procedures gave but transient relief, it was found that the patient was in a condition of deep despondency, owing to the insanity of a brother who was confined in an asylum. The patient, a young woman, was finally induced to tell the whole circumstances of her brother's case, and measures were taken to relieve her mind of the popular prejudice existing about insanity. She was given to understand that insanity is a misfortune and not a crime, that there is no more shame connected with it than there is with physical disease. Moreover, the condition was fully analyzed to her, and in simple language she was given to understand how her trouble originated. The aphonia never returned after the first explanation, and, although she came regularly to the clinic for several months, she did not lose her voice once. On one or two occasions she came in with hoarseness, but no loss of voice. The condition cleared up completely, and now, after ten months, the patient is well and considers herself cured. The authors believe that the application of the analytical method is perfectly practicable, and that in the greater majority of cases a little perseverance will accomplish the desired results. The patients themselves quickly learn to realize the value of the suggestions made to them in the course of the analysis of their conditions, and appreciate also the time given and the effort made by the physician in their behalf.

New York Medical Journal, November 10, 1906.

Surgical Treatment of Certain Lesions of the Upper Abdomen.—J. B. Boucher refers to certain conditions in which surgical intervention is now recognized as the proper procedure. He discusses the symptomatology of gallstone disease, and chronic dyspepsia, which so often leads up to ulceration or is confounded with it. He believes that it is often difficult, and at the present time impossible to draw a hard and fast line which shall divide the cases into those in which medical, and those in which surgical aid is indicated. The author says that many patients with the first attack without serious hemorrhage, who can give up the time and who realize the importance of prolonged rest, will recover permanently under medical treatment, but the

following types should be considered surgical: (a) Cases of relapsing acute hemorrhage; (b) cases with persistent hemorrhage causing anemia; (c) perforations; (d) recurrent ulcer, pure and simple, attended with dyspepsia and starvation; (e) pyloric obstruction; (f) adhesions following ulcer or independent of it; (g) scar contraction of body of stomach giving hour-glass condition; and (h) some cases of intractable dyspepsia originating in an ulcer and for which the definite pathology is unknown.

Appendicitis: a Plea for Early Operation in Pus Cases.—W. D. Ward gives the histories of a series of cases, showing the change which has occurred in general surgical opinion regarding the advisability of early intervention in appendicitis. He is opposed to the Ochsner method. He notes the low mortality in general, acute, and also in the interval cases, but declares that the mortality is still too high in those cases in which the appendix has ruptured, and in which pus is present about it either as a circumscribed abscess or as a general peritonitis. Delay or incomplete work in such cases means that there may result subphrenic or hepatic abscess, pylephlebitis, splenic abscess, and infections in various parts of the body. The author declares that in a pus case after incising the abdominal wall we should carefully place gauze sponges so as to separate as effectually as possible the infected areas from the uninfected, then evacuate the pus first with mops, then by a local irrigation, free from the appendix, and remove it, then separate the adherent coils of large and small intestine, evacuate all secondary pus pockets, wipe the lymph from the intestines, and make them as clean as possible, remove the protective gauze pads, and put in fresh ones for drainage. Take the greatest possible care, he says, in placing drains, build up as it were a wall of gauze which will hold the intestines away from the infected areas, and then use central ropes of gauze to drain the infected spots; leave the abdominal incision wide open, no sutures. If, after the separation of adhesions, it is found that the inflammation has already spread beyond the boundaries of the right iliac fossa, a second irrigation should be given according to the following rules: Use a large tube at least three quarters of an inch in diameter; hold the funnel high so that there is plenty of force; turn the patient on the right side, and keep two fingers of the left hand spread wide apart in the incision, so that the exit is very free, and use at least two or three gallons of water. An irrigation given in this way does not spread pus, it cleanses. In these cases of general peritonitis use the Fowler position and Murphy's method of continuous saline infusion by rectum.

The Importance of Early Recognition of Nasal Obstruction and Its Relation to Later Respiratory Disturbances.—F. A. Faught calls attention to the importance of the nasal functions of warming, moistening, and purifying the inspired air. If these results are not properly attained, the lungs are bound to suffer. Children who breathe imperfectly at night or who seem dull and backward at mental development should be thoroughly examined. The author enumerates the lesions which in varying combinations are found in these children. In spite of the prevalence of adenoid disease in the pharyngeal vault and the abundant opportunity offered for its study, we are still in doubt as to its true underlying cause. Ultimately the chronic rhinitis and disturbances of aëration give rise to ear complications. The author describes the appearances of the parts as seen in routine examinations, enumerates the symptoms of the various lesions, and gives suggestions as to treatment. The paper brings forward nothing new.

Journal of the American Medical Association, November 17, 1906.

Utilization of the Broad Ligaments.—E. C. Dudley describes the mechanism of descent of the uterus, pointing out the importance of restoring the normal axes of the uterus and vagina and the preservation of the pelvic floor. In complete prolapse of the uterus the condition is practically a hernia, and should be treated like other hernias by reducing it and excising the sac in such a way as to expose strong fascial edges, which should be firmly united by sutures. He therefore proposes the adaptation of his operation, described in 1902, of end-to-end approximation of the broad ligaments for holding up the pelvic floor after vaginal hysterectomy, to support the replaced uterus. The operation is described in connection with semi-diagrammatic illustrations and its advantages, when employed in hysterectomy, are enumerated. He proposes its utilization to hold the uterus in place, in hopes that it will be found more effective than the superficial operations which, at best, have been unsatisfactory. At least it will be less mutilating than the alternative operation, vaginal hysterectomy. He also refers to his operation of reefing the broad ligaments in the removal of the appendages, also proposed in 1902, and mentions its advantages.

The Diet and Albuminuria.—H. Stern recapitulates the results of a series of experimental studies of eighty-two patients who had albuminuria. The object was to determine the influence of certain types of nutritives and ingesta not on the underlying disease, but on the accompanying symptoms of albuminuria. The substances tested were proteids in the form of milk, eggs, and meats, the commonly employed cabohydrates, and water. Before adding the other proteid-containing ingesta the patients were kept on an exclusive milk diet for two weeks; other proteid materials were then substituted for the milk. The changes observed during the milk diet were diminution of the albumin, in the larger number of cases in which any changes at all occurred, and in a smaller proportion an increase. The influence of rest in diminishing the albuminuria seems marked in these experiments. The change to other proteid diet was more frequently accompanied by a transitory increase than by a decrease, though in the majority no effect was observed. His conclusions as regards carbohydrates and fats are that they have practically little effect on the production of albumin and rise and fall of the albuminuric excretion. The ingestion of large amounts of water, while it enhances diuresis and intestinal peristalsis, and favors gastrointestinal disorders, has little or no effect on the albuminuria in the vast majority of cases. With smaller amounts (up to 35 c.c. per kilogram of body weight daily) there may be slight temporary but not permanent augmentation of the albuminuria. In the treatment of albuminuria *per se* the maximum amount of water taken is of little practical importance unless some advanced heart or kidney trouble, or some gastrointestinal disorder exists; and the minimum amount of water should not for any length of time be less than is required for the intrasystemic osmotic processes.

Psoriasis.—L. Duncan Bulkley concludes that psoriasis is not a purely local disease, but has important constitutional relations. It is not a parasitic disease, in the proper sense of the term; it has no definite microorganism and is not contagious. The immediate skin lesions are probably due to the ordinary microorganisms of the skin becoming pathologic under favoring conditions. It cannot be cured by local treatment, and though this may remove the lesions, they are likely to return. When local treatment appears to cure permanently, the eruption may have been dermatitis seborrhœica, which, in some of its phases, closely resembles psoriasis. Heredity is a relatively unimportant factor, not present in more than one-fourth of the cases and capricious in these. Psoriasis is not a late manifestation of syphilis. It has no one tangible internal cause, but faulty metabolic changes are probably at the bottom of every case, and these may be induced in many ways. The repeated and thorough volumetric analysis of the urine is of great value in guiding the treatment in different cases and at different times. There is no one remedy of universal value in psoriasis, though arsenic is the most generally useful. It can be taken for a long time without harm, if properly given, but it usually is best with other remedies or alternating with them. In acutely developing psoriasis it often acts badly, increasing the eruption. In many cases the proper use of alkalies is of the greatest value. The avoidance of meat or an absolutely vegetable diet is often of great value in treatment, and is sometimes attended with freedom from the eruption. Alcohol must also be avoided. The disorder is an exceedingly rebellious one and prolonged internal treatment—at least two years—is needed. While local treatment is of the greatest value, its temporary success should cause no let up in the general treatment, which sometimes alone relieves the local symptoms. The *x*-ray is a valuable adjunct to local therapeusis, and is sometimes capable of removing chronic lesions by a single application.

Anastomosis of Vessels by the Patching Method.—A. Carrel and C. C. Guthrie describe a method which they have devised for repairing blood-vessels or uniting them to other vessels in the transplantation of organs. The patching consists in closing an opening in the wall

of a vessel by fitting and sewing to its edges a flap taken from another vessel or from some other structure, such as the peritoneum. The anastomosis by this method consists in extirpating a vessel, together with an area or patch from the vessel of origin, the patch being so cut that the mouth of the extirpated vessel is situated in the middle of the patch. The edges of the patch are then fixed to the edges of a similar opening made in the wall of another vessel. The idea is to make the anastomosis in such a way that even in case of slightly imperfect technique resulting in the deposition of fibrin on the lines of suture, the circulation would not be disturbed. They have employed the method in a number of cases of transplantation of kidney and ovary and of simple patching of vessels, in cats and dogs, and though infection often occurred, the circulation in the organs has nearly always been good, and in no case has gangrene of the transplanted organ occurred. If such infection had occurred in an end-to-end or ordinary lateral anastomosis obliteration of the vessel would probably have occurred. The technique is described and fully illustrated. The authors give their conclusions as follows: 1. By the patching method anastomosis of blood-vessels is more safely performed than by the other methods. 2. It prevents the occurrence of gangrene after the transplantation of organs even in case of slight infection. The circulation of a kidney, transplanted with anastomosis of its vessels by the patching method, is good three months after the operation.

The Lancet, November 3, 1906.

Actinomycosis of the Cheek Cured by Iodide of Potassium.—The patient of R. Know was a girl of seven years who came under observation about a month after a swelling had begun to form on the cheek. The trouble had evidently started from inside infection, as abrasions were found on the buccal mucosa caused by two lower molar teeth in a state of advanced caries and with very rough edges. The abscess was opened externally and the pus found to contain the characteristic fungus. The patient was given the iodide in increasing doses until forty-five grains per day were taken. In a month the discharge from the abscess had ceased and her condition was in every way promising. Ten months from the beginning of the treatment she was in good health, the swelling had disappeared, and a firm cicatrix resulted. The author calls attention to the fact that the case shows that infection does not always take place from grain or straw, but may come through food supplies. He notes also that every effort was made to direct the opening of the abscess toward the outside, for fear it might, if allowed to break inside, infect the gastro-intestinal tract.

Infantile Mortality and Goat's Milk.—W. Wright calls attention to the fact that in the countries in which goat's milk is largely relied on as an infant's food, the infant mortality is low. In Italy the infant often nurses directly from the animal. In Norway the milk is placed in a bowl and the child fed therefrom. If the goat is carefully fed there is no odor to the milk. As compared with human milk, that of the goat has more albumin and more casein, and goat's milk shows a lower percentage in these respects than that of the cow. Goat's milk, therefore, more closely approximates human milk than does that of the cow, and for the same reason the curd is less heavy, more floculent, and more easily digested. It is an easy matter to breed the goat when the question is taken up systematically. Finally, the goat is essentially a clean animal. Its feces are practically solid and rolled in balls, thus preventing the possibility of their adhering to the hind quarters. Hence these parts, as also the udders, are always clean. Much of the gross contamination of milk is consequently avoided at the source of supply. The goat is practically immune to tuberculosis, and with but few exceptions the only instances in which this animal has been found suffering from the disease have occurred when they have been housed with tuberculous cows and have obtained their infection therefrom.

So-Called Virulent Syphilis and Its Treatment.—The decline of malignant syphilis has been attributed, says F. J. Lambkin, to first, gradual attenuation of the syphilitic virus; and, second, to improved methods of treatment. Causes which may produce virulent forms of the disease may be poor general physique, living under bad hygiene, malaria, any organic disease, especially renal, alcoholism, and delayed and inefficient treatment. We are in these later days better equipped to treat these cases, as we have methods of introducing mercury into the system which do not upset the digestion and thus deplete the patient. We should always endeavor to ascertain the probable factor in causing the disease in a given case to assume a virulent form and continue in the same groove. We must try to palliate any coexisting disease before we begin specific treatment. The author prefers, under the circumstances named, to give intramuscular injections of metallic mercury in half-grain doses once a week. Sometimes this dose can be halved or quartered. For cases requiring rapid intervention, such as phagedenic chancres, injections of calomel are preferable. Although painful, it is the most soluble mercury salt. Every effort must be made to increase and maintain tissue metabolism. Hot-air baths are a favorite procedure with the author. The patient should take one every second day. Iodide must be given in these virulent cases with circumspection. It should be used intermittently for not more than ten days at a time. For local lesions of the mucous membranes nothing is better than chromic acid and its solutions. To some of the mucous ulcers acid nitrate of mercury is the best application. For phagedenic sores the author uses crude chromic acid under local anesthesia. Its use should be continued until all tissue destruction has disappeared. Charcoal may be used during the separation of the slough and then replaced by iodoform. All large chronic ulcers are to be treated on general surgical principles, rest, cleanliness, opening up all pockets and sinuses, and securing good drainage. For bone lesions we should commence with soothing applications, and if ulceration occurs resort to Volkmann's spoon. Sequestra should be removed early. Ten illustrative cases are appended.

Gastrostaxis.—By this term W. Hale White refers to oozing of blood from the mucous membrane of the stomach. This has been looked on as a vicarious menstruation, but the condition is not confined to the female sex. Many of the cases have been regarded as gastric ulcer. Of the author's twenty-nine patients, all but two were women. The chief symptoms are hematemesis, vomiting apart from the latter, and pain in the region of the stomach. The similarity of these symptoms to those of ulcer is at once apparent, but many of the patients have such symptoms for years, and an autopsy has not revealed any ulcer. The cause of the condition is unknown. Prognosis is good. Differential diagnosis from ulcer is difficult and cannot be positively made unless we have the opportunity of inspecting the gastric mucosa during life or on post mortem. If a patient has not been starved as the result of treatment, the author thinks that with ulcers there is more emaciation. Some cases give a history of chronic dyspepsia, pain after food, and tenderness over the stomach, yet the occurrence of considerable intervals, during which there is no complaint of gastric tenderness, is, perhaps, in favor of gastric oozing. Diagnosis must also include the possibilities of cirrhosis, cardiac disease, and cancer. Treatment must follow along the general lines of the modern cure of cases of ulcer. Epitomized histories are given of the twenty-nine cases above referred to.

British Medical Journal, November 3, 1906.

Huntington's Chorea and Heredity.—In a family coming under the observation of G. S. Mill, the father was a perfectly healthy man, but the mother began to develop symptoms of the disease at the age of thirty, and died at forty-four in great misery. As she died many years ago, the author was, unfortunately, unable to trace the history further back, but she had a brother who suffered from the disease. She had seven children, and of these six were affected as follows: R., now sixty-five, free from the disease, as are also his children and grandchildren. W. (male), disease began at forty, and he died at fifty. A. (female), began at twenty-nine and died at forty; her son, now thirty, suffers from the condition. E. (female), began at thirty and is now forty-two. G. (male), began at twenty-nine and is now forty-nine. C. (male) began at thirty-two and died at forty-four. F. (male), began at thirty and is now forty-five. In all the symptoms have been practically identical. The author states that they commence with a loss of control over the hands. The head is drawn down, and it is with an effort that it is raised, and it wags from side to side. There are slow contractions of the muscles of expression, and the hands and fingers are constantly moving. The gait is

very peculiar, being irregular and spasmodic. The reflexes are much exaggerated. The speech is slow and hesitating. The mind, until nearly the end, is wonderfully clear, and there is great sleeplessness.

Pneumococcic Peritonitis.—The patient of L. E. Ellis was a healthy girl of six years, taken with diarrhea, vomiting, and abdominal pain. On the ninth day of the illness (from the beginning of which signs suggestive of peritonitis had gradually accumulated) a pneumonia was detected. On the eighteenth day of the illness laparotomy was done and yellow-greenish, nonoffensive pus was found in the abdomen. The patient made a good recovery. Examination of the pus showed that it was pneumococcal.

Causes, Sequelæ and Treatment of Pericolic Inflammation.—Details of a series of cases are given by D'Arcy Power. He presents the following conclusions: (1) Pericolitis is not very rare, although it is one of the less common forms of local peritonitis. (2) It occurs in connection with the ascending as well as with the descending colon, but I have seen no case in which it arose in the neighborhood of the transverse colon. (3) The cause of pericolitis may be found within the colon as a result of chronic constipation, in the walls of the colon from ulceration of the mucous membrane, or from the perforation of foreign bodies, outside the colon as a result of injury. (4) Pericolitis ends in resolution, in chronic inflammation, sometimes with extensive thickening of the colon, or in suppuration, which is usually retroperitoneal. (5) The treatment consists in an attempt to prevent the inflammation becoming chronic, and in the early opening of any abscess which may be formed.

Berliner klinische Wochenschrift, October 29, 1906.

A Toxolecithid of Bee Poison.—Morgenroth and Carpi describe experiments made on the properties of the toxin extracted from the poison sacs attached to the stings of honey bees. This, like snake venom and the poison of scorpions, contains a prolecithid having the character of a toxin or amboceptor body which has the property of combining with lecithin to form a specific toxolecithid having marked hemolytic qualities. By adding lecithin to a watery extract of the poison apparatus of bees the hemolytic properties of the latter are greatly increased, and it is possible to produce a body easily soluble in alcohol and salt solution and precipitated by ether, which manifests the characteristic hemolytic power. This substance in distinction to those originally present in the poison presents a marked grade of thermostability. The addition of cholesterin to solutions of this body inhibits the hemolytic action, and when normal horse serum is added to solutions of bee venom plus lecithin the inhibition to the hemolytic power that results depends on the presence of cholesterin in the serum.

A New Reaction for Free Hydrochloric Acid in the Stomach Contents.—Simon proposes the following: A small pinch of pure powdered guaiac resin is dissolved in five c.c. of a mixture composed of ten grains of spirit of nitrous ether and forty grains of alcohol. Several cubic centimeters of this solution, which should be freshly prepared, is layered in a test tube over about five c.c. of the filtered stomach contents. At the line of junction of the two fluids a precipitate of resin at once forms as a grayish ring. If free hydrochloric acid is present this ring in a few seconds becomes distinctly blue, or, if only very small amounts of acid are present, distinctly green. The free hydrochloric acid liberates nitrous acid from the ethylnitrite, and this oxidizes the guaiac resin, thus producing the blue color in the same way as in the well-known test for hemoglobin. Lactic acid in large amounts may give the same reaction, but is never present in sufficient quantities in stomach contents to be a source of error. The author states that the test is just as sensitive as those now in use, notably Günzburg's reaction.

Münchener medizinische Wochenschrift, October 30, 1906.

Observations on the Action of the Roentgen Rays on the Pelvic Organs of Guinea Pigs.—Lengfellner made experiments on guinea pigs to determine the effect of exposure to the Roentgen rays; firstly on the pregnant uterus, and secondly on the ovaries. It was found that exposures of from twenty minutes to an hour made on pregnant animals a few days before term caused either the death of the fetuses or else impaired their vitality to such a degree that they were found barely living when the uterus was opened immediately after killing the animals. It is therefore evident that there is risk in all protracted Roentgen ray exposures of pregnant women, since even if the fetus is not killed it may suffer serious interference with its vital faculties. It was found that the ovaries of both pregnant and nonpregnant guinea pigs also exhibited demonstrable lesions after radiation, and the author further describes an instance in which prolonged amenorrhea was observed in the case of a girl of nineteen years who had been subjected to several exposures in an attempt to secure a satisfactory radiograph of the pelvis.

Deutsche medizinische Wochenschrift, November 1, 1906.

The Diagnosis of Grave Abdominal Contusions.—Schmidt, in discussing this subject, described four cases that came under his observation. Three of these were the result of kicks from horses, and the fourth was caused by a runaway accident. Laparotomy was done in each case, with three recoveries. In analyzing the separate symptoms the author comes to the conclusion that shock, fever, and vomiting are very deceptive signs, since they may be lacking or only slight in even the severest cases. On the other hand, careful and gentle percussion will often reveal dullness due to even small amounts of blood or extravasated fluid, and is always to be regarded as a valuable aid. The greatest importance, however, attaches to the two symptoms of pronounced abdominal tension and tenderness to pressure. If these two symptoms are present to a marked degree and do not subside promptly a serious internal injury must be taken for granted and laparotomy is urgently indicated. The author expresses himself strongly in regard to the use of opium in doubtful cases, severely condemning its administration as long as the diagnosis remains uncertain.

French and Italian Journal

Latent Cancer of the Kidney in a Pregnant Woman, with Congestive and Hemorrhagic Lesions in the Kidney and the Suprarenal Capsule of the Fetus.—René Gaultier reports this case. The patient was a seamstress, thirty-five years old, pregnant seven months. She entered the hospital on account of a cough which was sometimes accompanied by bloody expectoration. The symptoms had begun two or three months before. The dyspnea, which had been slight at first, increased daily, and at the time of entrance caused paroxysms simulating those of asthma. The patient had always been strong and vigorous up to this time. She had had two normal deliveries. The urinary symptoms were negative as far as a renal tumor was concerned. There was neither albumin nor blood. At no time did the patient complain of lumbar pain. The clinical picture was a classic one of a tumor of the mediastinum. The patient died in an attack of dyspnea. Autopsy revealed the presence of a renal cancer. Metastases to the pleura, lungs, and ganglia had given rise to the symptoms. The tumor of the kidney was the size of a hen's egg. It involved the right kidney. Microscopical examination showed it to be an epithelioma. In the kidney and suprarenal capsule of the fetus were noted intense congestion and numerous hemorrhagic foci.—*Annales de Gynécologie et D'Obstétrique, August,* 1906.

Intestinal Origin of Pneumonia in Man and Animals.—A. Calmette, P. Vansteenberghe, and Grysez declare that the pathogeny of the pneumococcic infection of the lung is still very obscure. Up to the present time the attempts to reproduce it experimentally in animals in the laboratory have failed. These investigators used a virulent bacillus which they had isolated from the expectoration of a patient in the second day of pneumonia. The animals experimented upon were the mouse and the guinea-pig. The cultures were introduced by means of an esophageal sound into the stomach of the animals. After twenty-four hours the animals were killed. The lungs were found to be strongly congested and the pulmonary parenchyma contained the pneumococcus in abundance. Some of the cultures had been blackened with smoke, and in such cases the lungs showed masses of carbon. In no case, however, were observed the histological lesions so characteristic of lobar pneumonia in man. These observers next exposed the animals experimented upon to sudden cold. The passage of the microbes into the lung took place, with intense congestion of these organs, but nothing more. These experiments show that raw food which is suspected to be contaminated with pathogenic organisms capable of traversing the intestinal mucosa and of invading the organism, should not be eaten.—*La Presse Médicale,* September 1, 1906.

Book Reviews.

Tuberkulose-Arbeiten aus dem Kaiserlichen Gesundheitsamte. Heft 5. Berlin: Julius Springer, 1906.

This publication is an official description of some of the German sanatoria for tuberculosis, containing plans of buildings, statistics of patients treated, etc. It will be of interest especially to those who have to do with sanatorium management.

Mallattie dell' Orecchio, del Naso, e della Gola. Pel Dott. Tommaso Mancioli. Milano: Ulrico Hoepli, 1907.

This manual, which is of pocket size, covers the general field indicated in its title. It follows along familiar lines and is well illustrated. It will serve a useful purpose for the medical students and practitioners of the country in which it is published.

A Manual of Otology. By Gorham Bacon, M.D., Professor of Otology in Columbia University, New York. Fourth Edition, revised and enlarged, with 134 illustrations and eleven plates. Philadelphia and New York: Lea Brothers & Co., 1906.

This manual has already been favorably noticed in this column. The author's revision has added about forty pages. Among the new topics presented are osteomyelitis, primary jugular bulb, thrombosis, superative inflammation of the labyrinth, etc. The paragraphs relating to leucocytosis, lumbar puncture, and the treatment of facial paralysis have been amplified. The importance of examining pus from aural discharges has led the author to add an appendix on the method of preparing smears, making cultures, and conducting experiment inoculations. Four editions amply testify to the fact that the work has attained its primary purpose as a student's textbook.

La Question Sexuelle; Exposée aux Adultes Cultivés. Par Auguste Forel, Ancien Professeur de Psychiatrie a l'Université de Zurich. Paris: G. Steinheil, 1906.

The subject treated in this volume is of prime importance, and it is here handled in a way that will commend itself to the educated reader. The problem is studied from several points of view, scientific, ethnological, pathological, and social; at the same time the erotic details, found in so many of the books dealing with this subject, are omitted. The first seven chapters are on the natural history and psychology of the sexual life; the eighth chapter deals with the pathology of the subject; and the remainder of the volume discusses the problem from the social side. In this last part are chapters devoted to the relation of the sexual problem to religion, to law, to medicine, to ethics, to politics, to economics, to pedagogy, and to art.

Textbook of Medical Jurisprudence and Toxicology. By John J. Reese, M.D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania; late President of the Medical Jurisprudence Society of Philadelphia. Seventh Edition. Revised by Henry Leffmann, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania; Pathological Chemist to the Jefferson Medical College Hospital. Philadelphia: P. Blakiston's Son & Co., 1906.

The new edition of this well-known book does not differ materially from its predecessors. Such additions and amendments have been made as were necessary to bring it up to date; among the additions being reports of cases of poisoning by potassium chlorate, acetanilid, carbon monoxide boric acid, resorcinol, wormseed, and formaldehyde. It is a good textbook for the student, and is probably the most generally useful and complete of the smaller works dealing with the subjects of medical jurisprudence and toxicology.

Operative Otology, Surgical Pathology and Treatment of Diseases of the Ear. By Clarence J. Blake, M.D., Professor of Otology in Harvard University, and Henry O. Reik, M.D., Associate in Ophthalmology and Otology in Johns Hopkins University. New York and London: D. Appleton & Co., 1906.

This book is designed for all who pay attention to otology, both practitioners and students. It is a record of personal experience rather than a review of literature, discussing in particular the causative conditions of surgically remediable diseases and the surgical measures best applicable to their treatment. Structural descriptions have been limited to those of surgical importance, pathological conditions have been emphasized, and the detail of surgical procedure has been confined to that acceptably applicable to the condition presented. The foregoing statements taken from the preface fairly describe the scope of the work. Coming as it does from two men so well known as are the authors, its pages will command attention. The appearance of the work is unusually attractive. It is well printed on good paper and will undoubtedly find its way to the shelves of every aural surgeon's library. The respective chapter titles are Surgical Anatomy of the Temporal Bone and Adnexa, Aseptic Technique, Diseases of the Auricle and External Auditory Canal, Diseases of the Tympanic Membrane and Tympanum, Possible Complications and Consequences of Suppurative Otitis Media, Middle-Ear Operations, Mastoid Operations and Adventitious Aural Surgery. An appendix is added which treats of various aural matters not included in the foregoing chapters, such as the value of early paracentesis, description of the algesimeter, an instrument for estimating the degree of tenderness over the mastoid, hospital statistics, localizing symptoms of brain abscess, etc.

A Manual of Medical Treatment, or Clinical Therapeutics. By I. Burney Yeo, M.D., F.R.C.P., Emeritus Professor of Medicine King's College, London; Consulting Physician to King's College Hospital, etc. Revised Edition, with Formulæ Adapted to the Standard of Strength of Preparations Employed in America, by Oscar Oldberg, Pharm.D., Dean of the School of Pharmacy, Northwestern University, Member of the Committee of Revision of the Pharmacopœia of the United States. Fourteenth Edition, Twenty-second Thousand, Vol. I., Vol. II. Chicago: W. T. Keener & Co., 1906.

Dr. Yeo's two conveniently-sized volumes comprise what is undoubtedly one of the most practically useful treatises on the management of medical diseases ever put into the hands of practitioners and students. Written in a style charmingly easy yet not discursive, the entire field of practice is covered and the author's funds of experience are drawn upon to furnish telling illustrations and practical points. The present edition, as the title indicates, is intended for use in this country, and the work will no doubt enjoy the same popularity here that it has in Great Britain. In looking through the text one sees much to admire and but little to criticise. Here and there a flaw is discernible, however; for example, in Vol. II., p. 754, in speaking of intravenous infusion, the author states that "the pinch cock is opened and the whole quart is infused in two to four minutes," which is certainly too rapid, while the instruction that the solution is to be "used warm" is a very insufficient direction on the important point of the temperature of the saline fluid. For the most part the work is well abreast of the times and the recent methods have been incorporated, yet under the treatment of leukemia we find no mention of the use of the *x*-ray. Yeo is not a very ardent believer in surgery in the treatment of primarily internal diseases; for example, he deprecates the attempts to reestablish portal circulation by operative means in cirrhosis of the liver, and discredits the value of surgical measures in the treatment of exophthalmic goiter. The prescriptions appended to each chapter are excellent examples of rational therapeutics, and the fact that they are in the earlier sections written without abbreviations should prove helpful to the neophyte. But it would take too much space to catalogue the many excellencies of this most serviceable work, and perhaps the fact that it has required fourteen reprintings in less than that number of years is a more practical index of its value than any tribute from the pen of a reviewer could be.

The Operative Treatment of Prolapse and Retroversion of the Uterus. By J. Inglis Parsons, M.D., M.R.C.P., M.R.C.S., etc. New York: William Wood and Company, 1906.

This little book is a record of the personal experiences of the author in treating these conditions and contains only those procedures which have given him the best results. Some interesting and novel methods of treatment are described, particularly one devised by the author for uterine prolapse. For the purpose of producing a contracting adhesion in the cellular tissues of the broad ligaments he injects a solution of quinine directly into the latter through the vagina by means of a long hypodermic needle. The claims for this operation are brevity, painlessness, no shock or hemorrhage. Until the adhesions have formed the organ must be supported by a cup and stem pessary. In one hundred cases treated in this fashion a recurrence was stated to have occurred in only 5 per cent., and this in very advanced cases. There are a number of other unique procedures described, among them a "constant curette" for retroversion with metrorrhagia, which consists of a pair of electrodes, one being placed in the uterine cavity. It is to be feared that some of the author's suggestions are interesting rather than practical.

Society Reports.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, Held at Hot Springs, Ark., November 6, 7, and 8, 1906.

DR. J. HENRY CARSTENS OF DETROIT, PRESIDENT, IN THE CHAIR.

THE scientific work was divided into medical and surgical sections.

Addresses of welcome were delivered by Mayor George R. Belding, in behalf of the City of Hot Springs; by Dr. S. P. Collings, in behalf of the medical profession, and by Hon. Charles G. Greaves.

These addresses were responded to in behalf of the association by Dr. J. M. Mathews of Louisville, Ky.

The Future of the Medical Profession.—Dr. J. HENRY CARSTENS of Detroit, in this, the presidential address, referred to the early history of medicine, and said that great advances had been made during the last thirty-five years. Men of humble origin, but with the right kind of brains, who had an opportunity to enter the profession, had done much to clear up some of the moot questions. By gradually increasing the requirements only the best minds had been able to enter the practice of medicine. Only men with the best mental caliber should be allowed to practice medicine. The second and third-class brains should take up some other calling. Referring to organizations, he said that as the country was large it was desirable to have larger societies in different parts of the country, but that the American Medical Association should not establish a rule and force certain States to join together in the form of a branch; it should be left to the members to organize any kind of way they desired. If a certain branch in the East or the West or the South formed an organization, all right. If they ran over the border into some other branch, what was the difference? We could have a Mississippi Valley Society, a Southern Society, or a New England Society, and still any member of the American Medical Association should have a right to belong to any one or all of them. He was sure that at the next meeting of the American Medical Association this point would be settled. The great men of the medical profession were working unselfishly for the good of the race. The moral tone had been wonderfully elevated. Liars in the medical profession had diminished materially, and with a higher standard he hoped they would soon be eliminated entirely. There were still some liars in the profession, and in his experience there were few among the young members. Some of these liars were of the pious order. They regularly attended church. They were very busy; they could not get there until just when the prayer began; they could only walk half-way down the aisle and stand so that the whole congregation could see them until the prayer was finished. Another of these pious varieties went to church late, walked to the front pew, and dropped down like a bag of flour, with the air of utter exhaustion, the people ever ready to exclaim, "Poor fellow, he works so hard." Another variety of liar was the man who claimed to be a specialist, but who, if he was a surgeon, treated typhoid fever and pneumonia if the patients were wealthy. He would even treat measles and cholera infantum if the grandfather was a millionaire. Physicians were and should be the great teachers of the race; hence they should have broad views of life and a thorough knowledge of all kinds of things. At present they must educate the more intelligent people of the community. But they must themselves be of broad education, and the speaker made an eloquent plea for thorough general knowledge. The days when the medical man only knew something about drugs, or how to treat some diseases, were past. The physician should take an interest in everything that affected the community in which he lived. He should be first and foremost and all the time a physician, but still he should be informed on all kinds of questions. He should thoroughly understand the workings of the inner mind, quickly grasp the weakness and the strength of an individual's mentality, and thus be able to shape the course of the individual and of the community.

Some Mental Symptoms Due to Disease of Nasal Accessory Sinuses.—Dr. J. A. STUCKY of Lexington, Ky., read this paper. (See page 820.)

Typhoid Fever.—Dr. I. H. C. COOK of Hattiesburg, Miss., read a paper on this subject, in which he described the modes of conveyance, and discussed the morbid anatomy, symptomatology, complications, intercurrent diseases, diagnosis, prognosis, and treatment of the disease; likewise the treatment of complications.

Metabolic Aspects of Overfeeding and of Underfeeding.—Dr. Ralph W. W[illegible] of C[illegible] pointed out that by the term overfeeding or forced feeding was meant the giving of an amount of food which furnished the body more energy than it needed, utterly regardless of whether the addition be in the form of proteid, carbohydrate, or fat. The errors in diet, which most of us unfortunately committed, were productive of various disorders as a result of the overtaxing of the digestive, absorptive, assimilative, or excretory organs with excessive products of metabolic activity, and of a series of peculiar derangements pointing to a condition of undernutrition. He referred to the obese, diabetic, and gouty subjects, on the one side, and the neurasthenic, neuralgic, and chlorotic patient, on the other. He treated the subject of overfeeding only as a therapeutic measure and not as a causal factor in disease. Addition of an excess of food, in the form of fat or carbohydrate, exerted, even when given in large amounts, only a slight increase in the energy relations of the system. This applied to an immediate increase in the oxidative processes and not to the later effects of the reserved fat or carbohydrate. Only a part of such excess was burned up in the system, the chief part being stored in the various depositories subject to the checking orders of the system. On the addition of fat to the diet, almost the total excess of energy was turned to the advantage of the body, not in the form of increased energy, but rather in the form of latent energy as a deposition of fat. Zuntz had proven that of 100 grams of fat increase in the diet, 97-98 grams were stored up. With the carbohydrates the relations were not quite so high. A loss of 10 per cent., according to Zuntz, was observed in the total energy available from an increase of carbohydrate. Moreover, the conversion of the carbohydrates into fat was accompanied by some loss of heat. An increase of proteid in the diet raised, on the contrary, the general tissue metabolism, as evidenced by the increased oxidation, far above the normal standards and far above that which could be traced to the activity of the bowel. This primary increase in the oxidative processes, which was effected by a meal rich in proteids, lasted for eight to ten hours. This fact might be expressed more briefly in the statement that every addition of proteid increased the proteid decomposition, the system soon adapting itself to a new equilibrium. It was erroneous to refer every loss of nitrogen to an increased decomposition of body proteid. There was no reason for supposing that tissue proteid was decomposed in any different way than was food proteid. We were not justified in assuming that the products of tissue metabolism were normally or abnormally any different from those of food metabolism under the same conditions. The point of all that was that the increased nitrogen excretion observed under certain conditions might be referable to the proteids of the food and not to those of the tissues. Dr. Webster spoke of proteid-sparing; flesh and fat; increased calorie consumption; increase of nitrogen; indications for forced feeding, and discussed underfeeding. The following general effects of a long-continued underfeeding were to be

recognized: (1) The proteid decomposition sinks up to a certain point, beyond which further decomposition is serious. The body at this point adapts itself to a fairly permanent equilibrium, as is shown by the fact that not so much body proteid is lost in the later periods as in the beginning. Nitrogenous equilibrium can be maintained, as Voit, Rumpf, Siven, and others have shown, on a lower proteid addition than is customary, provided the calorie need is covered. (2) Long-continued underfeeding, aside from very slight degrees of calorie deficit, lead to constant loss, not only of body fat, but also of body proteid, immaterial whether the proteid intake be large or small. The absolute height of the N-excretion depends on the amount of proteid, but the maintenance of nitrogenous equilibrium is independent of the amount as a balance is established to suit the intake. A calorie poor diet, which is rich in proteid, may protect the N-loss or may even raise it for a time, but the final result will be the same as if all parts of the diet were simultaneously reduced. (3) Whenever the addition of food lessens the calorie deficit, a building up of cell material takes place, although the calorie need at this time may not be completely satisfied. This condition lasts until the body is accustomed to the new equilibrium, when N-loss begins anew unless the calorie need is absolutely covered. The author pleaded for a more scientific and more intelligent recognition of the advantages and disadvantages of dietary, bringing about a more normal condition of patients, whether they be racked with disease or suffering with malnutrition, excessive or deficient.

Intestinal Obstruction; with Observations on Its Surgical Treatment.—Dr. H. O. Walker of Detroit, Mich., reported eleven cases of intestinal obstruction in which he had operated since May 16 of this year. Seven of them were chronic, two of which became acute, making practically six acute and five chronic cases of obstruction of the bowel. Six were of the small intestine, five of the large. Two of these cases involved both small and large intestines. The mortality was five, making a percentage of 45.5 per cent., a much better record than was usually obtained, yet he firmly believed that had he seen these cases earlier there would have been little doubt that three of the five who died could have been saved, showing that the great mortality, as Moynihan puts it, was "the mortality of delay." The advantage of early diagnosis and early operation could not be emphasized too strongly. While collapse might be an early symptom of intestinal obstruction, it was not characteristic, but indicated severe peritoneal nerve irritation. Pain was sudden and agonizing in character, which was also an evidence of severe peritoneal irritation, described as colicky with exacerbations, and was persistent until general peritonitis or intestinal gangrene supervened. Vomiting was almost always present at the onset, was incessant and plentiful. The character of vomit was as follows: (1) Stomach contents; (2) bile and mucus; (3) stercoraceous, either with or without fecal odor. Liquid fecal vomit was a late symptom and had a very foul odor, as was observed in case six of internal strangulated hernia at a point in the lower ileum, caused by a back action peristalsis. Abdominal rigidity was not an early symptom in intestinal obstruction such as was found in appendicitis or other localized peritoneal inflammation. Rigidity and tympany were very late symptoms. Peristalsis could be seen occasionally in emaciated subjects with thin abdominal walls where chronic obstruction of the bowel existed.

Dr. T. J. Watkins of Chicago agreed with the essayist as to the importance of early diagnosis and of advocating early operation. His experience led him to believe that early operations for intestinal obstruction were almost certain to result in cures, whereas late operations were almost certain to result fatally. He recalled eight acute cases upon which he had operated in the last two years. Six were operated on within six or twelve hours after obstruction had taken place, and all recovered. The other two were operated on late, and both died.

Dr. Edwin Walker of Evansville, Ind., referred to one cause of delay in operating on cases of intestinal obstruction—the use of cathartics. Cathartics were very much overrated remedies. He had occasion last year to look up the subject, and was impressed with the ignorance of the general profession as to the action of cathartics and the method of prescribing them. In cases of intestinal obstruction cathartics were productive of much harm. In fact, in his judgment there were few intestinal diseases of any kind that were benefited by cathartics.

Dr. F. F. Lawrence of Columbus, O., said the time when the physician should not use cathartics was when intestinal obstruction was suspected. If there was a volvulus, an intussusception, obstruction by bands, he thought cathartics would favor intestinal peristalsis, intestinal perforation, and a funeral. The placing of a patient with intestinal obstruction in the knee-chest or Trendelenburg position, and rectal inflation with air, oil, or water, were equally pernicious.

The subject was further discussed by Drs. A. H. Cordier of Kansas City, Mo.; Channing W. Barrett of Chicago, and J. Henry Carstens of Detroit, all of whom emphasized the importance of making an early diagnosis and of instituting operation at the earliest practicable moment thereafter.

Migraine.—Dr. C. S. Chamberlin of Cincinnati said that after a very careful and fairly extended study of the treatment of migraine, which had included the use of a great number of remedies and combinations of remedies recommended by various writers on the subject, as well as those which his own ingenuity had evoked, he had come to the conclusion that Rachford's plan of treatment was the only one which was not injurious to the patient and which could be depended upon for relief in most cases, and for cure in a considerable ratio of chronic cases. This treatment consisted in the daily administration of the following prescription:

Sodii sulphatis (dry)	30 grains
Sodii salicylatis (from wintergreen)	10 grains
Magnesii sulphatis	50 grains
Lithii benzoatis	5 grains
Tincturæ nucis vomicæ	3 drops
Aquæ destillatæ	ad 4 ounces

This preparation was put up in siphons and charged with carbonic acid. Occasionally Dr. Rachford made some slight variation in the formula, but, as a rule, adhered to that which was here given. As this form of dispensing the prescription was not only very inconvenient, but expensive to a prohibitive degree to most persons, he determined to try it in the form of a granular effervescent salt, and had a quantity manufactured for experimental purposes. He had dispensed fully one hundred pounds of this granular effervescent salt during the last three years, and was convinced that the prescription in this form was fully as efficient as in the more expensive form of a carbonated solution.

The Danger of Dust as a Cause of Tuberculosis.—Dr. George Homan of St. Louis contributed a paper on this subject, in which he submitted the following points: (1) That efforts toward the eradication of human tuberculosis will fail which do not take full account of household dust as a factor in the dissemination of that disease; (2) that scientific tests have shown that the seeds of pulmonary tuberculosis, harbored within doors in the dried state, are capable of retaining their effective vitality for prolonged periods of time; (3) that any method or procedure employed in inhabited buildings which causes dust to be disseminated must be considered as tending to spread the seeds of consumption; (4) that hotels, clubs, theaters, office buildings, schools, churches, and business establishments generally should be required by law to introduce

and operate dustless methods of cleaning. This part of their mechanical equipment should be held as necessary as provisions similarly made for warming, ventilation, and for fire protection and fire escape. The employment of dustless methods in private residences is urged as being equally imperative for the control and suppression of all forms of tuberculous disease.

Retroversio-Flexions in Their Relation to Pregnancy.—Dr. CHANNING W. BARRETT of Chicago said the accompanying diseases of retrodisplacement might cause sterility, but this was by no means constant. What might be expected from those cases in which pregnancy took place or in which retrodisplacement followed pregnancy? There was apt to be an increased displacement, with aggravation of symptoms, and then one of four things might occur: (1) The uterus might return to normal position and the symptoms be relieved or disappear; (2) abortion might and frequently did follow; (3) incarceration might take place, causing abortion, retention of urine, sloughing of portions of the bladder, peritonitis, etc.; (4) pregnancy might continue to term, with the uterus still retroflexed, causing only moderate, mild, or almost no symptoms. This condition might become a complication of labor. The treatment to be advised should be based upon the present conception of the value of different methods of treatment for retrodisplacement; of the danger or absence of danger of radical cure; of the tolerance of pregnant women for an operation; of the value of the life of the child, and, lastly, the method of operation. It must not be based upon a conception of these matters fifteen, ten, or even five years ago. If we could make a laparotomy fairly safe; if this danger was only slightly increased in the pregnant woman; if the rights of the child were recognized, and an operation could be performed which prevented the possibility or probability of a return of the displacement after delivery, then would cases of beginning incarceration or threatened abortion be operated upon early. Last-resort surgery in this as in other conditions would be less popular. The writer called attention to the early replacement of the uterus in cases of retroversion, retroflexion, and the holding of the uterus with a pessary, if necessary; to the value of an anesthetic; to the knee-chest position, etc. In cases of beginning incarceration he condemned the practice of producing abortion in the interests of the child, and likewise condemned the method of puncturing through the posterior cul-de-sac in the interests of the mother, saying that the puncture might be so located as to be equivalent to rupture of the uterus into the peritoneal cavity. In the light of our present-day aseptic technique, the tolerance of pregnant women to operation, and our present methods of permanently curing retrodisplacement without creating new pathology, he entered a plea for more early and efficient treatment of these cases. Ventrosuspensio-fixation was condemned. To operate upon these cases when most advantageous to the mother and child, the operation must offer the following safeguards and advantages: (1) It must be safe for the mother; (2) it must decrease the fetal mortality; (3) it must insure or promise a permanent cure for the retrodisplacement. If these conditions were secured, instead of pregnancy being a bar to an operation, it might at times furnish an urgent argument for an operation. The writer briefly reviewed his method of operating for retrodisplacement as giving the above advantages. Two cases were described illustrating the necessity for operation, one of which was a case of extreme incarceration, and one of early pregnancy manifesting symptoms of abortion in which there were adhesions and an ovarian cyst.

The paper summed up the writer's position in the following conclusions: (1) Retroversio-flexion is a pathological condition worthy of appropriate treatment, operative or nonoperative; (2) pregnancy may be the means of cure of retroversio-flexion, but may, on the other hand, seriously complicate the condition; (3) the retrodisplaced pregnant uterus should be replaced as soon as possible, and, if necessary, held in position by means of a pessary; (4) a retrodisplacement during the early weeks of pregnancy that cannot immediately be replaced should be supervised and efforts made to assist its return to a normal position as growth advances; (5) an irreducible retrodisplaced pregnant uterus that shows beginning signs of intolerance or incarceration should have a radical operation for the retrodisplacement rather than be emptied or punctured; (6) in cases of inevitable abortion, the uterus should be emptied and the retrodisplacement corrected, if possible, the radical operation following later, if necessary; (7) cases of marked incarceration should have the benefit of abdominal section unless abortion is inevitable; (8) cases operated upon should have the radical operation for the retrodisplacement if the conditions are such as to warrant its performance; (9) should a retrodisplacement correct itself, or be corrected during pregnancy without operation, it should be carefully supervised after confinement with a view of permanently correcting the malposition.

Toxemia of Pregnancy.—Dr. D. M. HALL of Memphis reported a case of toxemia of pregnancy, and in reviewing it said there were several unusual features about it. There was a clear history of an attack of uremia with the usual symptoms of edema of the lower extremities, suppression of urine, albuminuria, headache, blindness, and convulsions. Several years later a similar attack occurred during the eighth month of pregnancy, but whether this was uremic or eclamptic was questionable. Later on an attack came on suddenly during the second month of pregnancy. This attack was accompanied by nausea, vomiting, headache, intense aching and restlessness, suppression of urine, albuminuria, diminution of urea, and acute splenitis, but no edema, blindness, or convulsions. During the eighth month of this pregnancy there was a sudden attack of nausea, attended by vomiting, intense aching and restlessness, pain and tenderness over the liver, lessened quantity of urea and urine, but no splenitis, headache, blindness, albuminuria, or convulsions.

Blunt Dissection in Plastic Gynecological Operations.—Dr. T. J. WATKINS of Chicago said the advantages usually claimed for blunt dissection with scissors over the method heretofore in use of denuding in strips were, *first*, that very much time was saved; *second*, raw surfaces were made which would give firmer union. The operator got down into muscular and connective tissue much better than by denudation; *third*, there was less hemorrhage.

Pubiotomy and Its Relative Indications.—Dr. E. B. MONTGOMERY of Quincy, Ill., said that his interest in this operation had its beginning from the fact that he was obliged to do it in 1903 to enable him to deliver a child which was impacted in the pelvis in a mentoposterior position. Examination of the literature of the subject showed him that no such procedure had ever been resorted to in this country for such a condition, nor had a lateral section of the pubis for any condition before been made on this side of the Atlantic. Satisfied with the outcome in this case, he began a thorough investigation of the literature of the operation of Gigli, and presented this in a paper before the Obstetrical Section of the Fifteenth International Medical Congress, held in Lisbon, in April of this year. The results in the 134 cases collected by him from thirty-five different operators were uniformly favorable, in that there were no deaths in cases not previously infected, and all patients recovered with perfect union of the bone and with perfect gait. An indication other than contracted pelvis for the performance of pubiotomy was the occurrence of an impacted mentoposterior face presentation in which a change of position could not be affected by the usual procedures. In the case reported by the essayist a lateral section of the pubis was done, and labor terminated by delivery of a living child with forceps. The mother made an excellent recovery.

Operative Work for Hypertrophied Prostate.—Drs. Bransford Lewis and C. E. Burford of St. Louis contributed a joint paper on this subject, cited illustrative cases, and exhibited a number of interesting specimens. They presented the following conclusions: (1) Prostatic cases, if correctly estimated and judiciously treated, are now among the most satisfactory that seek the aid of the surgeon; (2) diagnosis, both accurate and comprehensive, is essential to the attainment of such success and satisfaction; (3) not all cases of enlarged prostate produce obstruction; (4) not all cases, even though producing obstruction, require operation; (5) not all cases that are producing obstruction and do require operation demand the same operation; (6) not all cases of prostatic obstruction are produced by enlargement or outgrowth; some are produced by definite contraction of the vesical neck, no hypertrophy being present. It is impossible to determine such conditions by palpating per rectum only; (7) the retrograde cystoscope is the most serviceable aid attainable in determining these questions, in respective cases, hence its value in this work is inestimable; (8) experience proves that neither advanced age, depression of health, nor disease of the heart or kidneys debars the patient from the hope of operative relief. Operation reclaims many, even after they have suffered uremic attack; (9) the longer required operative measures are postponed the greater the likelihood of establishing spreading infections and renal involvement, conditions much less amenable to surgical relief than simple obstruction at the vesical neck; (10) three weeks should be sufficient to demonstrate how much may be expected from palliative treatment, after which any operative treatment necessary should be carried out as soon as possible. Delays are dangerous.

Clinical Psychology.—Dr. Frank Parsons Norbury of Jacksonville, Ill., delivered this, the address in medicine. In all ages, he said, man had sought to solve the mysteries of his own ruling mind. The researches of to-day had translated the science of mind from terms of the metaphysician with its confusing verbiage to words that signified something by defining the facts of physiological psychology, psychophysics, and clinical psychology. Mind to-day was studied from the basis of the general law laid down by James, namely, that no mental modification ever occurred which was not accompanied or followed by a bodily change. The brain itself did not act (it is a passive organ), but reacted to stimuli through the peripheral sense organs, thus creating a reflex either in the sensory, motor, or higher psychical cells. Psychology endeavored to study these reactions. Herbert Spencer, in his "Synthetical Psychology," laid the foundation for these studies both normal and morbid. Drs. Hughlings Jackson, Charcot, Mercier, Janet, Wundt, Maudsley, Wernicke, Kräpelin, and others had applied these principles to clinical medicine. Speculative psychology had no place in the modern new psychology. Physiological psychology, aided by the coordinate science of physics, had overcome the dissatisfaction growing out of introspective psychology. It had raised the physiological unit, as stated by Mercier, namely, "That a nervous process which, when transmitted to muscles, issues in a movement, and is accompanied by a mental state," to the highest power, as shown in conduct. Conduct was the criterion of soundness or unsoundness of mind. It was the product of innate character; of environment, of experience, and numerous other modifying conditions.

Refined methods of analysis applied in the study of sensation, of perception, of memory, of thought, of feeling, and of the disorders of the will revealed mind in its constitution. In analytical study it was necessary to note negative as well as positive results. These methods applied to the borderline anomalous mental states, viz., the neurasthenic, the psychosthenic, the hysteric, the epileptic, enabled us to define their full clinical significance. We should follow the clinical methods of Janet in studying these very varied mental anomalies. A clinical résumé of these states was given, emphasizing Janet's dictum, that we must know well the patient, his life, his education, his disposition, his ideas. We must study his acts, his words, written and spoken, in formulating a basis for diagnosis. Heredity was not considered in these studies with the same degree of insistence as that advocated by Morel.

Therapeutic methods resolved themselves into the personality of the physician, his consideration, patience, and earnestness; his ability to take a broad educational view of the whole subject and apply wholesome, helpful methods both in the physical and mental considerations. In no place in our therapeutic art did we find a greater call for the highest application of educational means and methods than in the treatment of nervous disorders, as found in the psychoneuroses. The educational growth of character was imperative. Moral education preceded mastership in every act, because the training which mastery involved reacted upon character, gave it steadiness and solidity. Educational methods alone would not give the results; we must build up, overcome the fatigue bodily, intellectual, and emotional. This required fat and blood, strength and equipoise. The connection between sane living and sound work was a psychological and physiological necessity.

Surgical Principles and Theories.—Dr. F. F. Lawrence of Columbus, O., delivered this, the address on surgery. He said that surgery was either an art founded upon exact science, or it was a gigantic fake founded upon empiricism. Every science was and must be founded upon principles which were as enduring as truth. Every principle, every truth must be preceded by theory, which was only another word for ideal. To make our theories or ideals conform to truth, and exemplify a scientific proposition, was to convert that theory or ideal into a fact. To sacrifice on the altar of personal vanity or ambition one jot or tittle of truth or science was to sacrifice the entire principle. Empiricism had been the foundation of quackery from the earliest days, and to encourage, practise, or teach any of our surgical methods empirically was to justify and father quackery. It was unreasonable, therefore, to expect that any man could put into practice a scientific principle if he knew not a thing about any of those sciences upon which surgery rested, namely, philosophy, anatomy, physiology, pathology, psychology, embryology, and biology, together with those collateral branches, chemistry, histology, bacteriology, and therapeutics.

The human body should be viewed as a machine. Its surgical or medical repair should be based upon the idea of the province of a thorough mechanism. There was no part of the body which was not constructed on a true philosophy, and its repair required a knowledge of natural philosophy. All the other ologies and osophies were useful only in determining the need and character of repair, hence any surgical effort not philosophical was unsurgical. Teaching of the principles upon which the treatment of a surgical case was based should be the most attractive as well as the most important part of the physician's efforts. To accomplish this methods of teaching and practice should be consistent, and both could be revised with benefit. Traumatism should be given the consideration due its importance as a factor in infection. Fads and fancies should not command the respect of the profession, and nonessentials should not be given prominence in teachings. Surgery should be taught as an art which rested upon exact or scientific principles, hence one in which philosophy was equally important with pathology, and anatomy of greater import than the microscope, although the latter was a necessary adjunct. A man might be a good physician but a poor surgeon. The converse, however, was not true, for a man could not be a surgeon who was not a good physician; hence a special qualification might be advantageous. Hospital construction and hospital management should be consistent with the teachings of hygiene, segre-

gation of patients, isolation of infected cases, space per bed, and all minor details should be worked out by men trained in sanitary science instead of by architects and other laymen. Endowments for the working out and proving surgical principles and honors to the workers might be worthy of serious consideration. The one great principle, that a surgical condition was always surgical, should be constantly emphasized to the end that *dernier resort* operations might cease to be the bane of the profession and the boon of the undertaker.

Present Operative Necessities for Cure in Tuberculous Orchitis.—Dr. Charles E. Bennett of Fort Wayne, Ind., in summing up, said: (1) To be sure of a cure, all that is infected with tuberculosis must be removed; (2) primary invasion statistics are so variable that the operator should consider his testicular tuberculosis as primary unless other foci are found that disprove the supposition; (3) the modes of infection are so many that the surgeon should be on his guard constantly. This is especially true in infection during the act of cohabitation; (4) the desexation bugbear should be entirely removed from the patient's mind, and instead hope should be given him for a continuation of his copulative power; (5) injections of paraffin in producing artificial testes are good from a cosmetic standpoint, and good also from the great satisfaction they give the patient. It is entirely devoid of danger when properly done; (6) operations, when indicated, should be immediate, followed by prophylactic and hygienic treatment until the maximum improvement is gained.

The author gave the operative technique used by him in double orchovasectomy, and showed how comparatively easy it was to extract the vas deferens from along its course even down to the ejaculatory duct region. He reported two cases to illustrate the postoperative benefit gained. One of them was injected with paraffin, according to the Gersuny method of small quantities at a time, with frequent sittings. The artificial testes were, from the standpoint of size, location and permanency, all that could be desired.

Head Injuries.—Dr. William Britt Burns of Memphis reported three cases of head injuries which had a bearing especially on injuries of the middle meningeal artery.

Nonlithogenous Obstruction of Biliary Ducts.—Dr. A. H. Cordier of Kansas City, Mo., said that for years gallstones were the only condition that received much attention from the pathologist and surgeon. Further clinical study, operative and post-mortem findings, had demonstrated beyond doubt that gallstones were the result of a preexisting disease of the ducts and gall-bladder, and that in the great majority of instances this disease was of bacterial origin. It was claimed that those of sedentary habits, and insane patients were especially prone to the formation of gallstones, and that at post-mortems a large number of gallstones were often found in patients who had died of other diseases, and who during life had not manifested any symptoms of gallstones. This latter statement was used by some even to-day as an argument against the surgical management of these cases. Gallstones did not form in a few days; they were late manifestations of a preexisting disease. The gallstone cases with which the profession was familiar presented typical histories. The author spoke of stricture of the common duct, saying that it might have its origin in the long incarceration of a stone, the stone later passing into the duodenum or ulcerating into the bowel. In that event no stone would be found at the time of operating. Numerous instances of this kind had been reported. Drainage of the gall-bladder externally would become less and less a procedure resorted to as surgeons appreciated more that the gall-bladder, like the appendix, when full of strictures, was best taken care of in a specimen bottle filled with a good preservative.

There was a class of cases presenting an obscure train of symptoms pointing to the vicinity of gall-bladder and biliary ducts as their source. For instance, a vague sense of uneasiness; occasionally painful spells lasting a few minutes, with attacks of indigestion and painful flatulency. At the operation no stones were found; no stricture of the ducts was discovered; no visible changes in the gall-bladder were discernible; in fact, nothing was detected except a few adhesions between the cystic duct and common duct or duodenum. A separation of these adhesions, with a liberation of the bound-down ducts and viscus from the constantly nagging, distended stomach and intestines, would, as a rule, bring relief to the patient. If an obstruction was located in the cystic duct, and the gall-bladder escaped, the usual contraction due to the presence of a cholecystitis, this viscus might continue to manufacture mucus, and if infected, as it usually was, a mucopurulent distention took place, and a pyriform retention cyst was produced, usually detectable below the border of the liver in emaciated patients. In this condition jaundice was absent, and the patient would have fever and stomach and intestinal digestive disturbances. These cases were especially liable to recurring attacks of fever, as the absence of bile in the gall-bladder robbed nature of one of the most efficient inhibiting bactericidal fluids. These were fit cases for a cholecystectomy, as drainage of the gall-bladder was too uncertain in its curative effects, the opening either refusing to close, or if it did close, the symptoms were renewed.

When the complete obstruction of the duct was the outcome of a long impacted stone resulting in a cancer, the diagnosis of the latter was extremely difficult before operation. Cancerous obstruction occurred most frequently in the lower portion of the common duct. This was likewise the location of most lithogenous obstructions. In determining the existence of an obstruction, its location, extent, character, and time of operating, he had for fourteen years resorted to hydrostatic pressure, by introducing through an aspirating needle into the gall-bladder a saline solution from a moderate height, or if this viscus had been opened, the nozzle of an irrigating syringe, or if the common duct had been opened, by irrigating directly into the duct. In cases in which the duct was embedded in a mass of adhesions and had lost its identity, it could be made to stand out distinctly by water pressure introduced through the gall-bladder, provided the cystic duct was patent. By this same process the patency of the duct, after removal of one or more stones, could be determined, as he had on several occasions run rather a large quantity of saline solution directly into the duodenum through the gall-bladder, cystic and common ducts. As a means of determining the security of the duct stitching, where the opening in this canal was closed by suture, this method was invaluable, as disappearing stones and other débris could thus be washed out of the biliary tract.

The following papers were read and discussed: "Gallstones, Report of Two Cases," by Dr. J. H. Barnett of Pikeville, Tenn.; "Pruritus of the Anal Region," by Dr. Bernard Asman of Louisville, Ky.; "Diagnosis and Treatment of Brain Traumatism," by Dr. John N. Sluss of Indianapolis, Ind.; "Asthma with Mixed Infection Following Repeated Attacks of La Grippe," by Dr. William F. Waugh of Chicago; "Some Medical Notes on Frontal Sinusitis," by Dr. A. E. Prince of Springfield, Ill.; "The True Cause of Functional Neuroses," by Dr. G. G. Buford of Memphis, Tenn.; "A Possible Explanation of the Formation of Drug Habits," by Dr. H. A. Rodebaugh of Columbus, O.; "Specific Treatment of Tuberculosis Pulmonalis," by Dr. E. G. Epler of Fort Smith, Ark.; "Report of Cases of Probable Maternal Impressions," by Dr. J. Madison Walton of Memphis, Tenn.; "Some Clinical Observations in Tuberculosis," by Dr. William Porter of St. Louis, Mo.; "Eye Findings in Arteriosclerosis," by Dr. George F. Suker of Chicago; "Remarks on Combined Degeneration of the Spinal Cord," by Dr. Hugh T. Patrick of Chicago; "The

Entoning of the Psychic Neurons in Neurotherapy and in General Therapeutics," by Dr. C. H. Hughes of St. Louis, Mo.; "Yellow Fever and Mosquitos in New Orleans in 1905," by Dr. Quitman Kohnke of New Orleans, La.; "Operations for Pyothorax," by Dr. Spencer Graves of St. Louis, Mo.; "What to do in the Presence of Obscure and Persistent Abdominal Symptoms," by Dr. H. H. Grant of Louisville, Ky.; "Etiology, Pathology, and Operative Treatment of Deformities of the Face and Mouth due to Malrelations of the Face and Jaws," by Dr. V. P. Blair of St. Louis, Mo.; "Successful Obliteration of Hemangioma Cavernosum of the Upper Lip," by Dr. Francis Reder of St. Louis, Mo.

Drs. Martin F. Engman and W. H. Mook of St. Louis, Mo., gave lantern slide demonstrations of the *Spirochæta pallida* in various syphilitic lesions.

Officers.—The following officers were elected for the ensuing year: *President,* Dr. H. H. Grant of Louisville, Ky.; *Vice-Presidents,* Dr. Barr of Hot Springs, Ark., and Dr. T. C. Witherspoon of St. Louis, Mo.; *Secretary,* Dr. Henry Enos Tuley of Louisville, Ky., reelected; *Treasurer,* Dr. Samuel C. Stanton of Chicago, Ill., reelected.

Columbus, O., was selected as the place for holding the next annual meeting; time, October, 1907.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held October 5, 1906.

DR. SAMUEL LLOYD IN THE CHAIR.

A Case of Laryngectomy.—Dr. HOWARD LILIENTHAL presented a man, aged about fifty years, on whom he had performed laryngectomy for carcinoma. The larynx was removed last February and in two stages, doing first a preliminary tracheotomy and, one week later, a laryngectomy. The specimen was presented. The man gained forty pounds in weight and to-day was perfectly well. Of course the man could not phonate, but he could make himself understood by using the muscles of the mouth. The operation of laryngectomy was not so formidable now as formerly. The patient had not one single sign of recurrence.

A Case of Cancer of the Tongue.—Dr. ROBERT H. M. DAWBARN presented a man, sixty-three years old, upon whom he had operated January 29 last, removing the entire tongue, barring 1 cm. of the hyoid attachment. The right tonsil and a mass of diseased submaxillary lymph nodes were also extirpated. Both submaxillary and sublingual glands were removed. The Kocher incision was used. Compresses wrung out of boiling water were applied to the freshly cut surface. The wound was best not sewn at all, and it was useless to introduce packing, for it would soon become soaked with saliva. Instead, a fountain syringe full of 1-10,000. potassium permanganate solution hung at the head of the bed, and hourly a stream was run into the mouth and out of the wound. After emphasizing the danger of inhalation pneumonia, he said that could be avoided by having the head lower than the chest, as by elevating the foot of the bed. This postural position should be retained until the patient could swallow ice water without coughing.

Case of Esophageal Stricture.—Dr. WILLY MEYER presented a young man, eighteen years old, who came under his observation two and a half years ago with an absolute stricture of the esophagus, caused by caustic lye when he was a child of five years. For eight years he had introduced food through a gastric fistula. All attempts to enter the stomach from above had failed. An osteoplastic flap was made of "U"-shape, and it was found that the esophagus was entirely obliterated for some distance. One of the most interesting features in this case was that the boy had increased in weight during the past ten years. He chewed his food and then blew it into his stomach through a water-tight fistula. The lad learned to do this in a very clever way and ate the same food as did other members of his family.

Brain and Skull Surgery Made Safer by Sequestration-Anemia; with Five Recent Illustrative Operations. Dr. ROBERT H. M. DAWBARN read this paper. He said that experience had shown that one could with safety withdraw into the limbs some quarts of the whole bulk of blood, which constituted one-thirteenth of the body weight. One could sequestrate before operation and retain in the limbs by cordage enough blood to make a striking difference in loss of blood from the operative field. This temporary bleeding into the patient's own extremities was controlled as to degree by the finger upon the pulse. Its original volume and force being estimated, the sequestration proceeded until there was plainly noticeable softening and lessening of tension, and, at this point, the operation should begin. A towel folded lengthwise was wrapped about each thigh close to the trunk, and upon this a rubber tube was tightened. This should stop the venous but not the arterial current. After from five to ten minutes the softened pulse would indicate time to begin operation. No case had ever been recorded in which stagnation of blood within a limb for a period as short as half an hour had been followed by gangrene; but for safety, after fifteen minutes the assistant should begin to cord the remaining two limbs, and almost at the same time commence to release those first constricted. In long operations this shifting from arms to thighs and back again had been done repeatedly. But, as a rule, only in case the limbs grew excessively swollen, or the pulse demanded a change, was the tension altered during the operation. In a few plethoric individuals he had used constriction on all four extremities at once. After this practice, but before releasing the tourniquet, the blood in every divided vessel should be firmly clotted by the application of gauze sponges wrung out of actually boiling water. No one need fear ill results of this procedure on even the most delicate tissues. To avoid blistering, one should avoid contact with mucous membrane or skin. Dr. Dawbarn gave the following advantages of the method by sequestration in brain surgery: (1) A striking diminution of the amount of anesthetic needed, with consequent relative safeguard against bleeding due to straining from subsequent vomiting, and against hernia cerebri, and also against lowering of vital heat; (2) ease of control of hemorrhage during operation, because of lessened intravascular tension; (3) a shortened operation, because of a dry field; (4) through lowered intracranial pressure consequent upon accumulation of blood elsewhere, there was lessened danger of sudden death from pressure upon the respiratory center during work upon brain tumor, or upon depressed fractures, etc., and indeed, just in proportion as there was bleeding, whether external or into the limbs, there was increased depth and frequency of breathing, which, by oxygenating the blood, helped to prevent shock; (5) more space between brain and brain case, enabling the operator to work between, in removing old clots requiring curettage, or the separation of adhesions, etc., without risk of lacerating the brain surface. Dr. Dawbarn concluded his paper with the recital of four interesting cases.

Dr. JOHN A. WYETH said that constricting an extremity for the purpose of holding the blood volume was an old practice, and used by surgeons from time immemorial for the arrest or retardation of internal hemorrhage. Such successful results had been obtained that he wondered that it had not been thought of before in surgery of the skull and brain. He advised doing many of these operations in two sittings. In view of the danger of coagulation of blood in the veins, he suggested that they be not completely constricted, not to apply the band so tightly that the blood pumped from the arteries into the veins would not be delivered. He also advised alternating from one arm or one leg to the other. With regard to the necessity for cerebral

anemia prior to operations, he called attention to Dr. Senn's heroic method of isolating the trachea and then constricting the entire neck. Dr. Wyeth thought this to be a little too heroic. A temporary ligature could be passed around the carotid artery without injuring it.

Dr. WILLY MEYER called attention to Bier's treatment by passive congestion, a ligature in some instances being applied to the lower extremity and left on during the entire night without any trouble arising from it. In healthy vessels fear of injury from these constrictions was unfounded, if not applied too long.

Dr. Dawbarn closed the discussion.

Remarks on the Osteoplastic Resection of the Costal Arch, in Order to Reach Vault of the Diaphragm.—Dr. WILLY MEYER read this paper, which was read before the Section on Surgery and Anatomy of the American Medical Association, at the fifty-seventh annual session, June, 1906. Two cases were related which proved the great help one might expect from the osteoplastic raising of the lower part of the thorax, when it became necessary to reach ordinarily inaccessible organs within the phrenic concavity. He said that the cases in which this osteoplastic operation would prove to be especially useful were those of injury to the liver and spleen (stab and bullet wounds, as well as lacerations, due to a blunt force), also injuries and diseases of the diaphragm (hernia), and of the cardiac end of the stomach. Inflammatory troubles (liver abscess and subphrenic abscess) would be attacked to better advantage through or just beneath the complemental space of the pleural cavity after resection of one or more ribs.

Tumors of the Larynx, with Reports of Two Laryngectomies, One Hemilaryngectomy, and Three Thyrotomies.—Dr. JOHN F. ERDMANN presented this paper, which was read by title.

Presentation of a Gas-Ether Inhaler.—Dr. VICTOR COX PEDERSEN presented this apparatus.

Specimen of Tumor of Larynx.—Dr. ERDMANN presented this specimen, which was to illustrate one of the cases reported in his paper.

Specimen of Intraligamentous Cyst.—Dr. ERDMANN presented this specimen, which was removed from a woman, forty-four years old, and from her left side. This was the second one he had removed from the left side this year.

Specimen of Fibroid Arising from the Uterus.—Dr. SAMUEL LLOYD presented this specimen, which he removed from a woman who was not five feet tall, and whose abdomen was as large as she was tall. She had had this tumor for two years, and had been tapped, with the idea that she had ascites. There was a large quantity of ascitic fluid present. There was nothing of especial interest beyond the enormous size of the growth. A supravaginal hysterectomy was performed.

Dr. EDWARD W. PETERSEN was elected secretary of the Section, the former secretary, Dr. Warren S. Bickham, having removed to New Orleans.

COLLEGE OF PHYSICIANS OF PHILADELPHIA: SECTION ON GENERAL MEDICINE.

AT a stated meeting held October 8, Dr. J. DUTTON STEELE presented a communication entitled, "The Muscle-nucleus Test in Pancreatic Disease." It had been claimed that in the total absence of the pancreas or in occlusion of the pancreatic duct, the nuclei in bits of muscle introduced into the stomach were unaffected by the digestive process, while such nuclei were destroyed in the presence of the secretion of the gland in the intestinal tract. Clinical and experimental observations made by Dr. Steele, however, failed to substantiate these claims, inasmuch as the nuclei were found to persist in some cases in which the duct was occluded or the pancreas diseased, and they were lost in other instances in which these conditions did not exist. Dr. HENRY D. JUMP read a paper entitled "A Case of Typhoid Fever with Unusual Enlargement of the Spleen." The disease set in with a chill, the spleen extended from the seventh intercostal space to three fingers' breadth below the costal margin, the temperature became elevated, a few rose spots appeared, the Gruber-Widal test yielded positive results, and typhoid bacilli were found in the urine. The red blood-cell count was remarkably low (less than 2,000,000), as was also the hemoglobin percentage (50 per cent.), but there was no leukocytosis, and malarial plasmodia could not be found in the blood. Dr. FREDERICK FRALEY read a communication entitled "A Study of Five Hundred Cases of Pleurisy Occurring in the Pennsylvania Hospital." The paper represented an elaborate analysis of the cases that came under observation during a period of ten years, and dealt with etiology, symptomatology, diagnosis, complications, and treatment. Drs. JOSEPH SAILER and CLIFFORD B. FARR presented a communication entitled "Methods of Altering the Secretion of Pepsin." They found, among other things, that administration of moderate doses of dilute hydrochloric acid before meals proved extremely serviceable under various conditions of deficient peptic digestion. Dr. HERMAN B. ALLYN presented a communication entitled "The Treatment of Acute Gastritis." The important indications are to empty the gastrointestinal tract and place the stomach at rest. Dr. JUDSON DALAND read a paper entitled "Some Clinical Aspects of Indicanuria." He pointed out that indican is a decomposition product, representing the action of bacteria on animal proteid in the intestine, and he recited the various conditions in which this substance is present in the urine in larger than the normal physiological amounts.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

L'ATAXIE TABETIQUE, SES ORIGINES, SON TRAITEMENT PAR LA REEDUCATION DES MOUVEMENTS. Par le Dr. H. S. FRENKEL. 8vo, 327 pages, illustrated, paper. Felix Alcan, Editeur, Paris.

LA RÉGÉNERATION DES FAMILLES ET RACES TARÉES. Dr. E. CONTET. 12mo, 176 pages, paper. Vigot Frères, Editeurs, Paris.

L'ÉVALUATION DES INCAPACITÉS PERMANENTES. Par le Dr. CH. REMY. 12mo, 250 pages, flexible muslin, illustrated. Vigot Frères, Editeurs, Paris.

RECENT ADVANCES IN THE PHYSIOLOGY OF DIGESTION. By ERNEST H. STARLING, M.D., F.R.S. 8vo, 156 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $2.00.

TEXTBOOK OF MIDWIFERY FOR NURSES. By ROBERT JARDINE, M.D., Edin., M.R.C.S., Eng., F.F.P. and S., Glasg., F.R.S., Edin. 12mo, third edition, 276 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $1.50.

ESSENTIALS OF HUMAN PHYSIOLOGY. By D. NOEL PATON, M.D., B.Sc., F.R.C.P. Ed. Second edition, revised and enlarged. 8vo, 444 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $2.75.

DIET IN HEALTH AND DISEASE. By JULIUS FRIEDENWALD, M.D., and JOHN RUHRAH, M.D. Second edition, thoroughly revised and enlarged. 8vo, 728 pages, muslin. W. B. Saunders Company, Philadelphia. Price, $4.00.

PREVALENT DISEASES OF THE EYE. By SAMUEL THEOBALD, M.D. 8vo, 551 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $4.50.

SYPHILIS DU POUMON. Par le Dr. BERIEL. 8vo, 346 pages, illustrated, paper. G. Steinheil, Editeur, Paris.

GUIDE PRATIQUE POUR LE CHOIX DES LUNETTES. Par le Dr. A. TROUSSEAU. 16mo, 102 pages, muslin. F. R. De Rudeval, Editeur, Paris.

RETINOSCOPY (OR SHADOW TEST). By JAMES THORINGTON, A.M., M.D. Fifth edition, revised and enlarged. 8vo, 67 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.00.

ATLAS AND TEXTBOOK OF HUMAN ANATOMY. By Dr. JOHANNES SOBOTTA. Edited with additions by J. PLAYFAIR MCMURRICH, A.M., Ph.D. Volume I. 8vo, 258 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $6.00.

PHOTOSCOPY (SKIASCOPY OR RETINOSCOPY). By MARK D. STEVENSON, M.D. 8vo, 126 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $1.25.

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Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending November 17, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	373	176
Diphtheria	253	36
Measles	72	3
Scarlet Fever	115	5
Smallpox	1	—
Varicella	46	—
Typhoid Fever	108	14
Whooping Cough	90	8
Cerebrospinal Meningitis	21	8
Malarial Fever	..	.....
Totals	1079	250

Treatment of the Gastric Crises of Tabes by Elongation of the Solar Plexus.—Recently Vallas has tried the effect of the elongation of the solar plexus on the gastric crises of tabes. This method is the same as that used by Jaboulay in two cases of gastralgia. The patient of Vallas had been suffering for six years from gastric crises characterized by violent pain and incontrollable vomiting and there had been even hematemesis. After laparotomy the stomach of the patient was seen to be of normal dimensions. The appearance of very much dilated blood vessels on its surface was marked. After the pylorus was lowered search was made for the celiac trunk and the solar plexus was elongated by denuding the celiac trunk. This treatment has been followed bv entire sessation of pain on the part of the stomach.—*La Tribune Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 16, 1906:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS
District of Columbia, Washington	Oct. 27–Nov. 3	1	..
Illinois, Galesburg	Nov. 3–10	15	..
Indiana, South Bend	Oct. 27–Nov. 10	16	.
Iowa, Farley	Oct. 10–Nov. 12	14	..
Louisiana, New Orleans	Nov. 3–10	5	..
Maine, Bangor	Nov. 10	3	..
Nebraska, Omaha	Oct. 24–31	1	.
North Carolina, Greensboro	Oct. 27–Nov. 3	1	..
Ohio, Findlay	Oct. 27–Nov. 3	1	Imported
Wisconsin, Appleton	Oct. 27–Nov. 3	1	.

SMALLPOX—FOREIGN.

Africa, Cape town	Sept. 22–Oct. 6	16	..
Brazil, Bahia	Sept. 29–Oct. 13	5	.
Rio de Janeiro	Sept. 30–Oct. 14	3	.
France, Paris	Oct. 13–27	6	.
Greece, Athens	Oct. 6–13	.	1
India, Bombay	Oct. 9–16	..	2
Calcutta	Sept. 29–Oct. 6	.	4
Russia, Moscow	Oct. 6–20	4	1
Odessa	Oct. 6–20	12	1
St. Petersburg	Sept. 29–Oct. 13	6	2
Spain, Barcelona	Oct. 21–31	.	5
San Feliu de Guixols	Oct. 20–27	.	1
Turkey, Constantinople	Oct. 14–21	.	1

YELLOW FEVER.

Brazil, Rio de Janeiro	Sept. 30–Oct. 13	2	.
Cuba, Cruces	Nov. 12	3	.
Cuevitas	Nov. 7	1	.
Habana	Nov. 10–14	5	.
Santa Clara	Nov. 12	1	.
Nicaragua, Managua	Oct. 6–13	.	1

CHOLERA.

(Previously Reported.)

India, Bombay	Oct. 9–16	.	6
Calcutta	Sept 29–Oct. 6	.	20
Madras	Oct. 6–12	.	1
Rangoon	Sept. 29–Oct. 6	.	2

PLAGUE.

Australia, Cairns	Sept. 8–15	2	..
Australia, Trieste	No . 12	.	Present
Brazil, Bahia	Sept. 29–Oct. 6	1	..
Rio de Janeiro	Sept 30–Oct. 13	14	8
India, General	Sept. 29–Oct. 6	7,301	5,832
Bombay	Oct. 9–16	.	54
Calcutta	Sept. 29–Oct. 6	.	9
Rangoon	Sept. 15–Oct 6	.	107

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Original Articles.

THE TREATMENT OF DIFFUSE SUPPURATIVE PERITONITIS FOLLOWING APPENDICITIS.*

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It is only within the last decade that recoveries from more or less generalized suppurative peritonitis have occurred in sufficiently large numbers to make this malady, which formerly had an appalling mortality, appear in a brighter light. Numerous articles have been written upon the subject, showing an increase in the number of recoveries; nevertheless, the fact that a mortality as high as 30 to 40 per cent. is still reported by surgeons as representing very favorable figures, goes to show how serious is the ailment with which we are dealing.

Up to the present time I have operated in eighteen cases of diffuse suppurative peritonitis by the method described below, and I feel prompted to publish these for the reasons, (1) that I have had the good fortune of being able to save all cases operated upon not later than seventy hours after the onset of the diffuse peritonitis, and even two on the fourth day; and (2) because my method of operating differs in many particulars from that described by other surgeons. When I had operated upon my first few cases without losing any of them, I thought the result might possibly be a matter of chance or good luck; but now, after looking back upon a respectable number of cases, especially inasmuch as all of them were of a very severe type, I cannot help believing that there is something in the method of treating them that has helped to bring about this gratifying result.

In this list of eighteen cases I have had three deaths—one operated on at the end of the third day (Case 17) and two operated upon on the fourth day (Cases 14 and 18). One of these fatal cases (Case 14), a boy ten years old, was actually moribund when he was brought to the operating table. He had reached that stage in which pain ceases to be felt; as I pressed on his much distended, board-like abdomen, he declared, on being questioned, that he had no pain. A case like this one would naturally not be touched by any one whose aim is to present favorable statistics. Had it been my object to work for statistics, it would have been very easy to report 100 per cent. of cures; for, in every one of the three fatal cases operated upon at the German Hospital, I expressed my opinion to the physicians who saw them with me that I entertained no hope for their recovery, but simply operated in order to give them the only chance they could have. I may add that it is my intention to continue to operate, even in cases that are apparently hopeless, excepting perhaps those that are actually moribund, like Case 14. These eighteen cases show a recovery of 83 1-3 per cent. and a death-rate of 16 2-3 per cent. (Since reading this paper I have added three cases to my list, all of which were successful, so that the mortality has been reduced to 14 per cent.)

To appreciate what can be attained by the method which I have adopted, it is necessary to understand exactly what was the severity of the cases included in my list. By "Diffuse Suppurative Peritonitis Following Appendicitis," I mean cases of appendicitis accompanied by the presence of free pus spread over the greater part of the peritoneal cavity. Unfortunately, there is a good deal of confusion in the terminology, the same cases being described as spreading peritonitis, diffuse peritonitis, general peritonitis, etc. The reason for this lack of exactness lies in the fact that these conditions are really nothing but different degrees of the same thing, viz., of free purulent peritonitis. They might with perfect correctness all be called by the name free purulent peritonitis (peritonitis purulenta libera). But everybody knows that a case in which the pus has become widely diffused is of far more serious import than one in which it is only just beginning to spread. Clinically, therefore, we must make a distinction. The class of cases that I am reporting used to be designated as general peritonitis. This term, however, has been more and more abandoned, as in cases that are seen at operation, it is exceedingly rare that every portion of the peritoneum is involved. Some part of it will regularly be found healthy. There remain the terms spreading peritonitis and diffuse peritonitis to designate the varying degrees to which the pus has spread over the peritoneal cavity, and of these the former should be used to designate the earlier stages, the latter those in which the pus has spread over a considerable area.

It seems almost unnecessary to state, yet, to avoid misconception on the part of some, it may be well to mention that no case of abscess, no matter how large, can be classed as diffuse peritonitis. Even if the abscess extends over to or beyond the median line and up close to the liver, it is nevertheless a case of localized, not diffuse, peritonitis, if it is walled off from the rest of the peritoneal cavity. These cases are usually seen in the second week, or even later, whereas diffuse peritonitis is seen in the first few days. To be classified as diffuse peritonitis, it is necessary that the pus, or at least the greater part of it, is free in the peritoneal cavity. I say "the greater part of it," because in advanced cases of diffuse suppurative peritonitis, as a rule, a part of the pus will be to some degree, though imperfectly, separated from the remainder of it by adhesions

*An abstract of this paper was read at a special meeting of the German Medical Society, held, in honor of Professor Trendelenburg, at the New York Academy of Medicine, on April 30, 1906, and the whole paper was afterward read before the Bronx Medical Association.

between adjoining coils of intestine or between intestine and parietal peritoneum.

Whereas, the distinction between diffuse suppurative peritonitis and large abscesses is almost self-evident, it must also be understood that by no means all cases of free purulent exudate can be grouped under the caption of diffuse peritonitis. As already intimated, some excellent writers have classed all cases of free purulent exudates together, even if their extent was but limited, and described them under the name free purulent peritonitis (peritonitis purulenta libera). Or, what amounts to the same thing, cases of spreading peritonitis and diffuse peritonitis have been recorded together, and statistics have been given for a combination of the cases with an exudate of limited extent, and those with a diffuse exudate. If I had elected to include my cases of free purulent exudate limited to the right side of the abdomen and to the pelvis, or perhaps extending but slightly beyond the median line, the results would be represented by a much better figure even than the very satisfactory one given above. However, as my object is not to present statistics, but to describe an efficient method of operating in the more advanced cases, I am compelled to exclude the less extensive ones, because in these, which are correctly classed as spreading peritonitis, a different method of operating was employed. The term "diffuse suppurative peritonitis," as I employ it, refers to cases in which the free pus extended well over to the left side, a condition which was recognized, before operation, by the extent of the rigidity of the abdominal muscles and the corresponding tenderness, and was verified at the operation.

The method of operating was the following: The incision, in all but four cases, was in the median line. In two of these (Cases 12 and 13) it was about 1 to 1½ inches to the right of the median line, going through the rectus muscle; in the others (Cases 7 and 10) it was about 2¼ to 2½ inches to the right of the median line, going through the rectus fascia, but not through the muscle, this being drawn by the aid of retractors toward the median line (Kammerer's incision). The principle which guided me in the selection of the incision was to place it midway between the estimated right and left limits of the exudate, and, as in almost all the cases the exudate extended all the way over to the left, the incision naturally corresponded about to the median line.

As regards the length of the incision, it extends from the pubes to above the umbilicus, the upper limit being at least two inches above the umbilicus, usually higher. In some cases the incision extended all the way from the ensiform cartilage to the pubes. An incision from umbilicus to pubes, with which I occasionally began, proved to be insufficient for thorough work, and was lengthened upward with a detour about the navel. I have never excised the navel, as even this small unnecessary expenditure of time seemed unwarranted. The length of the incision is such that the abdominal walls may be retracted sufficiently far to allow all the affected parts of the peritoneum to be inspected.

When the peritoneum has been incised, as a rule, the pus or purulent serum at once begins to flow out; occasionally, however (Case 3), the omentum first presents through the abdominal incision and the free pus is behind it. The pus is allowed to flow out, and where it cannot flow out it is dipped out with gauze sponges or swabs that are immediately discarded. Our effort here is to do the least possible injury to the peritoneum; it is for this reason that I want as much of the pus as possible to flow out without any manipulation on our part, and recommend that the rest be dipped out, rather than wiped out, as the latter procedure would be more likely to injure the peritoneum. The less traumatism the peritoneum is subjected to, the better will be its chance to recuperate. When the bulk of the pus has thus been removed, the appendix is next exposed, a procedure by which often an accumulation of pus imperfectly separated from the rest is opened up. After having removed the appendix I flush the peritoneal cavity with large quantities of saline solution which is poured from bottles or pitchers. The flushing is done in sections, a portion of the peritoneal cavity being cleaned at a time. Thus, for instance, we may begin by washing the coils of intestine and the omentum that are eventrated. Then we may take up the region of the cecum. To cleanse this, the right abdominal wall is drawn well to the side, and while one hand, covered by a rubber glove, holds the intestine aside in one direction and again in another, the salt water is poured into all recesses in that locality. Then we may turn our attention to the pelvis. The gloved hand is introduced to the floor of the pelvis, and the intestines are drawn out of the way. The water is poured in, and the hand, by some gentle to-and-fro motions, assists it in washing all parts of the pelvis and its contents. The left iliac region may next be attended to in a similar manner, and the same process of washing is continued upward in both flanks, one portion being taken up after another, till the cavity is clean. Whenever fresh adhesions between adjacent coils of intestine are encountered, they must be loosened. By observing this precaution I have evacuated one accumulation of pus after another, where from mere inspection I would not have suspected the presence of any. This condition was probably most marked in Case 6. To anyone who has seen these collections of pus in the rear portions of the peritoneal cavity, completely covered by freshly adherent intestine, it is at once clear that the method of lavage by means of a long tube introduced through a comparatively small opening in the region of the appendix, as recommended by some, is entirely inadequate. The tube would simply pass over the intestines that cover such collections of pus, but would not come in contact with the pus that is thus partially separated from the free pus.

When the lavage has been finished, I close the abdomen completely, without drainage. This procedure in a suppurative inflammation may appear to be contrary to all recognized principles, and yet my experience teaches me that it is the proper method. If the peritoneum has not been grossly and extensively injured by the suppurative process, and if the pus has been removed as thoroughly as the procedure above described permits, the peritoneum will be able to cope with what little infectious material may yet remain behind in a considerably diluted condition. But if large portions of the peritoneum show gross changes, its recuperative powers are reduced, and recovery is less likely.

If any one is imbued with the idea that the peritoneum must be drained, he must naturally ask himself how he can accomplish it. Packing the peritoneum extensively with gauze at every possible place where there may have been pus has long been recognized as being very harmful to the integrity of that membrane; it has been shown experimentally that sterile gauze packed extensively into the peritoneal cavity of a healthy animal has caused its death. Fowler thought he had solved the problem

by draining the pelvis only, and placing the patient in an oblique plane, such that the chest is higher than the pelvis, a position which is the reverse of Trendelenburg's posture, and has been called Fowler's position. I feel quite certain that in diffuse suppurative peritonitis this posture fails of its purpose; for, although a nonirritating fluid in a noninflamed peritoneal cavity will tend to accumulate at the lowest part of the cavity, such is not the case in peritonitis with pus. The peritoneal surfaces are in a short time incited to form adhesions which will prevent the downward flow of the purulent serum. The very course of appendicitis with pus speaks against Fowler's principle, inasmuch as at the operation the pus will most frequently be found to have spread in the direction in which the appendix happens to lie, whether that be upward, downward, or across. According to Fowler's principle, if a patient's appendix, or appendicular abscess, ruptures, while he is still up, either sitting or standing, we ought invariably to find pus in the pelvis; and we know that this is not always the case. Even in the case of ascites, where we have a bland fluid, all the fluid will not invariably find its way to the lowermost part; portions of the exudate will at times be sacculated, as is occasionally seen when we perform a laparotomy in the presence of ascites. Fowler's position, I should say, may be of some value in very recent cases of pyoperitoneum, where the peritoneum is as yet but slightly congested—in a word, in just those cases where the advice to omit drainage will be best understood and most readily concurred in; but in more advanced cases of diffuse suppurative peritonitis it certainly fails to accomplish its object. In the majority of my cases I would not have dared to raise the patient's head, owing to danger of syncope; in fact, in a number of these cases, I have had to elevate the foot of the bed, owing to the profound depression of the heart's action.

In two of my cases, during convalescence, localized intraperitoneal abscesses occurred, which manifested themselves by pus oozing from one or two stitch canals. It is particularly noteworthy that in neither of these two did the abscess form near the cecum or in the pelvis, the regions where drains would have been placed by the advocates of drainage. In one case (Case 6) a localized abscess formed in the left lateral abdominal region, about on a level with the umbilicus, and in the other (Case 10) it formed at about the same level, just to the right of the median line. If one had decided to employ drainage in either of these cases, one would surely not have drained at the site where the abscess subsequently developed, and, as all other parts of the peritoneal cavity remained clean, one would only have done harm by draining where no drainage was needed. These cases particularly showed that in diffuse suppurative peritonitis we simply cannot tell where we should drain, and it is better not to drain at all than to run the chance of doing harm by drainage at the wrong place.

In four cases (Cases 1, 11, 12, and 13) I had extraperitoneal suppuration of greater or less extent in one or other layer of the abdominal parietes, the most extensive one being in Case 13, where the incision through the right rectus had been chosen. In this case I had been particularly careful to protect the abdominal wound against infection from the outflowing pus by placing gauze over it. The very long incision through a thick muscle doubtlessly exposes a larger wound surface to infection than an incision in the median line. I would therefore not recommend it.

Of the remaining nine cases, two or three showed signs of inflammation at the stitch canals, which subsided promptly on removing the stitches; the remaining cases healed without the slightest sign of irritation.

The closure of the abdominal wound was performed in various ways: through-and-through suture, suture of each layer separately, and thirdly, suture of the peritoneum separately with a superimposed combination suture of skin, fascia, and muscle. In one case in which I employed the last of these methods, I cleansed the abdominal wound very carefully after closing the peritoneum, hoping that in this manner I would prevent the formation of a mural abscess; but the infection of the abdominal wall nevertheless occurred. I have used most frequently, and am now using exclusively, through-and-through silk sutures, as they can be put in most rapidly, and rapidity in performing the operation certainly counts for something, although it should not be overestimated. Rapidity at the expense of thoroughness in cleaning the peritoneal cavity may appeal to those who dread the specter of a death on the operating table, but it will cost a number of lives after the operation. The shortest time in which I have been able to perform the operation is twenty minutes; the longest time was one and a half hours. In this case of long duration a complete eventration was necessary, and enterotomy had to be practised at three different places to empty the distended bowels and get them back into the abdomen.

Some two years ago a paper on this subject was read at the New York Academy of Medicine, in which a rather small incision, lavage through a metal tube, and drainage in Fowler's position, were recommended. The paper was discussed by a number of eminent surgeons, who concurred with the reader of that paper in the principles he had laid down. I alone dissented, and recommended large incisions and flushing by pouring, and even advanced the heretic principle, based on my experience, that drainage was not needed, if the peritoneal cavity had been washed clean. It has given me great satisfaction to learn that now a number of surgeons are beginning to share my views in regard to the question of drainage.

The after-treatment demands careful attention. All these cases require hypodermic stimulation, strychnine, digitalis, and camphor, occasionally caffeine and nitroglycerin, being the drugs I usually employ. In cases with severe shock saline infusion is given, adrenalin is administered, and the foot of the bed is elevated. Hypodermoclysis is an excellent method of introducing fluids when the stomach is not capable of retaining them. The introduction of fluids in this manner, or by infusion, also counteracts sepsis, as it encourages the elimination of poisons by the kidneys. Vomiting is treated by lavage of the stomach. I attach considerable importance to this procedure, and I believe that it has saved a few lives. For pain, enough morphine is injected to make the patient fairly comfortable. As a rule, these patients do not pass gases spontaneously during the first two days; sometimes even not for four days. To relieve them the rectal tube is inserted frequently. This may give but a moderate degree of relief; nevertheless, in these first few days, I do not recommend the employment of any of the more active means of encouraging peristalsis, such as cathartics or enemata. I know that in this respect, again, I am at variance with the views of the majority of physicians, who hold that the bowels must be moved early, in order to avoid intestinal paralysis. This practice may be very good after clean laparotomies,

for it certainly makes the patient feel easier; but where the intestines are affected by an inflammation of their peritoneal covering, they should be allowed to rest for a few days, in order that they may recover, particularly, also, that adhesions may form around the stump of the appendix. After a lapse of three, or preferably four days, if the patient still suffers from an imperfect evacuation of gases, I employ a lavage of the rectum, the water being allowed to enter and flow out again, without any attempt to force it up the intestine. A regular enema is given about the fifth or sixth day. A study of my cases would substantiate the correctness of the view that the intestines should be permitted to rest during the first days. All of my successful cases, except the first one, were treated in accordance with this principle, no attempt being made to move the bowels. My first case had magnesium sulphate introduced when the stomach was washed. As regards the three fatal cases, No. 14, the moribund one, can be disregarded; No. 18, in which the progress of the sepsis was not even interrupted by the operation, also has no bearing on this question; Case 17, the remaining fatal case, received an enema daily, beginning with the day following the operation. Just at that time I had read articles by several writers on this subject, in which it was strongly recommended that peristalsis be induced as soon as possible after the operation. This caused me to waver from my usual method and to order the enemata in Case 17. The effect at first was surprisingly satisfactory, as the patient felt very well after his enemata; but on the sixth day he suddenly developed a septic peritonitis, which, within less than half a day, caused his temperature to rise 7½ degrees, and terminated fatally. I cannot help thinking that the excitation of peristalsis prevented the formation of firm adhesions over the stump of the appendix, that on the sixth day the closure of the stump became imperfect, and that fecal matter discharged itself over the peritoneal cavity. It was impossible to prove the correctness of this view, as an autopsy was not permitted. If it were within our power to bring on a movement of the bowels with a very slight amount of peristalsis, I should give my consent to the administration of such a remedy; but as long as the degree of peristalsis is not completely in our control, I prefer to leave the bowel alone.

(Since reading this paper I have had the opportunity of assisting another surgeon at an operation for diffuse suppurative peritonitis in a female child, a case about equal in severity to the milder ones in my series. Two days later I saw her again in consultation. In the meantime, calomel had been given, and her bowels were moving freely. She appeared to be in satisfactory condition and was feeling comfortable—like my Case 17. But on the following day she sank rapidly, the temperature rose, and she died of septic peritonitis. So my experience with exciting peristalsis after this operation leads me to consider it a dangerous procedure.)

For a similar reason I do not give rectal alimentation in these cases, as this is apt to excite peristalsis. I give small quantities of water, if the stomach will bear it, and later bouillon and strained gruel. If the stomach revolts and the patient vomits, the stomach is washed, and again nothing but water is given for a short time.

As regards the prognosis, it may be said in a general way that the earlier a case comes under treatment the better the chance for recovery; it will be best, if the pus has not yet spread far enough to classify the case under diffuse suppurative peritonitis. Nevertheless, the severity of the case cannot be measured by any such routine method as the number of hours it has lasted. Some cases progress more slowly than others. If this were not so, it would not have been possible for me to save some cases operated on the fourth day, while one, operated at the end of the third day, succumbed. In cases that progress more slowly we find at the operation that here and there the peritoneum tried to set a barrier to the invasion by forming adhesions which would hold back the pus in one direction, but fail to do so in another direction. I have found that these adhesions are usually formed anteriorly, while posteriorly the pus travels onward. Thus we not infrequently find some adhesions in the neighborhood of the appendix which may have prevented the pus from at once finding its way upward; in such cases it frequently travels next into the pelvis; here, again, some adhesions may imperfectly close the pelvis, the pus, however, continuing to travel to the left iliac fossa, and so on. In one patient (Case 11) the adhesions in the region of the appendix and at the brim of the pelvis had even attained quite some firmness, yet they did not prevent, but they merely retarded the progress of the pus, as in that very case the abdomen was full of it up to the liver and spleen. Such a case in which the disease advanced more slowly may be more favorable on the third day than another case with a more rapid invasion on the second day.

To sum up, the main points recommended in the treatment of diffuse suppurative peritonitis are: 1. Extensive incision, as a rule in the median line; 2. Lavage with saline solution poured in large quantities into the peritoneal cavity; 3. Closure without drainage.

The following is a list of my cases, almost all of which were operated upon at the German Hospital.

Case I. Miss T. F., 22 years old, was admitted to the German Hospital on June 9, 1902, at 10 P.M., complaining of severe abdominal pain. Her pulse was 126, her temperature 104.2°, and her respiration 36. When I saw her half an hour later I found a little woman with flushed cheeks, rapid and shallow respiration, an expression of the face that indicated suffering, yet taking scarcely any interest in her surroundings. Her pulse had in the meantime risen to 140 and the respiration to 40; she was in a somnolent state, but answered questions quite rationally. She said that for a few days she had suffered pain extending over the greater part of the abdomen, that the pain, however, had become much more severe in the last twenty-four hours, and that her abdomen had swelled up in that time. Upon examination the abdomen was considerably distended, the abdominal wall was rigid, and there was very marked tenderness on pressure, especially in the epigastric region. The diagnosis of diffuse peritonitis was evident from these symptoms, but the source of the infection was obscure. Of course, my first thought was of appendicitis, that being the most frequent cause of general peritonitis, and consequently I tested repeatedly, and with the utmost care, whether the region of the appendix were not the seat of greatest tenderness. But the patient's statement that the upper half of the abdomen was more tender than the lower could not be shaken. The tenderness, moreover, was equally great on the left side as on the right. The indefinite history of the malady previous to the patient's admission to the hospital was also inadequate to throw any light upon the nature of the primary trouble.

The operation was performed after midnight. A median incision was made from the ensiform cartilage to the umbilicus. As soon as the peritoneum

was opened a seropurulent fluid ran out immediately. To find the source of this I first examined the gall-bladder; this contained a stone, but showed no lesion. The transverse colon and the hepatic and splenic flexures were found intact, as were also the stomach and the duodenum. The incision was thereupon extended to near the pubes, and the intestine was completely eviscerated, beginning at the duodenum, loop after loop being carefully inspected. Finally, as the iliocecal valve was reached, a distinct fecal odor gave proof that the intestine was the source of the suppurative peritonitis. The appendix was considerably distended, measuring about one and a quarter inches in diameter, and presenting perforations at about its middle, and near the apex. A fecal concretion was found in the neighborhood of the appendix. Loose adhesions had formed between the cecum and the abdominal wall, shutting off the general peritoneum above and to the medial side; the infection, however, had descended into the pelvis, and had thence traveled upward into the general peritoneal cavity. The appendix was now resected and the peritoneal cavity very energetically flushed with saline solution. On trying to close the abdominal parietes, it was found impossible to replace the enormously distended intestines. Accordingly the gut was incised and gas and fluid contents allowed to escape, to diminish its bulk, the small incision being promptly closed by Lembert sutures. This procedure had to be done at three places before the intestines could be replaced. The abdominal wall was then completely closed without drainage. The sutures were rapidly inserted in three layers, (1) peritoneum, (2) fascia and muscle, (3) skin. At 1:45 the patient was in bed again.

For about thirty-six hours after the operation the patient looked very sick indeed. Nevertheless, her pulse and temperature gradually went down, the highest temperature on the first day following the operation being 103.2° and the highest pulse 120. She was stimulated hypodermatically with digitalis, caffeine, camphor, and nitroglycerin interchangeably, at first every half hour, afterwards less frequently. Owing to the persistent vomiting, the stomach was washed about twelve hours after the operation. After the lapse of another twelve hours it was washed again, and an ounce of magnesium sulphate was introduced into it through the tube. This resulted a few hours later in a small movement of the bowels. On the following day the same procedure was resorted to, and again a movement of the bowels was the result. On the first and second days the patient was very restless and vomited frequently, but on the evening of the second day she began to improve, the highest temperature on that day being 102.2° and the highest pulse 112. From that time on her recovery progressed steadily, being interrupted only by the formation of an abscess in the line of the incision from infection through stitch canals. This was opened in the course of the second week, and the temperature subsequently remained normal. The patient was discharged cured on July 19.

A point of particular interest in this case is that the place where tenderness was greatest did not coincide with the site of the appendix, and was therefore a misleading factor in the diagnosis. In regard to this I may say that occasionally the pain and tenderness are greatest at the site of the most recent invasion. As regards the administration of the cathartic, which I do not now recommend, it will be noted that in this case the action was very mild. If it had been more drastic I believe it would have done harm rather than good.

In October, 1903, the patient came back to be operated upon for a ventral hernia which had formed in the scar. At this operation I made the interesting observation that her peritoneum was almost entirely free from adhesions. Maydl's operation was performed, and resulted in a good, strong union. The patient has since been married, and has gone through a pregnancy without in the slightest degree weakening the scar.

Case II. E. F., female, thirteen years old. Very fat little girl. No history of previous attacks. Severe pain at site of appendix began on September 30, 1902, two days before operation; exact hour not certain, but believed to be nearly forty-eight hours before operation. Examination revealed very severe pain on both sides of the abdomen, most severe over the appendix, extending somewhat above the navel. These parts were rigid. The epigastric and uppermost parts of the hypochondriac regions were but slightly tender and rigidity less marked. Temperature 103.2°, pulse 156, respiration 40, mainly costal. Cheeks flushed with fever, and, as they were very fat she did not at first impress one as a very sick child, but she had an unsteady look, and moved her head and extremities restlessly. Operation October 2, 1902. Median incision from two inches above the umbilicus to the pubes. Free pus at once escaped from both sides of the abdomen. At the site of the appendix adhesions were severed, behind which there was a collection of pus, thicker than the free pus encountered at first, and having a markedly feculent odor. The appendix was about three times its normal thickness, bluish red, and presented several gangrenous spots, one of which was perforated, a fecal concretion protruding half way through the opening. The appendix was removed and its stump charred. Lavage as in Case 1. Through-and-through silk sutures. No drainage. Recovery uninterrupted. Healing without suppuration. Stitches removed on the thirteenth day.

Case III. L. M., male, twenty-eight years old. History of three previous attacks. Fourth attack began on November 25, 1902. It was more severe than the previous attacks, but on the following day he improved. On November 28, in the evening, his pain became exacerbated and more extended, and got still worse on November 29. When seen early on November 30 his abdomen was rigid throughout and very tender, except at the uppermost part. Rectal examination was very painful, and revealed nothing. Operation on November 30 at 7 A.M., thirty-four hours after the onset of his severe pain. Median laparotomy from 2½ inches above the umbilicus to the pubes. On opening the peritoneal cavity, first at a place midway between the umbilicus and the pubes, the omentum was found adherent to the abdominal wall. On loosening it the pus gushed out from all sides. It seemed as if an attempt on the part of the omentum had been made to obstruct the extension of the pus, but, instead of encapsulating the pus, it only succeeded in protecting the anterior parietal peritoneum, while behind the omentum the infection extended without restraint. The pus was allowed to flow out; then the appendix, which was perforated near its origin, was removed. Thorough lavage with salt water poured from pitchers. The saline solution in this case was not as warm as it should have been; in fact, it appeared to me to be cooler than the body temperature, so that I had some misgivings as to the possible injurious effect. But the further course proved that no harm had been done. The wound was closed, without drainage, by through-

and-through silk sutures. Healing by primary union.

Case IV. G. C., female, twenty-three years old. Admitted January 18, 1903. Two days ago she began to suffer from pain in the right iliac region, followed shortly after by vomiting. On the following day she had a movement of the bowels, but the pain, instead of subsiding, increased, and spread over the whole abdomen. On admission her temperature was 103°, the pulse 120 and small. Leucocytosis 24,400. Abdomen rigid throughout, tender everywhere, exquisitely so at the region of the appendix; tympanites as high up as the ensiform cartilage. Operation January 18, 1903. Median incision from two or three inches above the umbilicus to the pubes. Thin purulent serum evacuated. Small perforation in appendix. No adhesions anywhere. Lavage with saline solution; closure by layer suture; no drainage. The patient did very well from the start. Her temperature dropped at once after the operation, and then never rose above 101.4°. Although the bowels did not move after the operation, they were not interfered with for four days, when two lapactic pills and an enema were ordered. The wound healed by first intention. This case differed from most others in the fact that there was not an adhesion in the peritoneal cavity, the only visible changes in the peritoneum being an intense injection of the vessels.

Case V G. R., male, twenty-seven years old. Operated upon on April 13, 1903. History of four previous attacks. Thirty-one hours ago he experienced a sharp pain in the right iliac region, and he vomited soon after. Did not send for a physician till next day, when the pain spread over the greater part of the abdomen. The case was recognized as appendicitis, and operation was advised. Examination revealed rigidity and great tenderness over the lower two-thirds of the abdomen. The incision at first made from the umbilicus to the pubes. Pus flowed from both sides, as well as from below and above. The incision was then lengthened to two inches above the umbilicus. There were slight adhesions above the appendix, which was perforated, and presented a few gangrenous spots. Appendix removed; lavage as in the other cases; through-and-through silk sutures; no drainage. Recovery uneventful.

Case VI. A. B., female, ten years old. Admitted to the hospital August 30, 1903. Had an attack of appendicitis two months ago, lasting three weeks. Again became sick yesterday at 4 P.M. with severe chills and intense abdominal pain. Her mother gave her castor oil, which brought on a few watery movements. She also had some pain on urinating. This morning the pain had diminished, but the patient became listless, and looked much worse. At 4 P.M. to-day, on admission to the hospital, the abdomen was found rigid on both sides, especially about the middle of both recti. The house surgeon also took a note that an area of dullness, extending from the right Poupart's ligament to the liver, would shift with a change in the patient's position, indicating the presence of free fluid. The temperature at 4 P.M. was 103.8°, the pulse 144, respiration 36. At 6 P.M. the temperature had gone down to 103.2 degrees, the pulse to 140, and the respiration to 28, but the rigidity of the abdomen was about the same, and the general condition no better. Operation was performed at 8 P.M. Median incision from near the sternum to the symphysis. Pus flowed out as soon as the peritoneum was opened. The appendix, which was thick and presented a gangrenous area near its origin, was removed, and the stump charred. Pus was found in all parts of the peritoneal cavity, on the surface, in the pelvis, underneath the liver, under the diaphragm, near the spleen; a particularly large amount welled up from the duodenojejunal fold; wherever the adjacent coils of intestine were separated pus welled out. These adhesions just referred to were quite recent, and were easily separated by the mere handling of the intestines. Salt water was poured in from pitchers until the fluid remained clear. A considerable amount of salt water was left in the abdominal cavity. The wound was closed entirely, without drainage, by stout through-and-through silk sutures. After the operation the patient received a hypodermic injection of three minims of Magendie's solution and a saline enema of 120 c.c., containing 20 c.c. of whiskey and 1-30 grain of strychnine. The hypodermic stimulation was administered, consisting of the following: Fluid extract of digitalis, 1 minim; camphor oil, 10 minims; strychnine sulphate, gr. 1-50; caffeine benzoate, 2 grains. These were given in alternation, so that one injection was given every hour. On the following day the patient felt very much brighter, and was willing to talk and answer all questions. The hypodermic stimulation was now given every two hours, and a saline enema of 150 c.c., containing 15 grams of whiskey, was given every six hours. The patient having vomited some dark-brown fluid, her stomach was washed out. On the third day she did not vomit any more. An enema was now given, which was followed by a number of movements. She kept on improving, her highest daily temperature after the operation being between 101° and 102°. Stimulation was gradually diminished. On the fifth day pus was seen to appear through the second stitch from above. Later on one of the lower stitches discharged pus; then pus came from nearly all of them. On the seventh day some stitches at the lower end of the wound were removed, in the expectation that the pus came from a site near the stump of the appendix, but it proved that the pus at this place did not come from the peritoneal cavity, but from above the fascia. On September 11 a large quantity of pus was discharged at a place above the umbilicus, evidently coming from the peritoneal cavity. On the following day this place, above the umbilicus, was opened more widely under anesthesia. It led into the peritoneal cavity to the left and upward. A large drainage tube and some gauze were introduced. On September 20, and a few days following, some feces were discharged from the wound. On September 24 no more feces were found, and the wound became clean. The further course was uneventful. The patient was discharged cured on October 27.

Case VII. Mrs. K. D., thirty-nine years old. History of a slight attack six weeks ago. The present attack began November 29, 1903, with severe pain in the right iliac region, and later on became generalized. She had no chill. She was nauseated, but in the beginning did not vomit. She had diarrheal stools. Later on the pain became worse, the fever rose, vomiting set in, and was followed by general depression. When seen on November 30 her tongue was dry and coated, the abdomen extremely tender, especially in the right iliac region. There was general rigidity, which, however, was less marked on the extreme left of the abdomen. Great tenderness on rectal examination, especially toward the right. Temperature 102.6°, pulse 116. Operation November 30, 1903, sixteen hours

after the beginning of the attack. As the rigidity was comparatively slight at the extreme left border of the abdomen, I concluded that that part was not yet invaded, and therefore made my incision to the right of the median line, judging that this would be about midway betwen the right and left limits of the pus. The right rectus incision (Kammerer's) having been made, my assumption proved to be correct. The free seropus, which at once flowed out, extended to within three inches from the left border of the peritoneal cavity. With that exception, the whole abdominal and pelvic cavities were full of a thin seropus. The appendix, which had a small perforation, was removed. Lavage with saline solution. Layer suture. No drainage. Her recovery was rapid. The temperature became normal on the fourth day, and remained so. Gas was not expelled till the second day after the operation, although the rectal tube was introduced. The bowels did not move until the fifth day, when an enema was given. Healing by primary union.

Case VIII. L. H., female, seven years old. The patient was attacked with appendicitis in the course of a tonsillitis which began on December 20, 1903. On December 23, while the throat was improving, she complained of abdominal pain, mainly on the right side. This pain became more generalized, but later on again became localized on the right side. The patient felt fairly well, and, contrary to the family physician's orders, left her bed, and was also up a good part of the following day, December 24. On that day, at 6 P.M., the abdominal pain suddenly became very severe, especially on the right side. Some distention of the abdomen set in. There was no vomiting. On December 25 her general condition became poorer, the abdominal pain increased, the distention became more marked. The family physician advised operation, and the patient was taken to the hospital. On admission there was still a little exudate on the left tonsil. The expression on the patient's face was anxious and her appearance that of a septic case. The abdomen was distended and tympanitic. Tenderness and rigidity were found over the entire abdomen, except in the splenic and epigastric regions, but they were more marked on the right side than on the left. Tenderness was most marked above the right Poupart's ligament, where an indefinite mass could be felt, and a dull percussion note was obtained. Per rectum, distinct bulging was found on the right side, and tenderness was extreme. Pulse 136, temperature 103°. Operation on December 25, 1903, at 8 P.M., twenty-six hours after the onset of the diffuse peritonitis. Median incision from about three inches above the umbilicus to the pubes. Seropus at once exuded from both sides of the median line. The pus was diffused through the greater part of the abdominal cavity and the pelvis. No adhesions anywhere except in the right iliac fossa, where the small intestines and the cecum were matted together by rather fresh adhesions. On separating these a large abscesss, containing thick yellow pus of a fecal odor, was opened. At the bottom of the abscess was the appendix, 2½ inches long, pointing downward, and inward, adherent to the posterior wall of the abdominal cavity. It was perforated near its base at the side opposite its mesentery. After its removal the peritoneal cavity was thoroughly washed with saline solution. The abdominal wall was closed by through-and-through silk sutures, without drainage. On the following day she vomited five times. Lavage of the stomach was resorted to, after which the vomiting did not recur. She improved steadily. Her bowels were moved on the fifth day by an enema. Her recovery was uneventful, except for the occurrence of stitch abscesses, which cleared up promptly after the stitches were removed on the fourteenth day.

Case IX. J. R., male, thirty years old. No history of previous attacks. On March 15, 1904, pain in the right iliac region, which subsided almost completely on the next day, leaving only slight tenderness. On March 20 the pain became very severe, and extended to other parts of the abdomen. The patient became nauseated, but did not vomit. Rectal and vesical tenesmus set in. On examination, March 21, his abdomen was rigid, distended, and very tender. The rigidity, though more marked on the right side, extended well over to the left border of the abdomen. The tenderness appeared to be greater on the left side than on the right. At the uppermost part of the abdomen the tenderness was but slight. On rectal examination, a mass was felt to the right and posteriorly. This examination was quite painful. Temperature 102.8°, pulse 122, respiration 28. Operation on March 21, twenty-five hours after the onset of diffuse peritonitis. Median incision from 2½ inches above the umbilicus to the pubes. Thin pus ran out. Adhesions walled off the region of the appendix. On severing these thick pus was found. The partly gangrenous appendix was removed and the peritoneal cavity washed with saline solution. Pus was found in the pelvis, in the left iliac region, as well as the right, and in both lateral abdominal regions. The peritoneum was extensively injected. Closure of the abdominal wall by through-and-through silk sutures. No drainage. Healing without suppuration.

Case X. R. H., female, nineteen years. Was attacked with very severe pain in the right iliac fossa on April 22, 1904, at 8 P.M. Did not sleep all night. Vomited next day and the day following. On the morning of April 25 she had a chill lasting almost an hour, followed by fever and sweating. Her condition grew steadily worse. On examination a slight bulging was found in the right iliac fossa, where a tense mass could be palpated, and dullness was obtained on percussion. Tenderness and rigidity were greatest at this place, but also well marked higher up, and on the left side about as far as four inches beyond the median line. There was tenderness on rectal examination. Temperature 104.6°, pulse 124, respiration 24. Operation on April 25, 1904, at 10 P.M., seventy-four hours after the beginning of the disease and seventeen hours after the prolonged chill which marked the onset of the diffuse peritonitis. Right rectus incision (Kammerer's). Free seropus ran out from all sides. In the right iliac fossa adhesions covered a collection of thicker pus. Removal of the appendix which was covered with a fibrinous exudate. Lavage with saline solution. Closure of the wound in layers. No drainage. The patient recovered nicely. She received an enema on the third day. On the eighth day the temperature rose again to 102.8°, and on the following day a well defined mass was felt to the right of the upper part of the incision. On May 6 this was opened under anesthesia by going through the old scar. Many adhesions between coils of intestine were encountered. These were separated, and an abscess was evacuated. Hereafter the recovery was undisturbed.

Case XI. M. M., female, twenty years old. On June 17, 1904, she began to have abdominal pain, which became severe on the following day, and con-

tinued to increase until the operation, four days after the onset. On examination, June 21, the abdomen was found hard and uniformly distended. The umbilicus protruded. On percussion the resonance was very tympanitic, except at the right inguinal region, where the note was more dull. Both recti were rigid, the right more so than the left. No distinct mass could be felt, but there was a sense of resistance in the right iliac fossa. Tenderness on both sides, most marked in the right lower quadrant. Leucocytes 28,000. On admission to the hospital at 12 M., the temperature was 101.2°, the pulse 116, respiration 28. Two hours later the temperature was 102°, pulse 124, respiration 30; at 4 P.M., temperature 102.8°, pulse 136, respiration 32. Operation at about 4:30 P.M. Incision from midway between ensiform cartilage and umbilicus to the symphysis. The intestines were distended; turbid yellow fluid welled up from the pelvis. A large abscess was found in the right iliac region; more pus was found in the pelvis, behind the uterus and in front of it, and in the left iliac fossa. These were so well walled off anteriorly that quite some force had to be used to loosen adhesions, but posteriorly and upward no adhesions could be found. The upper coils of intestine, which appeared to be clean, were covered with gauze pads, and then the pus was flushed out with salt water poured in from pitchers. It was then seen that the pelvis and the adjacent coils of gut were covered with a thick fibrinous deposit. The appendix was gangrenous; it was ligated, removed, and the stump seared with the pacquelin. Closure by through-and-through silk sutures. No drainage. The patient was at first stimulated with fluid extract of digitalis, 2 minims, strychnine sulphate gr. 1-30, camphor oil, 15 minims, alternately every half hour, the stimulation being gradually diminished as the patient improved. On the first three days Magendie's solution was also given as needed, from 12 to 14 minims a day. The rectal tube was passed on the second and third days, evacuating some gas. On the fourth day the bowels moved spontaneously. On June 26 a few stitch canals at the lower angle of the wound were reddened, and a small area of skin was gangrenous. A moist dressing was applied. On July 3 the gangrenous tissue had sloughed off, leaving an irregular wound. All the stitches were removed. On July 16 she got up, with a clean, granulating wound, and was discharged on July 24.

It is difficult to say in this case when the diffuse peritonitis commenced, but it was quite evident that, as the pus progressed from one section to another, from the right iliac fossa to the pelvis and thence to the left iliac fossa, the peritoneum at each of these sections made a rather strong, yet unsuccessful, effort to localize the process, until finally it became diffuse.

CASE XII. J. M., female, nineteen years old. Cramps and abdominal tenderness began July 14, 1904, accompanied by vomiting, and increased up to the time of the operation, July 16. The patient, a well-nourished, somewhat corpulent person, with slightly distended abdomen, presented a slight bulging to the right of the umbilicus, and just below its level. Here a mass of the size of an orange was felt, the tenderness being very great. Both recti were tense, the right more than the left. Per rectum, some bulging was found in Douglas's cul-de-sac. In the next few days the area of tenderness had extended to the right hypochondriac and the upper part of the umbilical region; the abdomen was also somewhat more distended. Incision through the middle of the rectus, parallel to its fibers. A large quantity of seropurulent fluid welled up. The appendix was on the medial side of the cecum, surrounded by omentum. On liberating this a small pus cavity was opened. The appendix was gangrenous in its entire length, and was perforated near its base. It was removed and its stump seared with the paquelin. Lavage with hot saline solution. Closure by through-and-through silk sutures. No drainage. Stimulation with strychnine and digitalis in alternation was given every two hours for more than three days, and was then diminished. Morphine was given as needed for three days. Gas was passed on the second day; the bowels were moved by an enema after four days. The wound margins in the lower part became gangrenous, and the greater part of the wound suppurated. It was treated by separating the edges of the wound where necessary, and tamponing with sterile gauze. The wound soon cleaned up and filled with healthy granulations.

CASE XIII. A. H., male, forty-two years old Had two previous attacks, a short one in 1903 lasting one day, and another in 1904, lasting about a week. On February 8, 1905, he was seized with cramp-like pains in the abdomen after the ingestion of rhubarb. His condition gradually grew worse, and toward evening became unbearable. On admission to the hospital, February 9, 1905, he was suffering intense pain. The expression of his face was pinched, the tongue heavily coated and dry, the abdomen considerably distended. There was tenderness over the entire abdomen, more particularly over the right iliac fossa. The abdominal muscles were rigid, only at the extreme left they were somewhat less resistant. Temperature 101.8°, pulse 108, respiration 30. Operation on February 9, at 8:30 A.M., about seventeen hours after the onset of the diffuse peritonitis. Incision through the right rectus, about 1½ inches to the right of the median line, and parallel to it, a large amount of purulent fluid escaped, coming from all directions. The appendix pointed upward and backward, and was imbedded in omentum. At its tip there was a small gangrenous area. It was tied off, removed, and the stump charred. Lavage with saline solution. Closure of the abdominal wall in layers, without drainage. The patient vomited frequently on the following two days. He passed gas readily when the rectal tube was introduced. The bowels were moved after six days by an enema. This patient, while his peritoneal cavity remained clean, developed a most extensive suppuration of the abdominal wall, causing sloughing of a large portion of fascia. The skin wound had to be opened almost in its entire extent, and a counter incision had to be made on the right side. The wound healed by granulation.

CASE XIV. C. K., male, ten years old. On July 23, 1905, he began to complain of pain over the entire abdomen. With very short intermissions the pain continued till his admission to the hospital on July 27. His features were pinched (facies hippocratica), the color of his face was slightly bluish; his eyes were at times somnolent, at times unsteady; his abdomen was widely distended, the muscles tensely contracted. Temperature 104.6°, pulse 156, respiration 40. His sensibility was reduced. He was in that stage of peritonitis in which severe pain is no longer complained of; on being questioned, he declared that he had no pain. In a word, he was moribund. Although I recognized this condition, and stated that I was practically sure

he would die, I determined to give him the only possible chance, and operated. Complete median incision. Pus in enormous quantity was found distributed throughout the peritoneal cavity. Removal of the appendix which was found in the pelvis perforated. Lavage as usual. Closure without drainage. The patient gradually sank, and died two hours later.

Case XV. F. N., male, fifteen years old. On December 9, 1905, he began to have pain over the entire abdomen, most marked in the right iliac fossa. Cathartics were given, but the pain, instead of letting up, increased. On admission to the hospital, December 12, his abdomen was very sensitive and rigid on both sides; only at the uppermost portion the pain was less marked. The greatest sensitiveness was at the region of the appendix. Rectal examination was very painful, particularly on pressure against the anterior wall. Operation on December 12, seventy-five hours after the beginning of the peritonitis. Median incision from 2½ inches above the umbilicus to the pubes. Pus flowed out from all sides, and could be followed to the extreme left of the peritoneal cavity. Here and there adhesions were found between coils of intestine, behind which pus was found. The strongest adhesions were above the appendix, which was perforated and partly gangrenous, and presented a fecal impaction through its perforation. Removal of the appendix. Lavage with saline solution. Closure with through-and-through silk sutures, without drainage. Healing by primary union.

Case XVI. Mrs. W. L., thirty-four years old. On January 10, 1906, she began to have a sudden pain in the abdomen, which gradually increased and extended from the epigastrium to the pubes. Next day the pain was more pronounced in the right iliac fossa than elsewhere. A cathartic was given, causing many movements of the bowels. On admission to the hospital, January 12, her face had a drawn, anxious expression; her eyes were bright, restless, alert; her tongue was dry and coated with brown crusts. Her pulse was 136 and very small, but regular; respiration 36, entirely costal; temperature 102.6°. Abdomen everywhere rigid and painful on pressure. Rectal examination painful. The patient's appearance was so alarming that she was sent at once from the examining room to the narcotizing room, and was operated within an hour of her admission, fifty-three hours after the beginning of the peritonitis. Incision in the median line from near the ensiform cartilage to the pubes. Free pus extended all the way over to the left iliac fossa and above the umbilical region. The appendix was thick, reddish brown, gangrenous. It was ligated, removed, and its stump charred. Lavage of the entire peritoneal cavity. The patient's condition was very bad throughout the operation. While lavage was being performed, the pulse, which had been extremely weak all along, could not be felt any more, and she stopped breathing. A cadaverous pallor at the same time made it appear as though she had actually died on the table. The operation was continued, however, with the utmost despatch, while one assistant was making artificial respiration, and another one prepared to give a saline infusion. After a few minutes the patient began to breathe again. A few through-and-through silk sutures were introduced to close the abdomen without drainage. The venous infusion was given, and the patient gradually recovered from her shock. For a few days after the operation the temperature remained high, reaching 105° on the sixth day; then it gradually dropped, till from the tenth day on it was fairly normal. The pulse remained weak for a long time, and required a good deal of stimulation. She passed gas on the second day, and her bowels moved on the fourth day. The wound healed by primary union throughout, only a little redness appearing at a few stitch canals, which subsided on applying moist dressings. The stitches were removed after fourteen days.

Case XVII. G. T., male, thirty years old. Operated on March 26, 1906. His abdominal pain, which was very severe from the start, began seventy hours before the operation. On admission to the hospital he had an anxious expression, his abdomen was rigid on both sides. Tenderness was extreme, except at the uppermost part, where it was less acute. Pulse 120, temperature 103°, respiration 32. The pulse was very weak. The patient looked septic. A bad prognosis was given. Median laparotomy from four inches above the umbilicus to the pubes. Pus escaped from both sides. On approaching the appendix more pus welled up. The appendix was extensively gangrenous; a few fecal concretions lay near it. It was removed. Pus escaped from the pelvis, from the left iliac fossa, from both flanks, from under the transverse colon, from behind the liver. Lavage with saline solution. Through-and-through silk sutures closed the abdomen without drainage. Time, twenty minutes. After the operation the patient's temperature declined, and on the third day reached the normal. On the second day, and each day thereafter, an enema was given, and this resulted in the discharge of gas and feces. For five days the patient did very well. On the sixth day, after having felt quite well in the morning, his temperature rose from 98.6° rapidly and steadily to 106.1° at 4 P.M., and at 5:30 he died. His appearance was that of an acutely septic case. About noon he had vomited a large amount of brownish fluid, which, unfortunately, was not kept for laboratory examination. An autopsy was not permitted.

Case XVIII. W. A., male, twenty-six years old. Admitted to hospital April 16, 1906. Had one previous attack in February, 1906, lasting ten days. This attack began on April 12, 1906, with slight colicky pains on both sides, followed by vomiting. Next day the pain was very severe, especially on the right side; it spread more and more. He vomited every day since the beginning of the attack, and belched continuously. He never had any chills, but had fever. His bowels did not move, although he had three injections; these were returned clear, with the discharge of a considerable amount of gas. Micturition was difficult to start. On admission to the hospital he looked very low indeed. His face was flushed, his conjunctivæ slightly jaundiced, his tongue very much furred. Pulse, 116, rising after a few hours to 154; temperature 101.2°, rising in a few hours to 103.4°; respiration 28, entirely costal. The thighs were flexed, the hands and feet were cold. The abdomen was evenly, but not excessively distended; it was rigid and tender, and did not move with respiration. The operation was performed at the end of the fourth day of the attack. Long median incision. A seropurulent exudate flowed out. The peritoneum was intensely injected. The left side was explored first. In the left lumbar region there was an area of intestine thickly coated with fibrin, showing that the pus had reached the left side at an early stage of his attack. In the region of the appendix a large amount of pus was evacuated. The appendix was covered with omen-

tum; its tip was gangrenous, and the omentum overlying it contained a small abscess. The appendix was removed and its stump charred. The intestine in that region was covered with a layer of fibrin, which extended along the ascending colon to the liver. Here another collection of pus was found, and again another welled up from behind the gall-bladder. Lavage with saline solution. Through-and-through silk sutures. No drainage. The pulse was very poor after the operation. A hypodermoclysis was given, followed by an intravenous infusion. The patient's abdominal pain continued after the operation; his temperature continued to rise up to 106.7° on the day following the operation, when he died. The progress of his sepsis was not interrupted at all by the operation.

A perusal of this report of cases will, on the one hand, give us pleasure through the knowledge that so much can be done for them; but, on the other hand, will cause us to regret that a small number of patients could not be saved. Careful reflection will doubtlessly lead us to the conclusion that, while improved methods of treatment will enable us to save many cases that were formerly beyond our therapeutic ability, yet there are other cases where the general systemic affection has progressed to such a stage that the removal of the infectious material from the peritoneal cavity cannot save them, no matter to what degree of perfection the method of operation has been elaborated. The only advice to be given in regard to these is, not to let them run till they have reached a dangerous stage, but to operate as soon as the diagnosis has been made.

HOSPITALS CONNECTED WITH MEDICAL SCHOOLS.

By D. B. St. JOHN ROOSA, M.D. LL.D.,

NEW YORK.

PRESIDENT OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

A RECENT article in the MEDICAL RECORD,* "Hospital Reform in a New Light," has led me to believe that there is a very great misunderstanding in some minds—I hope not in many—with reference to the preeminent usefulness of hospitals connected with medical schools. The writer of the article in question says what is entirely true, when he remarks that "such institutions are to all intents not primarily places for the healing of the sick, but are subsidiary instruments for medical education and clinical instruction," but, to my mind, he is quite incorrect when he proceeds to say that "of necessity such hospitals must first consult the interests of the student-body rather than that of the indigent sick." It is the contention of those who maintain hospitals for teaching purposes, that the interests of the patient and of the student observing the cases with the teachers, are one and the same, that no kind of antagonism exists between them, and that the hospitals are the very best for the sick that can possibly be organized and maintained. It is almost impossible that any continued abuse, such as maltreatment or neglect, or any unkindness, would be allowed to obtain in a teaching hospital for it is under the supervision, not only of the physicians in charge, but also of the doctors and students of medicine who frequent its wards. It would be a great slander upon the physicians and surgeons who attend such hospitals to intimate that there is anything in their service which necessarily sacrifices the interests of the patient for those of the student. It is impossible that any interest of the student could be favored by anything that could be harmful to the patient, even as to the matter of being examined before a class. That very thing of itself insures, if it is necessary to insure any such thing on the part of the physician, kindly treatment, for no body of students or practitioners would ever submit for any length of time, or for repeated times, to see patients abused by physicians who were exhibiting them. The writer of whose article I am speaking may suppose that such hospitals favor commercialism, rather than humanitarianism, but this is an incorrect conception of the character and conduct of those who attend such hospitals. The man whose scientific bent of mind causes him to devote a large portion of time to the medical care of the poor, knows perfectly well that high appreciation on the part of his fellow members of the profession, and a more or less enduring fame and a gradual increase in his private practice, are what he may obtain—the former directly, the latter indirectly—from such work. The history of attending physicians and surgeons of teaching hospitals in this country, of which there are not enough, shows that in all the characteristics of a high standard in ethics, and in their general reputation for liberality and tenderness of heart, they are not inferior to their brother practitioners. There is nothing in their devotion to their clinics that necessarily fosters mercenary or commercial feelings. The general practitioners of the country, those not expert in particular departments, give them their confidence to a degree that shows that the profession as a class thinks very highly of them.

What goes on in Germany, France, and Austria, where all the hospitals are teaching hospitals, where all the hospitals are taken care of by the municipality or the general government, does not show any predominance of the commercial spirit in the profession. The State of Pennsylvania gives an annual and generous donation to each of the hospitals connected with medical schools of the city of Philadelphia. I have never heard that the profession in general in that city, has ever objected to such a gift on the part of the State. Hospitals connected with medical schools will be found to advance the interests of the State there as everywhere else. It is to these great cities that the earnest students of our time and the years preceding us have gone for clinical instruction, without which a rational practice of medicine is scarcely possible. The writer of the article I am reviewing claims that in these teaching hospitals the poor are not treated from purely charitable motives, but as a matter of gain and aggrandizement. It is a principle in law that no man's motives can properly be questioned so long as his action is correct. No argument would be listened to for a moment in any court in our country, where it was admitted that the action complained of was of itself beneficial and meritorious. Our writer must admit that, whether the attending surgeons or physicians of hospitals connected with medical schools are or are not actuated by charitable motives, they are quite as likely to be as men who attend hospitals where students are not admitted. We do not suppose that the presence or the absence of students has anything to do with the charity of the professional attendance.

It is true, as the writer whose paper we are criticising states, that "for a number of years, whenever the city's budget was made up, the connected hospitals with medical schools found it

*MEDICAL RECORD, October 27, 1906.

necessary to have representatives appear before the Board of Estimate and Apportionment to oppose the sentiment against their securing a share of the city's bounty." The men who opposed the legal and humane appropriation of money to aid in the support of indigent hospitals were not successful in their efforts. The city authorities considered the opposition to these payments as not being well founded, and the payments continued to be made, although modified as to method of payment, from that of a lump sum to a per diem allowance for absolutely poor patients treated. To this extent, therefore, the writer's contentions have not been agreed with.

From the general trend of the paper which I am reviewing, it would be supposed that the attending physicians of hospitals attached to colleges were directly making large salaries and contributing nothing towards the maintenance of the institutions where they teach. The history in this new country of such institutions, shows that the most charitable men in the profession are those who not only give their services to the poor, but who, as in some institutions, at least, give their services in lecturing absolutely without fee, and also contribute to the maintenance of the institution by individual subscriptions. The medical colleges, under-graduate and post-graduate of America, have never been able, as in many foreign countries, to fall back on the government for their foundation and establishment, but there have never been wanting those in the olden time, and in the present, in this city, in Boston, in Philadelphia, in Chicago, and in other large cities of the country, to devote not only their time but also their money to the upholding of a high standard of medical education. That this reacts to the advantage of the community at large scarcely anyone would deny. Were the hospitals connected with medical schools abolished in New York City, New York would no longer attract men to study medicine or to enlarge their experience as practitioners; the profession would then assume a position of practising medicine solely for gain and for experience to be devoted to private patients. It is hardly to be supposed that the State would welcome any such change.

When the last Constitution of the State of New York was created, as I have before stated in writing on this subject, the Honorable Joseph H. Choate, who is generally conceded to be the head of the Bar in New York, who was a prominent member of this body, and who is, besides this, personally interested in the care of some of the charities of the city, stated in one of the speeches that he made before the Constitutional Convention, that the State of New York recognized two kinds of charitable institutions, one in which the whole support was derived from the State, the other in which the State—and he meant by State the city or State government—provided a portion of the funds necessary, the larger amount being furnished by the public who were interested in the welfare of the institution. The oldest hospital in this city, the New York Hospital, has always been a teaching hospital, its amphitheaters have always been open to practitioners of medicine to witness its operations and to hear its lectures. Its physicians and surgeons have generally been teachers in the medical colleges of New York. It was subsidized by the Colonial government under which it was founded, and this subsidy was maintained by the State of New York until 1856. Besides this, sailors who paid hospital money from their wages to the United States were taken care of in the institution for this money. Has the New York Hospital been any the less a philanthropic institution because it has been a teaching hospital? Valentine Mott, Kearney Rogers, Gurdon Buck, Alfred C. Post, Willard Parker, William H. Van Buren, in surgery, and Alexander Hosack, Joseph M. Smith, Thomas Cock, and Henry D. Bulkley, in medicine, regularly gave instruction to medical students and practitioners, and acquired renown, which accrues not only to their memory, but to the glory of New York City. At one time the University Medical College of this city received an annual subsidy; at another time Bellevue Hospital Medical College was upon land leased to it by the city for a moderate sum. It seems to the present writer that these things are to be commended, and not to be made a source of reflection upon the members of the profession who are teachers in hospitals connected with medical schools. I am perfectly well aware of the style of argument that has been used in the Board of Estimate and Apportionment against giving money to hospitals, because they were connected with colleges, and I have not failed to be present and to answer our accusers. The suffering poor of this city, whether properly or improperly, whether rightly or wrongly, know that they are tenderly treated in the hospitals connected with medical schools, and cheerfully enter them. It will be a bad day for the charity of New York and Philadelphia, as well as for their medical renown and usefulness diffused over the whole nation, if hospitals connected with medical schools do not continue to receive the support of the intelligent and charitable givers of our city, as well as aid from the city or State. We who are active in maintaining them will never apologize for our efforts to convince both sources of our worthiness. We are of much more service to the community and the Government than they are to us.

MORE ETHER; LESS CHLOROFORM.*

By JOSEPH E. LUMBARD, M.D.,
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ANESTHETIST TO THE HARLEM HOSPITAL

THERE are few subjects to which a medical student gives less attention than that of anesthetics. Sir Frederick Treves said: "There is a widespread impression that to give chloroform is a minor act; the power comes with the diploma, and the significance is sometimes emphasized by the remark: 'Well, if a man cannot give chloroform, what can he do?'"

Ether and chloroform are still our chief anesthetics, and have been rivals for the surgeon's favor for more than half a century. Ether is often preceded by nitrous oxide or ethyl chloride, either of which renders the administration shorter, safer, and pleasanter.

Contrast the old way of strangling the patient into insensibility by the cone method, with practically no air, and that of using gas or ethyl chloride as a preliminary, and the patient knowing nothing of taking ether. A medical friend who had experienced both ways said he knew of no more striking illustration of hell and heaven than taking ether by the two methods mentioned.

Nitrous oxide is the safest and most agreeable anesthetic and it is by far too little understood and used. This is, perhaps, natural, as our medical colleges teach too little about it. Furthermore, it is not always easy to obtain, and the instrument for its proper administration is quite expensive.

*Read before the meeting of the Harlem Medical Association, October 3, 1906.

I highly recommend it for simple operations, or those of short duration, or for painful examinations and dressings. It is not contraindicated when heart or lung disease is present, but it should not be employed in cases with arterial degeneration or with aneurysm. In young children under the age of five years ether is preferable. Its most important use in surgery at the present time is as a preliminary to ether. Given in this way, it greatly lessens the patient's suffering and is a time saving measure.

Ethyl chloride has been favorably known for many years as a local anesthetic, but for the past few years it has been used as a general anesthetic, and in many localities it is trying to displace nitrous oxide in general surgery, especially as a preliminary to ether. The inhalers for its administration are too numerous to mention.

For short operations, needing more prolonged and deeper narcosis than is usually obtained by nitrous oxide, ethyl chloride is of advantage. It is also better for children than nitrous oxide. It should not be used in cases where there is much thickening of the tissues of the neck, as in laryngitis. Its use is also contraindicated in neurotic and alcoholic patients. Although ethyl chloride is cheap and easy to carry around and administer, we should not lose sight of the most important fact that it is not as safe as nitrous oxide. Thos. D. Luke, Edinburgh, in the *Lancet*, May, 1906, reports 22 deaths, and W. J. McCardie, *British Medical Journal*, March 17, 1906, reports 38 deaths from its use.

For practical purposes we might say that ethyl chloride is to nitrous oxide as chloroform is to ether.

Other anesthetics and drugs sometimes used in combination with ether and chloroform are: Scopolamine, somnoform, morphine, and atropine. Scopolamine is usually given in doses of from 1-150 to 1-100 gr., combined with 1-8 to 1-4 gr. of morphine in from one to three doses, administered from one-half to one and one-half hours before the operation, preferably in divided doses. The long and disagreeable after-effects and the numerous deaths reported from its use will prevent the drug from becoming popular, although many French and German anesthetists continue to use it without hesitation and with reported good success.

Somnoform is merely a mechanical mixture of ethyl chloride (60 per cent.), methyl chloride (35 per cent.), and ethyl bromide (5 per cent.). It is more expensive, leaves a very disagreeable odor, and has an unpleasant effect upon the patient. It is not considered as safe as pure ethyl chloride.

A hypodermic injection of morphine from 1-8 to 1-4 gr., with or without atropine sulphate 1-150 to 1-100 gr., is often given from twenty to thirty minutes before operation in alcoholics and athletes.

Atropine is often used hypodermically in cases where the mucous secretions are excessive along the respiratory tract; also to stimulate the heart.

Ether.—As the usual modes of administering ether are well understood, I will refer only to two that are of value, but not generally recognized—namely, the drop method, and ether narcosis obtained by giving warm ether vapor per rectum.

The drop method should begin slowly, as with chloroform. The most simple and, to my mind, one of the best ways of giving it is by the open, continuous method, after the so-called surgical stage has been attained by gas-ether with the Bennett inhaler. Many fail in this method because they use too small a mask, or do not constantly drop the ether. A mask is used similar to the Esmarch, but larger, and is covered with two thicknesses of stockinette; the ether is dropped constantly, from 120 to 150 drops per minute, until the face flushes or the patient feels drowsy; then extra gauze is applied and the ether continued until the patient is well under its influence; the extra gauze is then removed and the ether continued as before. This simple and safe method has much to recommend it. The patient's breathing and appearance are more natural than under any other method of anesthesia, his recovery is rapid, and disagreeable after-effects are usually absent.

This method is highly recommended for children and old people. Miss Alice Magaw, anesthetist to Drs. Charles and William Mayo of Rochester, Minn., has used it exclusively in over 14,000 cases without any deaths or serious results. Even the struggling and feeling of strangulation rarely occur by this method. For a dropper I recommend a wick made of gauze or cotton, and placed alongside the cork in the original ether can. It is simple and convenient and always easy to obtain.

Rectal etherization was first attempted by Dr. Pirogoff in 1847. Drs. Robert F. Weir and William T. Bull tried it in several cases in 1884, but with only partial success. Drs. John H. Cunningham and F. H. Lehay of Boston, Mass., have obtained most excellent results with this method and have a record of over one hundred cases. The first important preliminary to this method is that the patient must be on a low diet for two or three days before the operation. A saturated solution of magnesium sulphate, two ounces, should be given twice before the operation. Sufficient time should elapse between the doses, so that the effects of one may be obtained before the other is given. As many enemata should be given as are necessary to make the rectum clean. Breakfast before the operation should consist of two ounces of beef tea. The rectum must be entirely emptied of all liquids and gases. A bottle with a capacity of 34 ounces, containing 29 ounces of ether, is placed in a bath of warm water of from 80° to 90° F. A rectal tube is then introduced from ten to fourteen inches and the warm ether vapor is pumped into the rectum until the patient is well narcotized. The apparatus resembles the Junker inhaler, except that the bottle is larger and the outgoing tube connects with the rectal tube. Two or three compressions of the bulb per minute will usually suffice. This method affords the surgeon a free field in operations upon the head, face, mouth, nose, throat, ear, and neck, and is also of value in patients suffering from lung trouble. The absence of the ether inhaler in operating on the head, face, and neck not only lessens the technical difficulties of the operator, but also the chances for sepsis. The patient is easily affected, there is no sense of suffocation, less ether is used, the stage of excitement is absent, and recovery is more rapid and less disagreeable. Patients who have taken ether by inhalation and per rectum prefer the latter method. There are no disadvantages, excepting in some cases a few colicky pains.

Another advantage of this method is that the rectal administration of ether takes the place of chloroform, which has always been used almost exclusively for head surgery. Ether is safer, and the anesthetist is out of the surgeon's way.

The objections to ether are its irritability to the air passages, the nausea and vomiting, and the cerebral excitement. Ether, as is well known, is inflammable, but if used below the level of the artificial light there is practically no danger. Another objection is the possibility of causing ether pneumonia. These are all minimized by the preliminary use of nitrous oxide, and by the drop method; also by the rectal method. Washing out the stomach

after giving ether greatly lessens, and oftentimes completely does away with, postoperative vomiting. The lavage should be immediately after the operation, before the patient regains consciousness. The drop method will greatly lessen the possibility of pneumonia, and I have never heard of its occurring in cases of narcotization by the rectal route. Ether pneumonia is claimed to be caused by the anesthetist and not by the anesthetic.

The advantages of ether are: (1) The first and all important advantage is its safety. (2) It is stimulating, whereas chloroform is depressing. This can well be demonstrated when you have a flagging pulse under chloroform, and change to ether. (3) Ether will stand more abuse than chloroform, which is a great advantage when one is obliged to have a novice administer the anesthetic. (4) Ether usually gives warning of approaching danger, which chloroform seldom does. (5) The practical working range of ether is much wider and there is less fear of accident from an overdose than when chloroform is used.

In this connection it may be said that more than 65,000 persons have been etherized at the Massachusetts General Hospital and the Boston City Hospital, and as far as can be ascertained there has not been a single death due solely to the anesthetic. (See G. W. Gay, International Textbook of Surgery, p. 421.) In New York City, according to the records of the Board of Health, communicated to me officially by Chas. J. Burke, M. D., the Assistant Registrar, from 1901 to 1905 the deaths from chloroform numbered 40; from ether 21. Considering the immensely larger number of etherizations, this shows very forcibly how much safer ether is as an anesthetic.

The contraindications of ether are: (1) Protracted operations about the mouth, jaw, nose, and pharynx. The contraindications in these cases can be overcome by the rectal method. (2) All operations requiring the use of the actual cautery. (3) Any acute pulmonary irritation, or advanced or acute renal disease. However, the use of ether cannot be excluded by any hard and fast rule.

Chloroform.—When chloroform is given by the open mask method the patient should always have plenty of air. Our English friends go as far as to say that the mask never should touch the face. The Junker inhaler is often used in head surgery. Its principal advantage is that the vapor is pumped through a tube through the mouth or nose. Chloroform is not inflammable, and were it not for its dangers it would be an almost ideal anesthetic. Chemically, it is very sensitive. Light plus air may change it. It should be used from the original bottle. Dust will change chloroform, but not ether.

Chloroform should be administered very gradually; pushing it is dangerous, and it is here that the accidents attending its use are most frequent. The patient is restless; the surgeon is ready to operate; the anesthetist, perhaps a junior, without proper training or experience, fearing the displeasure of the surgeon, pushes the chloroform; in fact, oftentimes he is told to do so; the patient breathes deeply and you get the toxic effects of the drug and sometimes a fatal issue. Most deaths from chloroform have occurred during the first few minutes of its administration, and this is one reason why it should not be used for the removal of adenoids or other short operations, as is commonly done.

The advantages of chloroform are that it has an agreeable odor; it is less irritant to the air passages than ether; it is less apt to cause nausea and vomiting; it occupies less space, which is an advantage in the army and navy service, and it is not so expensive to buy or administer.

Its one great disadvantage, which overshadows all the points in its favor, is the danger attending its use. In spite of this, it will always be the leading anesthetic in warm countries, as ether boils at 96° F., and is not practical for use excepting by the closed method in such climates.

Chloroform is usually preferred in patients with renal or pulmonary disease, in brain surgery, and in tracheotomy. Probably its greatest field of usefulness is in obstetrics. Here the element of fear, which has been so well described by Dr. John Bodine,* is practically *nil*, as the patient welcomes anything that will put an end to her labor pains.

When chloroform is indicated, care and proper management in its administration greatly lessen its dangers. It is contraindicated in cases of fatty heart, in lymphatic conditions, and in adenoids.

Chloroform certainly has its field of usefulness, but I think it is often used where ether could and should be more safely substituted. This is especially true in the two very common operations for adenoids of the pharynx and curettage of the uterus. Dr. T. D. Luke reports 30 deaths from 1897 to 1903 from chloroform administered for adenoid operations.

Comparative merits of ether and chloroform.—Ether is slower in its effect, less pleasant to inhale, more bulky, and more expensive; it is inflammable, sometimes irritating to the air passages, and is often followed by nausea and vomiting; however, it usually gives warning of danger, and is safe under ordinary circumstances.

On the other hand, chloroform is quicker in its effect, pleasant to take, less irritating to the mucous membrane, less bulky and less expensive; it is not explosive, and usually causes less nausea and vomiting; it does not always give warning of danger, and is not always safe.

The merits of each case must be carefully considered when selecting the anesthetic, and neither chloroform nor ether should be used exclusively. Ether, however, being the safer, should always have the preference when it is not contraindicated. After all is said, it is experience that counts more than the anesthetic, or the apparatus that is used.

In order to ascertain the views of one hundred surgeons throughout the United States, I sent to each one a letter, of which the following is a copy:

August 18, 1906.

Dear Doctor:—

I am endeavoring to ascertain the relative favor in which ether and chloroform are now held by the general surgeons in this country, and with that purpose in view I have taken the liberty of sending you, among others, a copy of the following list of questions. The replies to these will be embodied in a paper on "More Ether; Less Chloroform," which I expect to read before the Harlem Medical Association of New York on October 3, 1906.

1. Which anesthetic do you prefer in general surgical work? (a) Ether? (b) Chloroform?

2. Which method of administration?

3. As preliminary to the use of ether, do you prefer (a) Nitrous oxide? (b) Ethyl chloride?

4. In your opinion, do you think anesthetics and their method of administration receive proper attention in the curriculum of our medical colleges?

5. How many deaths have come under your ob-

*International Clinics, Vol. III, Twelfth Series.

servation from the administration of (a) Ether? (b) Chloroform?

Thanking you in advance for your courtesy, I am

Yours very truly,

Seventy nine answers were received from the following surgeons in twenty-three States: Robert Abbe, W. S. Bainbridge, Carl Beck, J. A. Blake, J. A. Bodine, G. E. Brewer, Leroy Broun, J. D. Bryant, W. B. De Garmo, H. B. Delatour, C. N. Dowd, Ellsworth Eliot, Jr., C. A. Elsburg, J. F. Erdmann, R. Guiteras, Frank Hartley, H. A. Haubold, I. S. Haynes, J. W. Hearn, J. J. Higgins, L. W. Hotchkiss, L. J. Ladinski, W. G. Le Boutillier, H. Lilienthal, S. Lloyd, W. H. Luckett, Willy Meyer, Robert T. Morris, A. V. Moschcowitz, L. S. Pilcher, J. D. Rushmore, H. Roth, Parker Syms, M. W. Ware, Joseph Wiener, Jr., Robert F. Weir, and J. A. Wyeth, New York; Lewis L. Basher and Stuart McGuire, Richmond, Va.; F. E. Butts and G. W. Crile, Cleveland; A. E. Cabot, D. W. Cheever, G. W. Gay, F. W. Harrington, M. H. Richardson, and J C. Warren, Boston; William H. Carmalt, New Haven; John B. Deaver, Richard H. Harte, J. W. Hearn, and Edward Martin, Philadelphia; W. H. Doughty, Augusta, Ga.; Duncan Eve, Nashville; Leonard Freeman and C. A. Powers, Denver; F. N. Gerrish and Seth Chase Gordon, Portland, Me.; John M. Gile, Hanover, N. H.; W. S. Halsted, Baltimore; Thomas W. Huntington, San Francisco; Edward J. Ill, Newark, N.J.; Robert W. Johnson and Howard A. Kelly, Baltimore; A. F. Jones, Omaha; W. McD. Martin, Mobile; Archibald MacLaren, St. Paul; Chas. H. Mayo and Wm. J. Mayo, Rochester, Minn.; John B. Murphy, A. J. Ochsner, and N. Senn, Chicago; Roswell Park, Buffalo; H. H. Mudd, St. Louis; Manning Simons, Charleston, S. C.; F. D. Smyth, Memphis; Bacon Saunders, Ft. Worth, Texas; H. C. Tinkham, Burlington, Vt.; A. Vander Veer, Albany, N. Y.; G. E. Vaughan, Washington, D. C.

The following is a summary of the answers received:

Question 1. Sixty-seven preferred ether; 7 chloroform; 1 anesthol; 4 were noncommital.

Question 2. In the case of ether, 38 used the drop method; 16 the Bennett inhaler; 11 the cone; 8 the Allis inhaler; 1 the Blake inhaler. If chloroform were used, 11 preferred the drop method, 1 the vapor method.

Question 3. Forty-eight nitrous oxide; 3 ethyl chloride; 3 morphine hypodermically; 1 morphine and scopolamine hypodermically; 1 A.-C.-E. mixture; 1 anesthol occasionally; 20 nothing or noncommittal.

Question 4. Sixty-eight answered in the negative.

Question 5. Ether, 53 deaths; chloroform, 91 deaths.

The answers to these questions are most interesting and of very great importance. They show that there has come to be an almost universal consensus of opinion in favor of ether, excepting under very special circumstances. Considering that chloroform is so much easier of administration and has less inconveniences, this is a very striking tribute to the safety of ether. The collected statistics show that a revolution has been effected in this matter in the last twenty-five years. While there used to be many men who preferred chloroform, now these are but few. Of all who have answered the question directly, 67 prefer ether, 7 prefer chloroform, 1 anesthol, and 4 are not committal.

The question of a preliminary to the use of ether now interests every surgeon without exception. A few years ago no one thought of the strangling of the patient; now everyone considers this sufficient to justify going to considerable expense and trouble in order to prevent it. Within the next five years no one will think of administering ether without having some method of preliminary narcosis. This is a decided humanitarian advance.

All are agreed that enough attention is not paid to the teaching of the administration of anesthetics in our medical schools. I should not say all, because there are a few men who consider that sufficient attention is paid to the subject under their own supervision. They only serve to emphasize the fact that personal care in the training of anesthetists is needed if they are to be capable of assuming this important duty. His diploma alone justifies no man in giving an anesthetic unless he has had considerable experience.

Some of the expressions of opinion in this matter are so strong that I have felt that I am justified in quoting them. Dr. Robert Abbe says: "Judging by the flower of the graduates after passing examinations and entering hospital service, they show dangerous ignorance." Dr. Joseph D. Bryant says: "No, nor in hospitals, either." Dr. Joseph B. Higgins says: "Students know absolutely nothing about it." Dr. J. B. Murphy says: "I not only never had a death, but never saw one. In Mercy Hospital, where I do most of my operating, the ether is administered entirely by a Sister of the Order of Mercy. Occasionally I use a Bennett evaporator in the Presbyterian Hospital. There the work is in charge of a physician who makes a specialty of anesthetics. I very much prefer, however, to have a woman, and preferably not a physician.

Of course, I did not expect very frank confessions with regard to the number of deaths that take place and have taken place from various anesthetics. The declaration of Dr. Luke that chloroform maintains its popularity among physicians in Scotland, because there are no coroner's inquests, is extremely interesting and suggestive. The answers to this question show that both ether and chloroform have their dangers, unless properly and very carefully administered.

Conclusions.—(1) Ether is more generally used than chloroform, because it is safer.

(2) The drop method of administering ether is very popular.

(3) Nitrous oxide is preferred as a preliminary to ether by nearly all who have used it under favorable circumstances.

(4) Medical colleges do not place enough importance upon anesthetics and their administration.

(5) If more ether and less chloroform were used, we certainly would have fewer deaths.

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Bisulphide of Carbon in Fibrinous Pneumonia.—Luigi Masciangioli says that bisulphide of carbon, when administered internally in fibrinous pneumonia, is absorbed into the blood and acts on the germs of pneumonia, destroying their vitality and neutralizing the toxic products so as to limit the progress of the disease. It is the antiseptic action of the drug through the blood that cures, and it seems to have an elective action on the germs which produce the disease. He describes a number of cases treated with this drug in which it seemed to limit the disease very quickly and recovery was more rapid than is usual in such cases. The temperature fell on the third or fourth day of the disease, and the symptoms all disappeared rapidly. The fall of temperature occurred while hepatization was in progress and the expectoration was very scanty.—*La Riforma Medica.*

AN IMPORTANT FACTOR IN THE CAUSATION AND TREATMENT OF MANY SO-CALLED FUNCTIONAL DISORDERS*.

By CARL G. LEO-WOLF, M.D.,

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Before I start on my paper I beg to remind you that I am not a specialist, but a general practitioner, one who is interested in his work in all its phases and who believes in accepting of the work of others what he thinks meritorious and of benefit to his patients, and who considers himself qualified to make observations of his own and to draw the proper deductions therefrom.

You all know that under the term "functional disorders" we comprise a large number of disturbances in the different organs of the body which we are able to recognize only by the altered function of the particular organ and the concomitant malaise, but into the causation of which pathological anatomy has, so far at least, failed to give us any insight.

We have been accustomed to accept various theories as to the causation of some of these functional disorders and have naturally been disappointed more than once when the exceptions to these theories formed the rule rather than proved the rule.

During the last decade or two a new factor has come to be recognized by some of us in the causation of many of these disorders, and this is "eyestrain." We have been charged with exaggeration and with juggling our records to fit our "pet theory" as it pleases some to call it, though in my opinion it is long past the theoretical stage, and is now a dogma as well established as that certain bacteria will, under proper conditions, produce certain infectious diseases.

Up to now our treatment of functional disorders had to be symptomatic, and in consequence thereof more or less disappointing. But if, as is claimed by us believers in the far-reaching effects of eyestrain, we have found an etiological factor which can cause some of these disorders in even a small percentage of cases, should we not as scientific men endeavor to find these few cases, which can be done easily and without any discomfort to the patient; and should we not sooner give every one of these sufferers the benefit of a doubt before we condemn them to symptomatic treatment, which means many times nothing less than lifelong dieting and drugging and partial or total invalidism?

I shall not go into any more or less learned dissertation about the connection between the eyes and the rest of the body, but I shall leave this part to the physiologist and pathologist, as a general practitioner, I shall now proceed to enumerate to you those functional disorders which I believe to be caused at times by eyestrain and have myself seen to be in some instances directly traceable to it.

Starting with the nervous apparatus, we have first of all those headaches of obscure origin which are still frequently referred to autointoxication, for want of another term more occult or indefinite; it was in these headaches that the etiological factor of eyestrain was first recognized and so universally accepted that many of these patients now consult the oculist or optician without the advice of their physician; but unfortunately this has left the impression on the minds of laymen as well as of many physicians, that these headaches are the only symptom of eyestrain, and frequently I have had a patient say, when I advised him to consult an oculist for some other condition, "Why should I see an eyedoctor and wear glasses when I have never had a headache in my life?" That exasperating condition, both to patient and physician, migraine, blind or sick headache, is in my experience usually caused by eyestrain, and I have still to see the first case of migraine with emmetropia.

Hysteria, this lucus a non lucendo, which is still so named, though we know now that it is hardly ever caused by uterine disease, and simply because we have not taken the trouble to find a better name for it, I have seen repeatedly caused by eyestrain and cured it completely in a short time by combining our usual methods of treatment with those of the refracting oculist.

The same I can say about neurasthenia, which is a disorder of men with sedentary habits and of nervous prostration, which we find usually in women with too much money and leisure hours spent in reading novels in a reclining position; I have not yet seen a case of nervous prostration in a washerwoman nor of neurasthenia in a track-hand.

We have lately accepted the theory that chorea is caused by the same microorganism as acute inflammatory rheumatism, and undoubtedly this is true in quite a number of these cases; but where we cannot find any valvular affection of the heart nor a history of acute arthritis, we will do well to have the eyes refracted, as was shown to me only lately in the case of a girl of ten, who had been treated by others for chorea for the last two years and who has been cured of her choreatic movements through glasses and simple tonics.

Neuralgia, especially that of the trigeminus, I have seen due to eyestrain. Do you not think it advisable to have such a patient's eyes examined before we tell him to submit to an operation like the excision of the ganglion Gasseri, even if we should find only one case in a thousand whom the wearing of glasses will relieve?

To come to the respiratory organs, we find in the nasopharynx frequently recurring "colds" to be due often to eyestrain; one of my friends gets a "cold" whenever the frames of his glasses for compound astigmatism are bent. All physicians know that looking into strong light may cause sneezing, but few will acknowledge that there could be any connection between ametropia and nasopharyngeal catarrh. I have also cured a number of cases of dry hacking cough, accompanied by no local or other symptoms, with the help of the oculist.

Nowadays I do not attempt to undertake the treatment of an asthmatic patient without insisting on their submitting to refraction, as I believe to have proven to my own satisfaction the existence of an occasional ocular origin of asthma.

We would hardly expect to find any effect from eyestrain on the vascular system, and yet I have seen idiopathic arythmia cordis, as well as tachycardia, from this cause. Angio spasms or cramps in the extremities are also a frequent symptom of eyestrain.

That most frequent form of anemia, usually occurring in girls at puberty, which is always combined with obstinate constipation, "chlorosis," is quite amenable to treatment after the proper glasses have been prescribed, and all its symptoms, including the constipation, disappear in a short time. Constipation, with or without chlorosis, is in my opinion frequently coincident with and dependent upon eyestrain, and I have in quite a number of cases re-

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lieved my patients from this disorder with glasses and thereby emancipated them from the habitual use of drugs and enemata. Mucous colitis I regard as a nervous disorder of the intestine due to eyestrain and the constipation caused by it.

By far the most frequent functional disorders, and those which are in quite a number of instances caused by eyestrain are those of the digestive tract, which we combine under the names of biliousness, dyspepsia, nervous or otherwise; indigestion, and the different kinds of perverse chemism of the gastric or intestinal glands. Some, but only a comparatively small number, of our stomach specialists, have been quick to accept this dogma and send their patients to the oculist to perfect the diagnosis and to determine part of the therapy; but unfortunately hardly any of the writers of textbooks on digestive disorders have acknowledged this important effect of eyestrain and continue to ignore the results of the experience of their more farsighted brothers.

Of the disturbances of the urinary organs I have seen a number of cases of polyuria and dysuria in which examination revealed nothing abnormal in the chemical composition of the urine nor any local cause, which cases I have relieved with the aid of the oculist. I can say the same about some of the functional disorders of the female genital organs, such as dysmenorrhea and backache, the bearing-down sensations and heaviness, the congestions of the uterus and adnexa without any apparent anatomical cause, and the so-called disorders of the menopause.

To mention finally some disorders of the trunk, we can surely recognize a nontraumatic noncongenital form of torticollis, which is plainly functional and due entirely to eyestrain in one eye or irregular compound astigmatism prevailing in one eye. The orthopedic surgeon will also be forced to acknowledge that eyestrain is a frequent if not constant factor in the production of lateral curvature of the spine and that the treatment is refractive in these cases rather than reductive. How it would please my teacher, the late Professor Julius Wolff of Berlin, to hear of this new evidence of the correctness of his "law of the transformation of the bones," for the recognition of which he had to fight for years, just as the adherents of the ocular causation of lateral curvature of the spine have to fight now, and from present indications will have to keep on fighting for recognition for some years to come, with the ultimate result of being proven to be in the right.

These are some of the functional disorders which I have personally seen to be caused by eyestrain and which I have cured or at least improved with the aid of the refracting oculist. As to the still quite frequent failures to cure these disorders by glasses, these may be due:

First to the fact that they are by no means always caused by eyestrain; but the only means we have to find out those which are is to have the eyes of every patient of this class examined.

Or they are due to the oculist. Good ophthalmic surgeons are not always good refractionists; some are too busy to spend the necessary time, others have theories of their own and will not listen to the opinion of the general practitioner; also they are very rarely aware of their failures, except in so far as they see the failures of their confrères, though, I am convinced, without realizing that others will see just as many failures of their own.

Further, many oculists who do the best of refraction work have poor results because they do not realize that it is not sufficient to prescribe the right glasses, but that it is their duty to see to it that the glasses are fitted right and therefore leave the choice of an optician to the patient or do the fitting themselves. I have found that the fitting of glasses is an art, mastered by a small number of opticians only, and one that requires considerable time in each case and frequent control. I have also not yet found an oculist who is a good fitter of glasses. I therefore advise that the oculist insist on the patients going to the one optician whom he knows to be an adept in the fitting of glasses, and I am sure that he will greatly improve the result of his work.

Finally, they may be due to the patient himself. Often the patient will object to the wearing of glasses, though I think that with a little tact and persuasion this objection can usually be easily overcome, especially in women, when you tell them, truthfully at that, that the wearing of glasses will postpone or even cure wrinkles on the forehead. Or the patient will not believe his physician, sometimes because he has already consulted some eminent oculist who does not believe in eyestrain and who has told him either that his refractive error is so small that it does not need correction with glasses, or that his eyes are all right and that the trouble is somewhere else, autointoxication, for instance, which diagnosis I have frequently met with covering poor refraction work.

The patient also many times dreads the expense of going to the oculist, and I must confess that sometimes the charges of the oculist do seem rather high in proportion to the patient's income, especially so when the oculist sees fit to have the patient come to him several times weekly for so-called treatments, about the nature of which I have so far not been able to obtain much light, nor have I been able to convince myself that they might be of any use in refractive errors. The consequence of this is that many patients will go to the optician, who claims to be able to examine the eyes thoroughly, and to do so free, charging for the glasses only. In this connection I would like to mention two facts which I have always failed to understand: First, how some physicians, graduates of reputable schools, men who have taken the oath of Hippocrates on the day of their graduation, can sell themselves out to the optician for weekly wages to do his refracting, and profane their profession by unethical, unscientific and incompetent work. Second, that many practitioners of medicine, who should remember from their own student days the difficulties of the physiology and pathology of the apparatus of vision, can still persist in sending patients to the refracting optician, a mere mechanic. Why do they not also send their pathological specimens for diagnosis to the maker of microscopes?

The consequence of these failures to get the right refraction for those of our patients who suffer from some functional disorder caused by eyestrain and easily cured, or at least, if of long standing, improved by the only effective remedy—correct lenses—is to drive them from one physician to the other, to have them subjected to all kinds of unnecessary cures and sometimes even operations, until the patient despairs and either settles down to a life of invalidism with or without the addiction to drugs, or joins the large ranks of the dupes of all kinds of quacks.

Quite frequently also some disorder which was functional only in the beginning will leave its imprint on the organ of predilection and will no doubt lead to anatomic-pathological conditions. In closing let me ask only this one question: Why should we not make refraction as much of a routine examination of our cases of functional disorders as the ex-

amination of the urine and stomach contents, when we are forced to acknowledge that eyestrain is an important factor in the causation of many of these disorders?

QUININE FEVER.*

By A. L. GOODMAN, M.D.,

NEW YORK.

THE perverse action of drugs offers a great field for research work, and has attracted the attention of physiologists and laboratory workers for many years. But long before the present improved methods were known, it remained the province of the general medical man to observe this peculiar effect of drugs, and that he did so is attested by the literature of the past, rich in records of observations along these lines. A pioneer in this particular branch of pharmacology in recent times is Professor L. Lewin, whose book devoted exclusively to the contrary effect of drugs is a work which every medical man should own.

For some months past I have devoted myself to a rather exhaustive search of the literature of quinine fever, and, finding so few cases reported, I believe this condition rare enough and of sufficient interest to give you a short résumé of my case and of those cited by others.

Mrs. H., fifty-five years of age, mother of six healthy children; menopause some four years ago. Heart, lungs, liver, and kidneys negative. Always in good health until two years ago, when she is said to have contracted malaria. She said she had a few attacks afterwards and took quinine each time she thought an attack was coming on. The blood was examined at that time and the malarial organism is said to have been found.

A few years after these attacks I was called to see this patient, who complained of a feeling of malaise, headache, and a pain over her spleen, which on examination I found to be enlarged and somewhat painful. From the previous history I concluded that she might be developing one of her old attacks, and ordered six decigrams of quinine sulphate to be taken once daily. I took along a specimen of her blood and her urine, both of which gave negative results on examination. Her temperature at the time of my visit (8 A. M.) was 99°F. About one o'clock that afternoon I was called to see her again, although I had not expected to visit her until the next day. She looked miserable. Her temperature was 103.2°F. Her spleen was still sensitive and enlarged; she had a very intense headache, and complained of nausea. I concluded that she was in the midst of a paroxysm and that the quinine had not been given early enough to prevent it. That evening she had a member of the family call me up on the telephone to notify me that she felt very much better. The next day she took her quinine at 7 A. M. She was feeling well, but, as she explained, "weak from yesterday's attack." At 12 o'clock she began to feel sick again. At three o'clock I called and found her temperature 102° F. All the symptoms of the day before were repeated. The spleen was still enlarged. The examination of the urine was negative. That evening she felt well and her temperature was 100° F. All these temperatures were taken in the rectum. The next morning she took her quinine at 5 o'clock. At seven o'clock her temperature was 99.7° F. At 11 A. M. she felt very miserable and her temperature was 103.2° F. The blood examination was negative. In the evening her temperature was 99° F. I could not explain the repeated rise in temperature and asked Dr. A. Jacobi to see the case with me. It is to him that I owe my knowledge of this condition. As soon as the patient was put on a mixture of ergotin and piper nigrum, her fever failed to appear, and she made an uninterrupted recovery. Why the quinine should have acted differently at this time than it did some years before, I shall endeavor to explain later on.

The first one to report this untoward effect of quinine was Samuel Hahnemann in his translation of Wm. Cullen's Materia Medica in 1790. In an annotation on page 109, he says: "For experiment's sake, I took 60 grains of cinchona bark twice daily for a few consecutive days; my feet and hands became cold, followed by a feeling of malaise, palpitation of the heart, pulse hard and rapid, a feeling of apprehension, then a beating headache, flushing of the cheeks, thirst, and all the usual symptoms of intermittent fever. These symptoms lasted two to three hours each time, and returned after each dose. I stopped the bark and I was healthy."

It is said by Wernich in Eulenburg's Real-Encyclopädie that this effect which quinine had on him was a prominent factor in the birth of his homeopathy theory, which embraced the well known "similia similibus curantur" formulated by Hippocrates and revived with great success by Paracelsus. Bretonneau, in 1833, reports a great number of cases which he himself saw. He writes that "the prodromal symptoms were ringing in the ears, deafness, and malaise, followed by chills, headache, and gradual fall of the fever, accompanied with perspiration." He calls this susceptibility an individual idiosyncrasy, but gives no further explanation. Koehler in his text-book reviews Bretonneau's case and offers as an explanation that the quinine causes an intense gastric catarrh followed by a severe enteritis, and expresses his amazement that no one has thought of this simple solution. He also states that if quinine is given for any length of time it would be difficult to differentiate between the gastric disturbance and the malaria infection.

The first one to report these cases after painstaking repeated observation and carefully prepared clinical data was Professor Salvatore Tomasselli of Catania. His first publication appeared in 1874, with a notice of seven cases. Twelve additional cases were reported in 1877. His reports are given so accurately that I will repeat one here in detail: "The quinine, when given to cure a malaria fever or to prevent the return of a paroxysm, does not produce its well known effect, but causes instead a new febrile attack, differing from the malaria paroxysm in coming on at a different hour and in presenting different symptoms. The attack appears in from one to six hours after the ingestion of the quinine. While the patient is quiet and tranquil, and apyretic, he is seized with a convulsive tremor, more or less violent, with lowering of the surface temperature of the body; not rarely there is an aversion to the quinine. After one or two hours of this primary stage, the temperature rises rapidly, sometimes reaching 105° F. The duration of the fever is proportionate to its intensity, and usually terminates in twenty-four to forty-eight hours. If no fresh intoxication takes place, the patient regains his health; but if the toxic paroxysms be repeated at short intervals by a persistence in the quinine, and if, further, the dose be increased, the patient passes rapidly into a state of collapse and death re-

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sults from cardiac paralysis. As soon as the quinine is stopped the paroxysms disappear, and are resumed when the remedy is given again." In some of the severer cases the urine contained blood and casts. In summing up his observations he states as follows: "The complex production of all these toxic phenomena is not an intimate property of the drug, but it is a special morbid fact or entity united to an occult susceptibility of some individuals, which arises from the malarial infection. Neither the abuse nor the excessive doses of quinine can be regarded as an efficient cause of the development of such an intoxication, since this may be produced by small doses. All preparations of quinine, without excluding decoctions of the bark and the dry extract, provoke the same phenomena, but not always with the same intensity in the paroxysm. A variable period of silence (from one to six hours) intervenes between the administration of the quinine and the appearance of the morbid symptoms, according to the solubility of the drug. This incompatibility (intolerance) is congenital, but kept latent by favorable organic conditions. According to Tomasselli, it is a special idiosyncrasy occasioned by the malarial infection. The rare appearance of this strange effect and its occurrence in several members of the same family confirm this idea."

Further on in his paper he says, "there are two doubts which may arise: (1) That malarial fever, independently of the action of quinine, may be transformed into a pernicious form of icterohematuric fever. (2) That the quinine, stimulating the contractibility of the spleen, may give rise to an abundant outpouring of the malaria poison into the circulation, thus causing a fever of greater intensity with the pernicious icterohematuric form."

Professor Cantani was the first to demonstrate that the spleen did not contract under the influence of quinine. These experiments were afterward confirmed by Rochefontaine.

In 1879 Professor Karamitsas of Athens published five cases, and sustained the opinions of Tomasselli against those of Leroy, De Méricourt, and Béranger. In the same year Professor Ughetti published another case. Other cases were reported by Vincenzo, Restuccia, and Galvagno.

In 1885 Herrlich, in an excellent article, gave a detailed account of a case which came under his charge at the Charité in Berlin. To any one interested in this subject, I would advise the reading of this brilliant report. Unfortunately my case occurred in private practice, thus precluding any attempt at experimentation. The advantages of observing these cases in hospital practice can readily be seen.

Herrlich explains the rise of fever in his case as due to the contracting influence of the quinine on the tissues of the spleen, and says that after the third paroxysm the spleen was half the size that it was at first. In all the cases reported, malaria existed at the time of the administration, or had existed at some previous time. In my case there was an enlarged spleen, but even to-day the same hyperplasia exists. That the contracting influence of the quinine on the spleen does not play such an important rôle in the production of the fever following its administration can, I believe, be logically explained by the fact that if the quinine were given often enough one ought to reach a point where the contraction of the spleen reaches a maximum. In a number of cases the quinine was given time and time again, and each dose always produced a new paroxysm.

When we come to study the physiology of fever, we find its phenomena divided into the thermogenic, thermotaxic, and thermolytic. The thermotaxic apparatus, located by Ott and Collmar, has its cerebral origin in the corpus striatum, Schiff's crying center, and the anterior end of the thalamus. Its fibers probably decussate about the nib of the calamus, and then run down the lateral columns. The existence of the center about the corpus striatum has been confirmed by Sachs and Arohnson, Girard, and Baginsky. The thermogenic apparatus is situated in the spinal cord. The thermolytic apparatus, or heat dissipating center, consists of the vasomotor system, sweat glands, the lungs, and the reflex action of the surface nerves on the thermotaxic or inhibitory apparatus, allowing increased or diminished heat production, according to the surrounding temperature.

The relation of the nervous system to the temperature of the body has been the subject of experimentation for many years past. The experiments of Hitzig, Leyden, Fraenkel, Colasanti, Sanderson, Pflueger, Tscheschichin, Ott, and many others have, I believe, established the fact that fever is, broadly viewed, a neurosis—mainly a disease of the nervous system.

Professors Senator, Leyden, and Wood have studied the matter by means of the calorimeter. Senator found in fever an increased heat production, which has been confirmed by Professor Wood's numerous experiments. All the proofs go to show that the phenomena of heat are dominated by the nervous system.

It seems to me, therefore, that if we are to look for an explanation for this untoward effect of quinine, it would be the most plausible thing to expect the solution of the phenomena to be due to some chemical changes in the blood acting on the heat dissipating apparatus in persons who have, or who have had, malaria. All the cases reported were patients in whom the diagnosis of malaria had been made at one time or another. Lastly, to strengthen this logical deduction, we have to think of the various exanthemata caused by the administration of the quinine preparations.

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A CASE OF PERFORATION OF THE SOFT PALATE, DUE TO TERTIARY SYPHILIS; STAPHYLORRHAPHY.*

By H. FRED LANGE ZIEGEL, M.D.,

NEW YORK.

The condition to be briefly described occurred in a male, twenty-four years old, a cook by occupation, who six years previously had had a genital chancre followed in seven weeks by rather severe manifestations of secondary syphilis. These symptoms disappeared soon after antisyphilitic treatment was instituted, but unfortunately this was carried out only for three months. For the next five years the patient was in excellent health till about one month before he came under observation in May, 1905. During that month there had been sore throat, hoarseness, and difficulty in deglutition and respiration. These symptoms had gradually increased in severity until four days before the patient was first seen, when there had occurred discharge of pus through the mouth followed by some relief from the difficulty in swallowing and breathing. In spite of the increasing severity of the symptoms the patient had not sought medical aid, he being one of those robust, phlegmatic individuals who hardly know when they are sick. A careful physical examination gave no evidence of pathological changes elsewhere than in the nose and throat. Yet the patient was in a sorry plight; he could talk hardly above a whisper, respiration was impaired, and swallowing was difficult and painful. Pus issued from the left nostril and from an opening in the soft palate. This perforation was about the size of a five-cent piece, situated to the left of the median line; its edges were irregular and necrotic, and the surrounding soft tissues were red and edematous. The ulcerated areas had an indolent appearance and were not specially sensitive. Irrigation through the left nostril by means of a small catheter resulted in the evacuation through the mouth of about an ounce of thin, odorless, mucopurulent fluid containing small particles of necrotic tissue. Posterior rhinoscopy showed the superior surface of the soft palate bulging into the postnasal cavity; otherwise this method of examination, as well as anterior rhinoscopy, laryngoscopy, and digital exploration of the pharynx, gave no additional information.

There could be little doubt as to the diagnosis, which was gumma of the soft palate with subsequent degeneration, abscess formation, and rupture into the mouth.

The therapeutic plan followed was: vigorous antisyphilitic treatment constitutionally and locally, an attempt to check the spread of ulceration and to prevent the formation of cicatricial adhesions, and frequent observation of the defect in the palate with a view to its correction subsequently. As is usual in these cases, the treatment resulted in rapid improvement; breathing became free, discharge through the nose diminished, enunciation improved, the opening in the palate contracted, and the inflammatory reaction in the nasopharynx subsided. But the patient still complained of regurgitation of fluids through the nose and of mingling of the nasal and buccal contents.

After two months of the treatment outlined before, the parts appeared sufficiently healthy for attention to the permanent correction of the palatal defect. The small size of the opening—at this time probably not of greater diameter than that of a ten-cent piece—and consideration of the annoyance and discomfort that might attend the use of an obturator, seemed to indicate closure by suture. Accordingly, under cocaine anesthesia, the edges of the cleft were freshened and five sutures were passed so as to approximate the edges. No lateral incisions were made. Most of the sutures had to be repassed more deeply because of the friable condition of the tissues; and inspection in a few days showed that the two central sutures had torn through. Subsequently, however, after stimulation with silver nitrate, the opening closed completely and the patient was without symptoms.

Three months ago there appeared a pea-like prominence on the right eyeball which was diagnosed by Dr. Martin Cohen as gumma of the sclera. This has disappeared since then; and when the patient was last seen there remained no evidence of the conditions described except a linear scar at the bottom of a depression in the soft palate.

201 West One Hundred and Twentieth Street.

*Presented before the Harlem Medical Association, November 7, 1906.

The Modern Theory of Immunity and Endovenous Injections of Sublimate.—F. Mariani calls our attention to the possibility of vaccination with chemical substances as well as with organic substances. The author has studied the use of corrosive sublimate injected endovenously to produce an immunity both preventive and curative. After a long series of experiments he has arrived at some definite conclusions. By vaccination with small doses of sublimate introduced into the veins of man and animals we may obtain a serum that is antitoxic, bacteriolytic, and agglutinating, and there is at the same time an increase of the mononuclear leucocytes in the blood. These properties are not limited to a single germ, but act on germs of various sorts, diplococci, bacillus of Ebert, streptococcus, and bacillus of Koch: thus we have a polyvalent antitoxic serum, and animals may be vaccinated against several sorts of germs. The beneficial effects are not due to the salt of mercury, but to the complex of biological factors that constitute immunity. By this method the principles of defense that constitute immunity are brought into action against the infection. Large doses cause an intoxication of the organisms which diminishes the resistance of the body. The proper doses for man are one to five milligrams of sublimate per day. The syringe should not be completely filled with fluid when the injections are made, and a few drops of blood should be aspirated into the syringe before injecting, so as to become mixed with the solution used, which is then injected.—*Il Policlinico*.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ABDOMINAL FAT NECROSIS.

THE etiology of abdominal fat necrosis has been shrouded in uncertainty for many years, and even at the present time, despite many painstaking efforts at solving the problem, there are numerous features still to be explained. The results of the many researches seem to show that there is an intimate connection between this condition and some lesion of the pancreas—that is to say, changes in the latter may be accompanied by necrosis of the adipose tissues of the abdominal cavity. Two principal theories have been brought forward to account for this phenomenon, one of which ascribes the necrosis to a fat-splitting ferment present in the pancreatic secretion, the other to the effects of bacterial action. The latter has been quite generally abandoned, but the ferment theory has been proven by numerous investigations to have a basis in fact, and it is claimed that the necrotic process is due to the direct contact of the pancreatic secretion with the fatty tissue in the free abdominal cavity. Although this is probably true in many instances, there are others in which the peculiar localization of the necrotic area seems to point to some other etiological factor. Thus the phenomenon has been observed in the subpleural and subpericardial regions, in the subcutaneous tissues, in the spinal column, and in a number of other places.

One of the most recent investigations on this subject has been conducted by Payr and Martina (*Zeitschrift für Chirurgie*, Vol. 83, No. 1) who were tempted to seek an entirely different explanation for the necrotic process by the results obtained in their experiments with liver sutures. In attempting the latter with the aid of magnesium plates they found as one of the consequences that peculiar changes took place in the lungs, and these, on closer examination, were found to be caused by small emboli of liver cells which were due evidently to operative injuries. They were thus led to make similar experiments with the pancreas and found that crushing injuries of even a very slight degree were followed by extensive fat necroses. This pointed to embolism, and, although a condition of the kind had already been suspected by others, Payr and Martina succeeded in proving by histological methods that this actually occurred.

These embolic necroses, if they may be thus designated, are distinguished from those due to direct contact with the pancreatic secretion in a number of ways. Necrosis due to the latter appears early—within two hours—whereas the other forms require several days for their development. The localization of embolic foci of necrosis is in the neighborhood of the veins where collections of pancreatic cells may be demonstrated in microscopic section. The conditions of these animal experiments are readily enough reproduced in the human subject, in whom trauma, hemorrhage, and inflammation of the pancreas are not uncommon. It seems, therefore, that we now have another satisfactory explanation of this phenomenon, which is, moreover, of considerable practical importance, for, with a knowledge of the dangers which undue manipulation of the gland entails, greater care must be exercised in handling the organ during operations in this portion of the abdominal cavity.

RECENT ADVANCES IN THE PATHOLOGY OF CIRRHOSIS OF THE LIVER.

THE statement of Weigert that the primary lesion underlying all intestinal new growth is cell death, has been quite generally accepted, and, as applied to the liver, it is no new idea that the cirrhotic changes of the atrophic liver are purely the result of a reparative process. It is only within recent years, however, that we have learned to what a great extent and how often the parenchyma cells of the liver are capable of regenerating themselves before the interstitial new growth is permitted to become a permanent and disabling element. Kretz was the first to call attention to this remarkable regenerating power of the liver cell, and it was his opinion that only repeated and long-continued injury, as in chronic intoxication or in metabolic overwork, was able finally to produce the condition seen as cirrhosis. He based his opinion upon hyperplastic growths of liver parenchyma which he observed in early cases of cirrhosis of the liver, and his views were strengthened by many other investigations, notably those of MacCallum, Marchand, Stroebe, and Ponfick. Ponfick reported a case in which almost complete regeneration of normal tissue had taken place after the removal of a large echinoccoccus cyst of the liver, and the same author, in collaboration with v. Meister, observed true hyperplastic regeneration after the removal of from one-fourth to three-fourths of the entire liver in rabbits.

The actual process, however, in conditions analogous to those taking place in human cirrhosis have been but recently studied by Pearce. This investigator, by the injection of hemagglutinative sera into dogs, produced focal necroses in the liver, the changes in which he was enabled to study at varying intervals after injection of the serum. He found that wherever very small lesions had been produced direct repair took place without the intervention of connective tissue. Wherever, on the other hand, larger necroses had taken place, the area was first filled up by granulation tissue and then gradually replaced by young connective tissue. Along the framework of this liver cells gradually grew, until the entire area was finally again taken up by true liver parenchyma, only the denser bands of connective tissue remaining. In very large areas the process of repair was often aided by the transformation of fragments of bile ducts directly into true hepatic cells.

To the clinician a thorough understanding of Pearce's work cannot fail to be of great importance, especially in showing the great hopefulness of the prognosis, even in advanced cases, provided the cause can be removed.

SODIUM SULPHATE AS AN INTESTINAL ANTISEPTIC.

Some suggestive remarks are made by J. Maberly in the *Lancet* of November 10 regarding the true antiseptic action of sodium sulphate in intestinal toxemia. Happening to employ the remedy in cases of dysentery, with a view to free but gentle purgation, he noticed that in the dosage ordinarily used for such purgation the latter was not necessarily produced. In fact, in the most successful cases the evacuations became less frequent and assumed their normal color and consistency. These results led him to believe that the action of the remedy under the conditions named was referable to qualities other than purgative. He, therefore, began to use the drug in cases of infantile diarrhea, and found that if the dose was reduced below the aperient effect the evacuations became less frequent and often assumed a normal character without other medication. Also it was observed that vomiting quickly ceased. Milk diet was, of course, avoided as much as possible. Since obtaining such results he has relied more and more on sodium sulphate in treating all septic bowel conditions, and has become convinced that if the remedy is given in proper doses it is a true intestinal antiseptic, but to obtain this effect we must avoid doses having an aperient action. He also noted similarly good effects in typhoid fever. The effect on the bowel was as in the other conditions, and as a secondary effect the temperature curve was lowered, and the whole disease assumed a more benign aspect.

In some cases these good results did not follow, and the author suggests that perhaps in these cases there may have been some obscure alteration in the mucosa interfering with the normal splitting up of the salt. Maberly is of the opinion that the antiseptic action is due to the setting free of oxygen during the process of chemical decomposition of the drug in the bowel. Experiments by Hay have already shown that sodium sulphate produces copious intestinal secretion according to the amount of the dose and the strength of the solution. He showed further that the sulphate was split up in the intestines; the acid, being more easily absorbed than the base, disappeared partially from the small intestines to return shortly afterwards. In the meantime the base was gradually undergoing absorption and excretion by the kidneys and never pursued the same peculiar course of absorption and reexcretion as the acid. That portion of the salt which remained within the bowel unchanged caused the secretion of intestinal mucous fluid and consequent purgation, and not the portion absorbed into the blood.

NEW ASPECTS OF THE TUBERCULOSIS QUESTION.

The question of the relationship between the bacilli found in human tuberculosis and those giving rise to the disease in cattle is still under discussion by bacteriologists, and while some authorities consider the differences between the two organisms as being fundamental in nature, others are of the opinion that these characteristics are not sufficiently fixed to be regarded as infallible criterions of origin. It is especially the matter of the modifications that can be effected in virulence and cultural properties that has been a stumbling block in the way of a clear understanding of the status of the different tubercle bacilli, and even now the problem seems to be still far from solution.

Rabinowitsch and Max Koch two years ago expressed the opinion that the bacilli of avian tuberculosis were to be regarded only as varieties of the mammalian organisms, and in a recent publication (*Deutsche medizinische Wochenschrift*, November 8, 1906) the former author goes a step further, and affirms that bacilli of one form in the course of a protracted sojourn in the body of a heterogeneous animal may, through a process of gradual adaptation, approximate or acquire the characteristics of the type which is specific for that particular species of animal. This conclusion is reached as the result of the examination of many specimens of milk from tuberculous cattle, some of which were found to contain bacilli that could not be distinguished from the organisms of human tuberculosis, and of large numbers of autopsies on birds and mammals dying in the Berlin Zoological Garden. In thirty-three cases of spontaneous tuberculosis among monkeys, in most cases human bacilli were found, but there were also discovered bovine bacilli, transitional forms, and even avian bacilli. A lion and two eagles died of infection with human bacilli, and although the infections in parrots kept as pets usually is with human bacilli, Rabinowitsch found that in the Zoological Garden tuberculous parrots had only avian bacilli.

These considerations lead in the first place to the important conclusion that the external evidence is in favor of the view that the tuberculous infections of man and cattle are mutually transferable, and secondly that individual species of animals do not possess a particular susceptibility for one or the other form of tubercle bacilli, but that the determining factor lies in the particular opportunities for infection that happen to exist in each individual case.

A MITIGATION OF THE WHISTLE NUISANCE.

The Bureau of Steamboat Inspection has issued an order forbidding the use of siren whistles by any harbor steamers with the exception of government vessels and fireboats; even the latter may use their sirens only as fire alarms, and for the purpose of notifying other vessels to clear the way when they are going to fires. They must not use them on returning to their docks. Tugs and other vessels are also restricted in their use of the private signals, which have constituted the greatest nuisance on the river fronts of this city—even greater than the siren shrieks. The Supervising Inspector has ordered that, except in an emergency such as fire, private whistles to attract the attention of persons on shore or on other vessels shall not be blown. Even if compliance with this order makes it necessary to employ watchmen to call the men on the docks to

make fast lines or get ready to receive freight or passengers, still this order must be obeyed.

For the accomplishment of this reform the residents of New York, and of Philadelphia and Boston as well, to which cities the order also applies, are indebted to the indomitable persistence of Mrs. Isaac L. Rice of this town. For a year this energetic lady has carried on, almost unaided, a fight against the unnecessary noises made by the captains of tugboats and other river craft at night. Apparently worsted time and again, she persevered in the fight against almost overwhelming odds, and has finally triumphed. Mrs. Rice will have the thanks, not only of those who live near the river, but especially of the patients in the hospitals on the islands and along the water fronts who have been so cruelly tormented by these senseless noises.

CIVILIZATION AND INSANITY.

It would be but a trite statement to make that insanity has increased *pari passu* with the advance of civilization. The statement is too obvious to deny or even seriously to dispute. Opinions may differ as to the extent of the increase of insanity in civilized countries, and it may be true that exaggerated assertions in regard to the spread of lunacy are far from uncommon, but the fact undoubtedly remains that within the past fifty years insanity has increased progressively and relatively. The period mentioned has been the time when modern inventions of all descriptions have revolutionized methods of living, and, in place of a comparatively quiet and easy-going existence, life has developed into a strenuous, uneasy, nerve-racking struggle. Even the amusements of the present day present, as a rule, the same characteristics, and life in large cities has become more or less of a hurly-burly. All the conditions of our life are artificial, and this has affected the race from a physical standpoint injuriously.

The city dweller has advanced intellectually, but this advance has been at the expense of his physical state, that is to say, he has physically deteriorated, which, in turn, has affected his mental stamina, rendering him extremely prone to an upset of the mental balance. Preventive medicine, too, has undoubtedly been a factor in the increase of insanity, in that by the means now employed individuals are kept alive and breed children, who in former times would have died and not perpetuated an unhealthy stock. Thus, in a manner of speaking, we have been searching for a condition of mental instability. At one time human life was counted as naught, but with the advance of civilization life has been most carefully preserved, and consequently we have among us degenerates of all kinds, and insanity is rampant.

Some statistics regarding insanity have been issued recently in England, and these provide melancholy reading. Pauper lunatics in London alone, for whom asylums have to be provided, number now more than twenty-five thousand, while in Great Britain as a whole insanity steadily increases. In America much the same story has to be told; indeed, such is the case in all civilized countries. Things will in the course of time right themselves, but in the meantime conditions of modern life give ample room for thought, and at times one cannot avoid asking whether the luxuries and conveniences of present-day living have not been bought too dearly.

The Nature of Cancer and of Cancerous Cachexia.

As in the case of rheumatism, the true nature of cancer is still so uncertain that it offers wide opportunities to investigators for original research. The number of theories will continue to be legion until a clearer knowledge of the subject is gained. In *La Presse Médicale,* November 3, 1906, Debove reviews several of these theories which are now in vogue. He first presents certain facts: cancer consists of the development of a tumor which has a tendency, so to speak, to increase indefinitely, to recur after removal, and to form metastases; that is to say, tumors called secondary occur in the various organs. The structure of these tumors resembles that of the primary tumor. This propagation takes place by the route of lymphatics or of the blood-vessels. The theory first discussed by the writer is that of diathesis. By this is meant a congenital or acquired predisposition by which, under the influence of diverse causes, an individual may show identical reactions. As an example of this theory the following illustration is offered: After a bronchitis an individual with a tuberculous diathesis develops pulmonary phthisis, whereas an individual with the same diathesis after a contusion of the hip develops a coxalgia, and still another after gonorrhea develops a tuberculous orchitis. Although to-day the influence of the soil is admitted, another factor is necessary for the development of the disease, namely, the introduction of the specific microbe of the malady. This theory leaves us with an unsolved problem—in what does a diathesis consist? Another theory discussed is the one which looks to some parasite as the cause of the disease. Although a specific parasite has not yet been demonstrated, Debove declares that so far as he is concerned this fact is not the greatest objection to the parasitic theory, for there are a number of affections which are without doubt of parasitic origin, although the parasites have not yet been demonstrated. The greatest objection, he thinks, to this theory is the resemblance of the secondary growths to the primary focus. As a striking example, he mentions metastases in the case of melanotic carcinoma. These metastases show elements analogous to those of the tissues in which the primary tumor develops. Another theory is that of cellular anarchy. The advocates of this theory believe in the atypical growth of cells. Debove suggests that carcinoma may be considered as a sort of parasitic affection, in which the parasites are cells derived from normal cells. The general condition called cancerous cachexia is due to the difficulty experienced by certain affected organs in performing their functions.

The Use of Raw Cow's Milk for Nurslings.

In no instance is the importance of individual idiosyncrasy more marked than in the feeding of infants. Méry and Guillemot, writing in *La Tribune Médicale,* of November 3, 1906, do not pretend to be autocratic in their advocacy of raw cow's milk in the feeding of infants. They refer to a series of observations which they have made, which prove the utility of raw cow's milk as an ideal nourishment for certain nurslings. This milk has the advantages of being a living milk, containing soluble ferments

which facilitate digestion, and phosphorus in organic combination, which is destroyed by sterilization. One patient referred to was a child weighing 3,335 grams at birth. It was nursed at the breast for two months. After the cessation of secretion of mother's milk, sterilized milk was methodically given, and the infant ceased to gain in weight. It was put on raw cow's milk, and gained 530 grams in nine days. Children brought up on sterilized milk are pale and anemic; children brought up on raw cow's milk resemble those that are breast fed. The difficulty in the use of this milk is that of obtaining it in an aseptic condition. These investigators believe that in certain cases this milk offers great advantages.

Occult Gastrointestinal Hemorrhages.

As a general rule bleeding from the alimentary tract is not detected until the gastric contents or feces are sufficiently mixed with blood to give them a dark red or black color. Blood may, however, be present in microscopic amounts, when the designation of occult hemorrhage is appropriate, and it is here that an urgent necessity exists for detecting its presence as an indication of pathological processes along some portion of the canal. A number of excellent tests have been devised for demonstrating blood in such minute quantities in the stomach contents or the feces; and in all cases of suspected gastric carcinoma, for example, such an examination should be made early, even before other diagnostic aids are resorted to. Jaworski and Korolewicz (*Wiener klinische Wochenschrift*, 1906, No. 38) have made an extensive series of observations which demonstrate quite conclusively the value of such procedures. Among other things, it was also found that the hemorrhages continued in the presence of a gastric carcinoma, despite the various therapeutic measures and diet, whereas in the case of a simple round ulcer they disappeared. Although this finding does not afford any definite knowledge of the exact site of the lesion, it does furnish, in connection with other clinical symptoms, important data for diagnosis and prognosis. Boas found in cases of gastric ulcer that complete rest in bed and a milk diet were followed by a cessation of the occult hemorrhages within a period of from three to five days.

News of the Week.

Tablet in Honor of Dr. Reed.—A bronze tablet measuring three by four feet has been placed in position in the Kings County Hospital in Flatbush, in memory of the late Dr. Walter Reed, who was a former interne of the hospital. The tablet, which is the gift of the Alumni Association of the hospital, bears the following inscription: Erected by the Association of Ex-Internes of the Kings County Hospital to the memory of Walter Reed, M.D., interne in this hospital, 1871; Major and surgeon U. S. A.; chairman United States Yellow Fever Commission, 1900-1901. He robbed the pestilence of its terrors and caused the cities of the Southland to sit in peace within their gates.

Yellow Fever in Cuba.—Recent dispatches from Havana state that there are ten cases of yellow fever in the island, of which seven are in Havana, two in Cruces, and one in Guanabacoa.

Monkeys Inoculated with Yellow Fever.—In a telegraphic report from the expedition sent to Brazil by the Liverpool School of Tropical Medicine, for the purpose of investigating the yellow fever question, it is announced that the workers of the commission have been successful in proving that chimpanzees can be infected with yellow fever through the intervention of the stegomyia mosquito.

Mosquitos and Leprosy.—During the recent Congress on leprosy held at Buenos Ayres it was stated that in the province of Cordoba alone there were sixty cases of leprosy, forty-two of which were in the town of Cordoba itself. The theory that the mosquito is a transmitting agent of the disease was also promulgated.

Fire in a Bacteriological Laboratory.—At a fire of moderate extent occurring last week in the Mercy Hospital at Pittsburg, the bacteriological laboratory was in the danger zone, and, owing to the explosion of some chemicals, test tubes containing growing cultures of bacteria were broken and their contents scattered about the walls and floor. The resident physicians sprinkled disinfecting solutions about the room before allowing the firemen to enter, and the clothes of the latter were subsequently disinfected. The names and addresses of those exposed were noted, and the men are being watched for the possible development of disease.

Deaths Due to Automobiles.—The Health Department records for the second quarter of the year show that of 965 deaths occurring during April, May, and June, only eleven were caused by automobile accidents, while sixty-eight persons were killed as the result of being run over by, or thrown from, horse-drawn vehicles.

Prize Essay on Epilepsy.—A prize of $500 is offered by the Association for the Study of Epilepsy for the best essay on the etiology of epilepsy; the conditions of award are as follows: All essays submitted must be in English, and must not contain more than 15,000 words. Essays must be in the possession of Dr. W. P. Spratling, at Sonyea, N. Y., not later than September 1, 1907. The name of the person submitting the essay must not appear on the same, but be put in a sealed envelope on which is written a motto, which motto should also appear at the top of the first page of the essay. The essays will be judged by a committee of three, and announcement of the award will be made at the November, 1907, meeting of the Association. The Association will not feel bound to award the prize should no essay submitted be deemed of sufficient value to merit it.

Laryngologists Wanted.—The Board of Health announces that there are a number of vacancies in the staff of attending physicians and laryngologists of the Manhattan Tuberculosis Clinic, conducted by the Department. Classes are held three times a week—in the morning, afternoon, and evening. The Department of Health states that it hopes in the near future to remunerate the clinic physicians for their services. Those desiring to apply for the above mentioned positions should call at the office of the Division of Communicable Diseases, Department of Health, Fifty-fifth street and Sixth avenue, New York, N. Y.

Report of the Cook County Coroner.—In his November report, the Coroner of Cook County, Ill., points out an increase in the number of deaths for October over the preceding month, the respective numbers being 351 and 308. In October there were 46 suicides, as compared with 36 in September. Of this number, 18 died from gunshot wounds, 9 from poison, and 10 from asphyxiation.

The Philadelphia Clinic for Home Treatment

of Chest and Throat Diseases, 519 South Fifteenth street, Philadelphia, has recently opened evening clinics, in addition to the day clinics which have been running since last March, for free treatment to the consumptive poor. It is estimated that about one-third of the 9,000 consumptives living in Philadelphia annually earn over $1,000,000, but without medical care will in a few years become unfit to work, and in all probability many of them will have to be maintained in hospitals at an added expense of another $1,000,000, making a total loss in wages and in cost of maintenance of over $2,000,000 a year. The object is to lighten the struggle of these people during this trying period of their life, to help save their wages, and to forestall the danger of becoming public charges. Dr. Frank Read is President of the Board of Managers, and Dr. Thomas J. Mays is Medical Director of this institution.

Columbia University.— At a recent meeting of the Board of Trustees of Columbia University the degree of Doctor of Science was conferred on Sir William Henry Perkin, regarded as the founder of the modern coal tar chemistry. A gift was announced of $3,440 to provide additional clinical facilities for students of medicine, and one of $500 to purchase instruments for the Sloane Maternity Hospital.

Harvey Society Lecture.—The fourth lecture in the Harvey Society Course will be delivered by Prof. J. G. Adami of McGill University, Montreal, on December 1, at 8:30 P. M., at the New York Academy of Medicine. Subject: "The Myelins and Potential Fluid Crystals of the Body." All interested are cordially invited to attend.

Dr. H. S. Frenkel of Heiden, Switzerland, read a paper on the educational treatment of locomotor ataxia at the monthly meeting of the Medical Society of the County of New York on Monday evening of this week. During December he will give a course of lectures and clinical demonstrations at the New York Polyclinic in Dr. Pritchard's hours on Mondays and Fridays, from 1.30 to 2.30 P. M.

Dr. W. P. Spratling of Sonyea has been elected a member of the Executive Committee of the New York State Conference of Charities and Correction, and Chairman of the Committee on Medical Defectives of the same association.

Dr. L. W. Bremerman has been appointed Professor of Genitourinary Diseases in the New York School of Clinical Medicine, to fill the vacancy caused by the death of Professor William K. Otis, M.D.

Dr. Henry Sykes has been appointed Chief Resident Physician to the Philadelphia Hospital, having passed successfully a Civil Service examination.

Training School for Nurses in Paris.—As the result, it is stated, of the recent visits of French physicians to England, the Parisian authorities are to establish a training school for nurses founded on English models. The new building will be erected near the Salpetrière, and almost next door to this institution will be built the new hospital of La Pitié. The course is to last three years, of which the first two will be theoretical and the last practical.

Jewish Hospital of Brooklyn.—At a meeting of the Jewish Hospital Society of Brooklyn it was announced that the hospital building, at Classon and St. Mark's avenues, would be dedicated on December 9 and opened on the following day for the reception of patients. The land, building, and equipment represent an outlay of about $350,000. For the present the accommodations provided will be limited to seventy-five or one hundred patients. Dr. Jacob Fuchs will be the chief physician and Dr. H. Beeckman Delatour chief surgeon.

International Laryngo-Rhinological Congress.—This will be held in Vienna April 21 to 25, 1908, and is to be conducted as a memorial to Türck and Czermak, in order to commemorate the fiftieth anniversary of their labors in developing modern laryngology. Papers may be read in German, English, or French, and together with an abstract of their contents should be in the hands of the secretary not later than December 31, 1907. The president is Prof. O. Chiari of Vienna, the honorary president of the Congress will be Prof. W. Schrötter of Vienna, and the secretary is Prof. M. Grossmann, Vienna, IX., Garnisongasse 10.

Middle Tennessee Medical Association.—At the meeting held in Shelbyville officers for this society were elected as follows for the ensuing year: *President,* Dr. W. G. Friersen of Shelbyville; *Vice-President,* Dr. Douglas of Nashville; *Secretary,* Dr. Litterer of Nashville.

Fond du Lac County (Wis.) Medical Society.—At the annual meeting of this society, held in Fond du Lac, the following officers were elected: *President,* Dr. J. W. Burns, Oakfield; *Vice-President,* Dr. G. F. Scheib; *Secretary and Treasurer,* Dr. Flora A. Read.

Tri-State Medical Association of Louisiana, Texas, and Arkansas.—At the recent meeting of this organization held in Marshall, Texas, the following officers were elected: *President,* Dr. Holman Taylor of Marshall; *Vice-President* for Arkansas, Dr. A. U. Williams of Hot Springs; *Vice-President* for Louisiana, Dr. J. L. Wilson of Alexandria; *Vice-President* for Texas, Dr. Becton of Greenville; *Secretary,* Dr. R. H. T. Mann of Texarkana, Ark.; *Treasurer,* Dr. I. M. Calloway of Shreveport, La.

The Late Dr. William K. Otis.—At a meeting of the Medical Association of the Greater City of New York, held November 19, 1906, the following resolutions were presented and adopted:

Whereas, It has pleased Almighty God to remove from our midst our colleague, Dr. William K. Otis, therefore it is

Resolved, That we express our sincere sorrow at the loss we have sustained; that we are duly conscious of his high personal character and his genial and attractive personality, and that we are proud of his advanced position in medicine and of his well-earned fame as a specialist in genitourinary surgery.

Resolved, That we extend the heartfelt sympathy of the Society to the family of the deceased, and that these resolutions, expressive of grief and condolence, shall be transmitted to the local medical journals, to wit, the MEDICAL RECORD and the *New York Medical Journal,* with the request that they be published in their columns.

Resolved, That a copy of these resolutions be sent to the family of the deceased member.

(Signed) ROBERT W. TAYLOR, RAMON GUITERAS, ROBERT HOLMES GREENE, *Committee.*

At a united meeting of the Faculty of the New York School of Clinical Medicine and the Trustees of the West Side German Dispensary, held October 31, 1906, the following resolutions were adopted:

That, *Whereas,* on September 22, 1906, through the sudden and untimely decease of our beloved confrère, William K. Otis, M.D., professor of Gen-

itourinary surgery, we have sustained a grevious loss; and

Whereas, The Clinical School has lost its most trustworthy secretary and excellent teacher; the Dispensary a faithful adherent; the profession a scientific inventor; the public a skilful practitioner; his associates a most estimable colleague; and his intimates a loyal, open-hearted, self-forgetful friend; therefore, be it

Resolved, That we, deploring our loss, share with the bereaved family of William K. Otis their sorrow and grief, and hereby tender our heartfelt sympathy; and be it

Resolved, That copies of these resolutions be spread in full on the minutes, published in the medical journals, and a copy thereof sent to the afflicted family of the deceased.

(Signed) A. Ernest Gallant, M.D.; John L. Adams, M.D.; William Friedman, *Committee for the Faculty and Trustees.*

Obituary Notes.—Dr. John A. Laros died at Coopersburg, Pa., on November 15, at the age of sixty-eight years. He was graduated from the medical department of the University of Pennsylvania in the class of 1862.

Dr. Charles E. Wetton died at Camden, N. J., on November 18, at the age of thirty-two years. He was a graduate of Jefferson Medical College.

Dr. Wm. Muir Angney died at Philadelphia on November 19, as a result of carcinoma of the stomach, at the age of forty-six years. He was graduated from Jefferson Medical College in the class of 1882. He served as resident physician in the Philadelphia Hospital and subsequently became District Physician to the Board of Guardians of the Poor, later Vaccine Physician, and then Assistant Medical Inspector of the Bureau of Health. Since 1902 he has been Chief Surgeon to the Bureau of Police. He was physician to the Protestant Episcopal City Mission and Visiting Physician to the Hospital for Diseases of the Lungs at Chestnut Hill and the Hospital for Male Consumptives of the House of Mercy.

Dr. Leonard Francis Nicoll of this city died of typhoid fever on November 25, at the age of thirty-one years. He was graduated from Harvard University in 1899 and four years later received his medical degree from Columbia.

Dr. Isaac E. Atkinson of Baltimore died of pneumonia on November 24, at the age of sixty years. He had held many official professional positions.

Dr. Clark R. Wilcoxson of Ypsilanti, Mich., died on November 13, at the age of thirty-six years. He was graduated from the University of Michigan Medical School in 1894 and had practised in Ypsilanti ever since. For a number of years he was health officer of Ypsilanti.

Dr. Lorenzo M. Greene of Bethel, Vt., died on November 12, at the age of fifty-four years. He was born in Rochester and studied medicine at the Dartmouth Medical College and the University of Vermont. He had practised in Bethel since 1877.

Dr. James F. Winsell of Redding, Cal., died on November 10, at the age of eighty-one years. He was a native of Indiana, but went to California immediately upon being graduated from the Ohio Medical College of Cincinnati in 1849.

Dr. Ruth Marvin of Sioux City, Ia., died on November 11, at the age of thirty-seven years. She was the wife of Dr. H. M. Marvin and was graduated from Yankton College in 1880. She received her medical degree from the Hahnemann Medical College in Chicago twelve years later. Since 1896 she had practised in Sioux City.

Dr. William M. Barrett of Westboro, Mass., died on November 10, at the age of eighty-four years. He was a graduate of Bowdoin College and received his medical degree from the medical school of that institution in 1846. He served as assistant surgeon through the Civil War.

Dr. George B. Moore of St. Paul, Minn., died on November 14, of pneumonia, at the age of thirty-five years. He was graduated from the Medical School of the Minnesota State University and three years ago was made police surgeon of St. Paul.

Dr. John J. Hill of Atlanta, Ga., died on November 12, at the age of fifty-four years. He was graduated from the Bellevue Hospital Medical College about twenty years ago and had practised in Atlanta ever since.

Dr. Wm. M. Thompson of Opelousas, La., died on November 11, at the age of fifty-seven years. He was graduated from the medical department of Tulane University, New Orleans, in 1872, and immediately began practice in Opelousas.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

BIRTHDAY HONORS—THE LATE MR. GEORGE HERRING—UNIVERSITY COLLEGE NEWS—THE TREATMENT OF MENORRHAGIA—VIOLA ODORATA—FEEDING SCHOOL CHILDREN—AND SOCIALISM—LONDON MILK AND ITS SUPPLY.

London, November 9, 1906.

To-day being the King's birthday, the customary list of honors conferred on the occasion was issued last night. Most of the persons selected by the government for this Majesty's approval are political partisans, but half a dozen medical and scientific men are recognized by a knighthood—not a single baronetcy is conferred on such, though one would have thought the presidency of the Royal College of Surgeons might have been so distinguished. But Mr. Tweedy takes his place with the other knights, viz., Professor Byers of Belfast, Prof. Rubert W. Boyce of Liverpool University and the Tropical School, and Dr. Ch. F. Hutchinson, who was a member of the last parliament but lost his seat at the general election. The C. M. G. is given to Mr. S. W. Thompstone, F.R.C.S., Principal Medical Officer of Northern Nigeria, and to Mr. W. T. Grenfell, M.R.C.S., Medical Superintendent of the Royal National Mission, to Deep Sea Fishermen.

The death of Mr. George Herring, the munificent philanthropist to whom our hospitals are specially indebted, came as a shock to those interested in these charities. Ever since 1899 the Sunday fund has received an annual contribution from him of over £10,000, and his other gifts to such institutions and various charities were on a most generous scale. His body was cremated on Wednesday, in accordance with his will, the provisions of which were made public on Thursday. Apart from family and private legacies he leaves the North West London Hospital, of which he was treasurer, £5,000; Maidenhead Cottage Hospital, £500; the Charitable Relief Society, £1,000. His town residence and contents, subject to some personal souvenirs, are to be sold for the benefit of King Edward VII's hospital fund. The residue of his property, after numerous provisions of less public interest, goes to the Hospital Sunday Fund, and is expected to amount to half a million sterling. Provision is made to carry out his gift of £100,000 to the Salvation Army's social scheme.

On Tuesday the Duke of Connaught, accompanied by the duchess, went to the University College Hospital and declared the new building open. Their Royal Highnesses were received by the Duke of Bedford, president of the hospital, Lord Reay, president of the college, and a very distinguished company, including the staff of the hospital and professors of the college. You will remember that this hospital has been rebuilt at a cost of £200,000, provided by the late Sir J. Blundell Maple. The main building is cruciform in design, the material red brick with terra-cotta dressings. The wards to accommodate 300 patients are in the arms of the cross. The board room and operating theaters are in the central block. The out-patient department, baths, and rooms for Finsen light and Roentgen ray treatment are located in the basement. An address was

presented from the committee and staff in which regret was expressed that Sir J. B. Maple had not lived to see the completion of the building. The duke made an admirable reply, closing with an appeal to professors and collegiates who "follow men who have thrown a great luster on the medical profession, men who have been a blessing to the world," and adding, "I am certain that the rising members of the medical profession will ever do all they can to keep up the noble attributes of the English doctor."

Menorrhagia so severe as to endanger life and quite uncontrollable by ordinary methods has been met sometimes by hysterectomy. To many the remedy seems desperate, but if no special cause can be detected, no polyp, no fibroid, no cancer, and yet the life of the patient is threatened, the gynecologists are for the most part agreed that operation must be resorted to. The question was considered at the Gynecological Society, when the president, Mr. Bowerman Jessett, showed a specimen from a case which well illustrated the difficulties that may be encountered. The patient had been reduced to the state of a confirmed invalid. Digital examination was negative, even after dilating the canal under an anesthetic. Mr. Jessett thought there was probably a submucous fibroid of the fundus beyond reach, as the cavity was of great length. He removed the uterus and the patient did well. On cutting open the uterus a fibroid (shown) the size of a walnut was found at the fundus close under the membrane. The president compared the case with another which he had thought must be cancerous and had operated on with excellent result, and said he had seen many women who had suffered severely and been curetted several times without relief. If nothing can be discovered by explorations after dilatation, he thought it time to remove the uterus.

Dr. Howell Evans agreed with the president. The scientific treatment was to observe for a time under palliatives and note the anemia by blood counts between the periods. If that increased ground was being lost and it was proper to weigh whether the loss of an abnormally active organ by its removal would preserve the patient's life.

Professor Kinkhead thought that was going rather too far. He had had many cases with profound anemia, no cause being discoverable by any diagnostic proceeding, curetted, watched, and later showing a fibroid or polyp; also many cases in which this did not occur, but which depended on want of normal contractile power, curetting had been useless, but the steady use of phenol and iodine to the inside of the organ brought about recovery. In one case in which he had had to plug complete cure ensued after the application of iodized phenol to the uterine cavity twice a week for two months. His experience was opposed to hysterectomy for hemorrhage in any case.

Dr. C. H. Bennett had seen severe cases cured by gallic acid in 10 grain doses, and would not operate until after trying that treatment unless a fibroid or polyp could be detected.

Dr. Purcell said other means were, of course, usually tried before operation, as calcium sulphide, hydrastis, or any astringent.

Mr. Ryall said it was easy to be wise after the event, but, looking at the specimen, it seemed to be a matter for dilating the cervix rather than hysterectomy—it looked as if it could be enucleated. The first and most important treatment was rest in bed. All sorts of drugs might be given, but it was the rest that did the good. If no reasonable treatment availed and no tumor could be detected, the organ was useless and a source of danger, too.

The president said in reply, that the fibroid could not have been snared, as it was submucous and somewhat interstitial. The uterus was very large—3½ inches—and the top could not be reached. Hence it was not certain there was a fibroid. The finger could pass far enough to be pretty sure there was no polyp. Of course, had there been, it could have been removed and the uterus saved. He thought the result justified the operation. The patient was a widow with seven children dependent on her. He might have kept her in bed and given a pint or more of gallic acid mixture and so abated the hemorrhage, but all the gallic acid in the world would not have cured her while she had the fibroid. He agreed with Prof. Kinkhead as to iodized phenol, but nitric acid was still better. Of course, it was necessary to pack the vagina with sodium carbonate solution, to prevent burning. He held, however, that in such a case as he had brought before them, in which no cause could be detected, it was right to remove the uterus.

From time to time the newspapers repeat misleading statements about the cure of cancer and other diseases. These irresponsible editors do not seem to appreciate the cruelty of exciting false hopes in sufferers or the degradation of promoting quackery. They have again been circulating foolish stories about the value of violet leaves in cancer. Though the plant is admitted to have some influence on the animal functions, the assertions of such value have long been refuted.

In December, 1905, Mr. Whipple Gadd, F.C.S., communicated to the Therapeutic Society a searching research into the chemistry of the plant. I reported his results at the time as practically negative. On the 30th ult. he communicated further investigations with a similar result. He has searched in vain for an alkaloid or for a glucoside. He is unable, therefore, to confirm Mandelin's reported discovery of viola-guercitrin in the leaves. Attempts to isolate a ferment were equally unsuccessful. Varying amounts of glucose in different samples, gathered at different times of the year, were the chief result, and anything like an active principle remains unknown.

A paper on the therapeutics of viola odorata was read by Dr. W. A. Potts, who showed tracings of the pulse, blood pressure, and frog's heart. He found a definite although transient depressor effect on all parts of the circulation and suggested that it would be unwise to give the drug in cases of feeble heart action. He noticed after taking it that the urine resisted decomposition for several days, even in hot weather, which seemed to indicate an antiseptic action of some product in the secretion, and might account for decreased foulness of discharges which had been noticed during its use. He also found local applications relieved pain.

Dr. Parker Douglas agreed that preparations of the leaves mitigated pain and the foulness of discharges.

Sir L. Brunton confirmed these two points from his trials and mentioned the similar effects of saponins and hoped Mr. Gadd would search for saponins in the plant; these produce transient irritation of the skin, followed by an anesthetic effect.

On Wednesday Sir Wm. Chance, lecturing on socialism to a select audience, while admitting that State interference in social affairs might sometimes be temporarily beneficial, said it was harmful by weakening character, lessening parental responsibility, and inducing people to rely on the State instead of themselves. Free education was a doubtful measure and had led to a demand for feeding school children. Tampering with the poor law so common of late was clearly mischievous and tended to kill individual efforts to meet the evils of our civilization.

In connection with this it may be added that at a meeting held last week to promote some practical way of feeding school children an unexpected opposition to the proposal was expressed. The chairman, Mr. Bridgeman, M.P., said the children suffered more from neglect and dirt than underfeeding. Sir C. Elliott moved a resolution that it is contrary to the interests of the State to feed the school children or for the rates to be charged with the duties of parents. One speaker thought otherwise, and said charity would break down, but the meeting carried the resolution against him and another advocating medical supervision.

The report of a committee on milk supply appointed by the Royal Institute of Public Health has just appeared and emphasizes the necessity of further steps for the prevention of milk-borne diseases. The chief ones are stated to be typhoid and scarlet fevers, diphtheria, tuberculosis, and epidemic diarrhea. The supply of milk in London and large towns is said to be insufficient in quantity and sadly deficient in quality, enormous numbers of bacteria, pus cells, and other impurities being contained in a large proportion of samples. Early and rapid souring indicates uncleanness, to prevent which preservatives are commonly added by 50 per cent. of the dairymen. Legal control of the business is demanded. The powers possessed are not nearly so strict as in many colonies, and the committee mentions a number of reforms which could easily be introduced by modifications of the Milk Shops Order of 1855, which in rural parts has become a dead letter. The feeding of the cows, their veterinary inspection, and isolation when ill are considered, and these points followed by suggestions on the transit of milk.

OUR PARIS LETTER.

(From Our Special Correspondent.)

SYPHILIS IN THE VIRTUOUS—THE ETIOLOGY AND TREATMENT OF MALARIA—MILIARY FEVER—AUTOMOBILING AND HEALTH—RAW MILK IN INFANT FEEDING—GAS INJECTIONS IN PLEURISY.

PARIS, October 28, 1006.

ON October 2 the Académie de Médecine resumed its sessions. Professor Fournier presented a very interesting paper on syphilis in pure women. He said that, according to his own personal statistics, out of every one hundred syphilitic women twenty were married and virtuous. His

endeavor had been to determine under what conditions these women were infected, and he believed that the disease was transmitted in two ways, either the husband was syphilitic before marriage, or he became so afterward. The first state of affairs was much commoner than the second, since for 218 cases of conjugal syphilis due to premarital infection of the husband there were only 94 cases of the second type. Under what conditions do these husbands that were previously syphilitic communicate the disease to their wives? In this respect extreme variability is observed. Sometimes the infection takes place very promptly, on the 28th day in one case, and usually it occurs during the first month, or at least during the first year of married life. Out of 151 cases in 130 instances contagion took place during the first year, and 117 times during the first six months. The disease in these husbands is usually of recent date, being of less than three years duration in 98 cases. These examples show that many syphilitics marry too soon. To some degree the fault lies with the physician who still too often contents himself with a treatment of insufficient duration, but it is mainly the patient who is to blame for marrying, either through ignorance or through lack of consideration, knowing himself to be syphilitic. Fournier urged the necessity of greater efforts in prophylaxis founded on the dissemination of instruction relating to syphilis. Although syphilis in married women is often prompt to appear, sometimes it is very late in developing, as in some cases seen by the author in which the husband had had his chancre from seven to nine years previously. Usually the reason for the infection is to be sought in the presence in the husband of secondary lesions, oftentimes delayed, but which must not be regarded as harmless. The mucous patch especially loses none of its contagiousness simply because it is late in appearing. Numerous recorded observations bear witness to this fact, which should be impressed on both physicians and the general public, as it is too often believed that syphilis of long standing is devoid of danger. Fournier drew some practical deductions from his study. In the first place, he pointed out the necessity for a prolonged course of treatment for every syphilitic, especially if marriage was being considered. It was also necessary, he said, for every syphilitic about to marry to give up the use of tobacco, since its use was likely to evoke the development of secondary buccal lesions even much later than the secondary period. These desiderata were difficult to secure, however, and, on the other hand, it was well known that every woman infected by her husband was condemned, except in rare instances, to receive only insufficient treatment, and therefore to be exposed to all the dangers of the disease when imperfectly controlled.

The etiology and prophylaxis of malaria were discussed by M. Kelsch. He said that he regretted to see the modern nonobservance of those wise and certainly effective prophylactic measures made use of by our predecessors in combatting this disease, which they attributed to emanations from the soil. Nowadays these procedures have been abandoned in order to give undivided prominence to mechanical protection against the anopheles. The speaker asked himself the question whether malaria were transmitted only through mosquitos, and he cited instances of extremely severe epidemics which had claimed as their victims soldiers or colonists who came into close contact with the soil, and which spoke in favor of an injurious rôle played by the earth or dust. He further pointed out that the numerous patients coming from the colonies and distributed during their convalescence in the most widely separated regions of France never gave rise to epidemics in spite of the presence of many mosquitos in these places. Finally he referred to the variations in virulence shown by the disease in malarial countries, and said that he considered that many things suggested the existence of secondary causes in the development and spread of the disease. Although the combat against the mosquitos was perfectly justifiable, the old measures, particularly those relating to the soil, should not be neglected.

A report by M. Nicloux on the absorption of chloroform by the organs and tissues was read by M. Grehant. By means of a special method Nicloux was enabled to study the details of chloroform anesthesia. In the dog the anesthetic dose was in the neighborhood of 50 mg. for 150 c.c. of blood; the fatal dose in the neighborhood of 70 mg., showing that only a very slight margin of safety exists. Chloroform is quickly eliminated from the blood, but becomes fixed in the tissues, the brain and medulla especially absorbing large amounts. Finally, chloroform passes from the mother to the fetus and into the milk of nursing women.

Chantemesse, Marchoux, and Haury have presented the results of an interesting investigation on miliary fever and rats. They reported observations made in the course of an epidemic of this disease occurring last May and June in Charent and Deux-Sévres, which led them to suggest an etiological possibility in which the rat plays a part. This epidemic involved 6,000 persons, and in forty-five days it had covered its area of dissemination. It was localized entirely in the rural districts, cities situated in the same region escaping. Patients taken into cities for treatment failed to cause any spread of the malady. On the other hand, it was found that miliary fever could be transmitted without the intervention of the patients. The infective agent seemed to come from the fields, and the first houses invaded in a village were always those on the outskirts. It also appeared to be telluric in its origin, or at least it was most apt to attack those who slept on or close to the ground. These considerations led the authors to believe that, as in bubonic plague, the rat might be the carrier of the virus, and many facts were elicited which appeared to confirm this view. The fleas of the rodents are supposed to be the active agents in performing the inoculation. Experimental proof is still lacking, however.

At the Société de Therapeutique M. Legendre discussed the influence of the automobile on health. He said that the rapid displacement of air at the surface of the body gave rise to vasoconstriction which was followed by vasodilatation on stopping, and these modifications of circulation could influence certain dermatoses. He had seen one patient suffering from pruritis which had proved obstinate to all other forms of treatment cured under the use of the automobile. Some emphysematous patients and asthmatics of the nervous type profited by automobiling, but it should be forbidden for tuberculous patients with fever, though it might be allowed if the lesions were discrete and without any tendency to congestion. Chlorotic patients might benefit by short trips, and motoring might be permitted for persons with well-compensated cardiac lesions. It should be forbidden to those with pulmonary or hepatic congestion. Patients with varicose veins could not, without disadvantage, remain for a long time motionless in carriages. Motoring, he said, was beneficial for many gastric conditions, but was inadvisable for patients with ulcer of the stomach. Nephritics and women with uterine disorders might make use of the automobile if there was no tendency to congestion, and gouty and diabetic individuals also profited by it. Obese automobilists were apt to get out of the way of walking and did not take sufficient exercise. Nervous patients of the depressed type were benefited by motoring, but those of excitable nature were made worse, especially if they attempted to drive themselves. The same thing was true for epileptics, and all persons desirous of driving motor cars should be subjected to a medical examination.

The use of raw milk in infant feeding was discussed in the Societé d'Obstetrique, de Gynecologie, et de Pediatrie by MM. Mary and Guillemot. They said that raw milk was living milk, containing living soluble ferments capable of acting on the fat, the lactose, and perhaps even on the proteids. The phosphorus contained in it was also more easily assimilable, and the citric acid played a rôle which was not negligible. There were serious objections to its use, however, owing to the difficulty of obtaining it sufficiently free from germs, and the food of the cows also required consideration. They believed that raw milk should not be employed as a matter of routine, but that in some cases when it could be adequately safeguarded by the producer it might give marvelous results.

At the meeting of the Société Médicale des Hôpitaux M. Vaquez spoke on the treatment of pleurisy by the injection of gases. This, he said, was done with a double end in view, either of inhibiting a tuberculous process or of treating the effusion itself. The first of these indications had recently received consideration in Germany, where in the absence of pleurisy an artificial pneumothorax had been induced in the treatment of tuberculosis. The author considered that in cases of acute pleurisy the duration of the disease itself was abridged, and that in cases of recurrence the injection of gas was the treatment of choice. The procedure had the mechanical effect of allowing the expansion of the lung to take place only very slowly; it was therefore necessary to use some gas which was not absorbed too quickly. Nitrogen was to be preferred, as it was not injurious and remained for a long time in the pleural cavity. The author was able to demonstrate its presence eight months after the injection. The amount to be used was variable, and ordinarily equaled about half the quantity of fluid removed.

The Long Island Society of Anesthetists will hold a regular meeting on Tuesday evening, December 4, at 8.30 P. M. at the Cumberland Street Hospital. Papers will be read by Drs. Clark Burnham of the Cumberland Street Hospital, Longstreet of the Norwegian Hospital, and Pedersen of Roosevelt Hospital.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

POSTGRADUATE STUDY—NOORDEN'S INAUGURAL ADDRESS—SEMMELWEIS MEMORIAL—A RADIUM SPA—EXTRAUTERINE PREGNANCY—LARYNGEAL OPERATIONS.

VIENNA, October 23, 1906.

THE Aerztekammer has this month put in operation a project intended to facilitate the postgraduate study of physicians who are engaged in active practice, and therefore have but little free time at their disposal. Postgraduate courses are to be given throughout the entire year at hours at which even a busy practitioner will have time to broaden his professional attainments. It is the intention in this way to offer practitioners the opportunity of keeping themselves in touch with advances in medical research and to acquaint themselves with the modern developments of science. All of the professors and assistants of the University of Vienna will take part in the courses.

On October 17 Prof. Carl von Noorden delivered his inaugural address on his assumption of what was formerly Nothnagel's clinic. Almost all the members of the faculty were present to greet Noorden, whose reputation, especially in the domain of diseases of metabolism, is so great that our university has gained in importance and standing through his coming. In his address Noorden delivered a glowing eulogy of Nothnagel and praised him as clinician, teacher, and man. He then discussed the position of the medical clinic in the instruction of the medical students, and said that the clinical teaching might be divided into the introductory part, clinical instruction itself, and the therapeutic part. He reviewed with telling force the separate components of the material available and compared our methods with those of the German and American universities. Noorden intends to educate his forces in the clinic along pedagogic lines so that his pupils may be better educated in all departments of diagnosis and treatment. He also discussed postgraduate work and said that he considered it an important matter that should be fostered by all the professors. In speaking of the problems of therapeutics in internal medicine, he warmly commended the innate optimism of the general practitioner. With the general applause of those present he closed his discourse and assumed the direction of this well-known clinic, whose reputation has in the past attracted so many foreigners to the university.

On September 29 the celebration in honor of Semmelweis was held in Budapest. Professor von Gyory delivered an eloquent memorial address in which he described the personality of the eminent scientist and great-hearted man who, through his fight against puerperal fever, had rendered such invaluable service to mankind. On the following day the ceremonies were continued in the university, and were closed by the unveiling of the Semmelweis monument on the Elizabeth Promenade. Some of the most prominent gynecologists of Europe were present, and in their addresses paid tribute to the merits of this immortal man. The monument itself represents Semmelweis in his prime; at the base of the pedestal is seated a female figure looking toward the scientist with grateful eyes while holding her infant to her breast. A memorial tablet placed on the house in Ofen in which Semmelweis was born was also unveiled under appropriate ceremonies.

Austria is to have a radium spa, although the time of its completion is still somewhat indefinite. More than two years ago the Academy of Sciences of Vienna received from the Government 10,000 kg. of uranium ore from the mines of Joachimstal for the study of radium. This enormous quantity of the raw material was brought to Vienna by the carload and the extraction of its radium content was entrusted to Dr. Heitinger. This task is now nearly completed and an amount of pure radium has been secured which, according to the present market price, has a value of 1,000,000 crowns, and which will first be handed over to scientific institutions for purposes of research; for example, the question of the radiation of heat by radium is to be investigated by a new method. A special laboratory for the production of radium salts is to be established in Joachimstal, and it has been proposed to use the springs in the shafts as therapeutic baths, and also to make use of this strongly radioactive water internally. With this end in view these spring waters are being carefully analyzed in Vienna in order to determine their mineral components. As soon as these investigations are completed and the necessary work has been done in the mines a sanatorium is to be erected in Joachimstal.

Dr. Stephen Toth has operated on a case of extrauterine pregnancy at term with a living child. The patient was a woman of thirty-five years who had had two normal labors, the last of which was ten years ago. On examination, the diagnosis of extrauterine pregnancy was made, as the fetus could plainly be distinguished outside of the uterus. At the laparotomy it was found that the left tube was normal for five or six cm. from the uterus, and it then suddenly became dilated and expanded into the fetal sac, which was adherent to the left broad ligament and the uterus. On rupturing the membranes a living child was found with the breech in the pelvis, the head upward and to the right, and with one leg extended and the other foot beside the breech. The child was easily resuscitated and the mother made an uncomplicated recovery. The child was thirty-five cm. in length, had a weight of 3,000 g., and its skull measured fifty cm. in circumference. The foot, which was next to the breech, is a pes varus, and the knee is contracted at an angle of 150°, but otherwise the child is developing normally.

A plastic operation on the anterior wall of the larynx has been performed by Dr. Nauratil The patient was a man of thirty years, who, in an attempt at suicide, cut through his larynx at the level of the vocal cords. The hemorrhage was profuse and the man went into collapse. After resuscitation tracheotomy was done and the transverse wound was sutured. The patient was very restless and tore the wound open again, and in consequence of the suppuration that ensued there was great loss of tissue, which resulted in constant escape of food and saliva from the wound. After the tube had been removed and the tracheal wound had healed severe dyspnea ensued, so that another tube was placed in the laryngeal opening. The treatment of the injury was further complicated by a widespread eczema of the entire neck. A low tracheotomy was done, and after the eczema had been cured Nauratil closed the defect in the larynx with two large flaps formed from the side of the neck, and secured complete closure of the wound in this way. After the patient had been breathing for six months with the tube closed this was removed. The patient is now able to swallow perfectly, and is able to make himself understood, although he has no vocal cords. In phonating he makes use in their stead of the transplanted flaps. Another interesting laryngeal case has been presented by Albrecht. This man's entire larynx had been excised on account of carcinoma, and the patient had succeeded in devising for himself a simple but effective apparatus for speaking. It consisted of a rubber tube, which he passed into the pharynx in order to secure a necessary current of air, while the voice itself was produced by an appliance adapted to the tracheotomy tube. By the aid of this mechanism the patient can make himself understood even at a distance of twenty paces.

OUR DUBLIN LETTER.

(From Our Special Correspondent.)

DUBLIN, November 3, 1906.

ANOTHER October has come and gone; a new *Annus Medicus* has been ushered in to offer its opportunities and drawbacks to the pilgrims on the pathway of medical education; and the doorways of the numerous medical schools and the innumerable hospitals of the Irish metropolis now stand widely open and seem mutely to invite the entrance of the adolescent dreamer of dreams—of future medical and surgical distinction. The time-honored custom of welcoming and advising—as well as attracting—the junior Æsculapian band at each of the teaching institutions through the medium of an "Introductory Lecture" at the opening of each winter session has, of recent years, gradually been falling into abeyance. And in the present year the annual rite has been performed in two only of the Dublin hospitals, the Meath and St. Vincent's. It is specially interesting, in the present stage of Ireland's emergence from the political gloom of many centuries, and its rapid bloodless progress through an epoch-making revolution, to observe that the conservative course has, on this occasion, been adopted by the leading representative hospitals of the conservative and nationalist parties and interests, respectively. The former institution has for a century and a half or so been the foremost institution of its kind—as representative of Protestant interest and science, under the influence of protective English ascendancy—in Dublin, and we may gratuitiously add, in all Ireland. St. Vincent's Hospital (necessarily), of junior growth, may be regarded as a blossom of the successful movement of "Catholic Emancipation" in the same country; when the lurid cloud of religious and social proscription was, after an existence of centuries, torn—but not yet rolled back—over the heads of the majority of the population of Ireland. Accordingly the incident of a single pair of "Introductories"—so chosen—thus arranged in the Irish metropolis is looked upon as surely significant; even prophetic. That at the former hospital was delivered by Sir Lambert Hepenstal Ormsby; at the latter by Mr. John Stephen McArdle. The Meath

Hospital was founded by the representative scion of a Protestant aristocratic house, and has, in inevitable accordance with this origin, always formed a symbol of the English ascendancy in and settlement of the Emerald Isle. St. Vincent's Hospital owes its existence to the exertions of an Irish Catholic lady who adopted a saintly life of celibacy and retirement in preference to the pursuit of the pomps and vanities of a wicked—and disappointing—world, and devoted her person, her time, and all her available energies—physical and intellectual—as well as all her material earthly possessions to the glory of God and the improvement of the physical (as well as spiritual) condition of her suffering fellow-creatures in the progress of their painful life pilgrimage.

The introductory lecture at the Meath Hospital opened with a brief historic sketch of the institution and its recent onward progress in the van of the intellectual march of surgery. Forty years ago the lecturer became an apprenticed pupil. Antisepsis and asepsis were then undreamed of in the practice of their hospital theaters and wards—and now! With characteristic modesty Sir Lambert Ormsby passed over the unique part which he had himself played in the introduction of antiseptic surgery. Nor did Sir Lambert Ormsby allude to his own exertions in the introduction of orthopedic surgery into Ireland, where he made himself its first apostle; nor to his classical volume on this specialty: "The Deformities of the Human Body." The lecturer then proceeded to call attention to the crying grievances which still exist in the military and naval medical services.

The Meath Hospital has always been peculiarly fortunate in its literary scientists. Robert Graves and William Stokes the pioneers of modern clinical teaching, raised its fame by their clinical lectures and published writings to a higher level than that of any other institution of its kind in existence. The mantle of Stokes has, happily, fallen on the shoulders of his accomplished successor, Sir John Moore, whose work on the "Continued and Eruptive Fevers" has for years been the foremost English classic in this very important department. These textbooks, of the Senior Physician and Senior Surgeon, respectively, of the foremost of the Dublin hospitals, are both representative monuments of the professional skill and scholarly attainments which so characterize the authors of both.

Mr. McArdle chose for his lecture the subject of "Tuberculosis," and dealt with this crying evil with his usual boldness and originality of thought and precision of meaning. His views on notification and the value of sanatoriums have been warmly advocated by the lay press and are sure to bear early fruit. Indeed, the only faint flutter of discontent evolved by his lecture was the moodily-whispered one of some atrabilious physicians who insinuated that this brilliant operator, having conquered the world of surgery, seemed now about to invade one of the most important and fruitful of the physician's preserves. But it is safe to say that no such thought had entered the mind of the speaker.

Progress of Medical Science.

New York Medical Journal, November 17, 1906

Some Remarks on the Diagnosis of Typhoid Fever.—R. Stein thinks that diagnosis in this disease is still beset with difficulties. Precise diagnosis is not always possible. Typhoid cases present no difficulty. The difficulties have been augmented by the occurrence of the recent influenza epidemics. Some of the laboratory tests are confusing and misleading. Moreover, the surgical trend of practice has increased the practitioner's responsibility and anxiety. The sudden onset of indications may call for an exploratory laparotomy that reveals possibly a typhoid perforation, possibly an appendicitis or a suppurating gall-bladder. The author makes a plea for a more careful study of the temperature curve, for a close observation of the clinical ensemble, search for an enlarged and palpable spleen, and for the elimination in a suspicious case of a simple gastrointestinal infection. He discusses the combined toxemia of malaria and typhoid. He attaches most importance to the Ehrlich test. As to examination of the blood for bacilli, he notes that in just three cases in which we are in doubt the bacilli are not plenty enough to be demonstrated with any degree of certainty. The Widal test is satisfactory, but the author notes that in private practice it has served him as a means of proving diagnosis after it was otherwise established, rather than as an absolute sign. He considers the leucopenia as the most striking feature of typhoid blood. Another very striking characteristic is the regularity with which the eosinophile cell disappears in the course of the febrile run.

The Membrane and Complications of Diphtheria.—The paper of W. S. Cornell is largely a statistical study of 616 cases collected from Philadelphia municipal reports for 1905. Comparisons are also made with similar figures from other cities. Briefly, we may say that the tonsil (one or both) was involved in 456 cases. The membrane was limited thereto in 252. The larynx (including the trachea) was involved in 63 pure and 43 mixed cases. The nose was involved in 11 pure and 33 mixed cases. The pure pharyngeal cases numbered 28. It seems to be true that in growing children the disease is more apt to attack the larynx and nasal cavities, and that a marked tendency is shown by the membrane to spread from the part first involved and to attack the pharynx secondarily. Of the total 616 cases, 133 were classified as mild, 258 as of moderate severity, 184 as severe, 40 as septic, and 1 as gangrenous. In 579 cases definitely reported 432 were free from any special complication. The complications most frequently met with were these: Adenitis and cellulitis 66, neuritis 24, nephritis 21, myocarditis 19, pneumonia 10, scarlet fever 4, hemorrrhage from the nose 3. The mortality rate of the series is not given.

The Tuberculosis Problem in Prisons and Reformatories.—S. A. Knopf covers familiar ground in his paper which directs special attention to the high mortality rate from tuberculosis in institutions of the class named. He finds that it begins in the early environment of most prisoners who have in the majority of instances grown up under a distinctly bad hygienic environment. So far as early diagnosis is concerned, he calls attention to the fact that when bacilli are present in the sputum there has already begun a disintegration of lung tissue. The author does not believe in tuberculin as a diagnostic test, claiming that it has caused reaction in actinomycosis, syphilis, and anemia, and has reacted in cases in which there was no tuberculosis present. The paper closes with a plea for more sanitary conditions in prisons, and various suggestions are made with reference to lessening the amount of tuberculosis in prisons and reformatories.

Aids to Accuracy and Efficiency in Radiotherapy.—H. G. Piffard describes two instruments. The first is called an oscilloscope and consists of a vacuum tube nine or ten inches long, and an inch or more in diameter. Sealed into the ends are electrodes extending nearly to the middle, being sparated from each other by a gap of about a tenth of an inch. When the tube is connected to the terminals of the coil, and the current passes, a bright glow will surround the electrode nearest the negative side of the coil, while the positive terminal will be free from it. In a unidirectional current the glow persists on one of the terminals, but as the coil current is alternating we find in practice that for an inch or more both terminals will glow, due to the fact that they each in turn become negative, and the alternations are of such frequency that the eye cannot separate them. The extent of the flow may be approximately equal on each side, or one may be much shorter than the other. The fact of the double glow indicates the existence of the inverse current. The second device is known as the Villard valve, the action of which is based on the fact that the positive current flows readily in a vacuum from an electrode of small surface to one having a surface very much larger, but will not flow readily or at all from a large surface to a small one. In this way the inverse is choked off or quenched. If the valve should for any reason prove inefficient the oscilloscope detects the fact; and all valves should from time to time be tested with it. The valve then inserted in series with an *x*-ray tube rectifies the current, and renders it unidirectional, and the milliampèremeter will give a true reading, and indicate the amount of energy expended in generating the rays. In using the valve it is fully as important to maintain a uniform vacuum as it is with the focus tube. The original Villard is furnished with a platinum osmoregulator which may require attention several times during a single exposure. The author prefers a modified form (figured in the paper) in which the regulation is automatic. The vacuum should be a mean between a Geissler and a Crookes. The appearance of a green fluorescence in the tube indicates that the vacuum is much too high. A thoroughly efficient outfit, then, will comprise not only a coil and tube, but also a valve and a milliampèremeter, together with an oscilloscope to act as a detector of an inverse current.

Journal of the American Medical Association, November 24, 1906.

The Causation of Ground Itch (Uncinariasis).—C. A. Smith has been able, by using pure cultures of the larva of *Uncinaria americana,* to make an alcoholic extract from them that is very irritating to the skin and produces the symptoms of a mild type of ground itch. The mildness of the symptoms, he thinks, may be due to the fact that the application was made externally and only once in each case, while in the true form the larvæ penetrate beneath the surface and continue there to give out their irritating secretion. The substance causing this eruption has not yet been obtained in sufficient quantities to be recognizable. It appears to act somewhat as the poisonous principle of poison ivy. Extracts made with ether or simple water produce no symptoms. The control experiments with absolute alcohol were likewise symptomless. The article is illustrated.

Paralysis Without Gross Anatomical Change.—J. H. W. Rhein gives the histories and pathological findings in seven cases of paralysis associated with chronic kidney disease, such as are not infrequently regarded as of uremic origin, gross anatomical lesions being wanting. The microscopical examination revealed the lesions of probable or possible syphilitic disease of the brain in all the cases, round-cell pial infiltration and vascular thickening, etc., but in two of the cases minute patches of softening in the paracentral region were discovered. Rhein believes that such patches, undetected by macroscopical observation, are often the cause of hemiplegias reported as not associated with gross anatomical changes. Another cause which should not be overlooked in these cases is syphilis, and he emphasizes the importance of careful and extensive histological studies of the brain and spinal cord before excluding demonstrable lesions, in reporting these cases. The perivascular distention which is extensive in some of the cases may also, he thinks, play its part in the production of the transitory paralyses that are observed.

Affections of the Spinal Cord in Epileptics.—W. N. Bullard gives the results of his examinations of over 500 patients in the Massachusetts Hospital for Epileptics. He found evidence of spinal cord disease in a small number. In certain proportion it was only a coincidence, but in a far larger proportion the same cerebral lesion produces the symptom-complex of epilepsy and the secondary degeneration of the spinal cord. We would naturally expect to find secondary degeneration of the cord in epileptic hemiplegia, and he states that we occasionally find other spinal affections, possibly also secondary to cerebral lesions. In the third class of cases the primary pathological cause of the convulsions acts directly on the spinal cord as well as on the brain, and in such cases one can be primary as well as the other. It is probable, he says, that in typical idiopathic epilepsy, lesions can be found in the cerebrum or cerebellum in practically all cases when properly examined, and he believes that similar lesions can be detected in the spinal cord, though definite evidence is still lacking. In conclusion, he remarks that, since writing the above, he has heard from Dr. Southard that microscopical examination of spinal cords from epileptics have given interesting results. Marchi degenerations of a diffuse nonsystemic character were found in almost every case of the series examined.

Faucial Tonsils.—Charles M. Robertson presents some observations made in the last few years on the entrance of tuberculosis into the general system with special reference to the faucial tonsil. He describes in detail the anatomy of this structure and its relations to other parts. He relates his researches, and in regard to infection states that if the surface membrane were the point of entry we should find tuberculous changes here. This he has never seen in the slides examined. It has always been in the crypt. The crypts which empty into the throat direct are seldom if ever affected. Those emptying below the middle of the gland were not affected in a single instance. The greater number of infections were from crypts emptying into the supratonsillar fossa. The part of the crypt affected is universally in its deeper extremity where giant cells are abundant in the tuberculous tissue. A few giant cells were at times noticed along the beginning of the crypt, but in these sections they were less in number than in the deeper part of the crypt. The cells were found dispersed in the tissue as far as the trabeculæ which seemed to limit the spread of the tuberculous change. When the gland is diseased, he says, it is important that it be enucleated completely, and that pockets in the soft tissues around the tonsils must be destroyed. He describes his treatment and technique and discusses accidents liable to occur during and after operation. The article is fully illustrated.

The Odor Test in Middle Ear Suppuration.—H. Gradle calls attention to the value of the odor test as a guide in the conservative treatment of ear disease. If the odor quickly disappears with washing out with water, followed by boric acid applications, the disease is evidently superficial and requires no operation. Even when small areas of caries exist this treatment may sometimes suffice, though perhaps more time or some modification may be needed. When irrigation followed by boric acid applications fails to remove the odor within a few days it is useless to continue it. Intratympanic irrigation will occasionally succeed in dislodging pent-up pus or retained epidermic scales, whereon the odor disappears and the now accessible focus of suppuration heals, but not very often. In a certain number of cases the suppurating source is so inaccessible that these methods all fail to remove the odor of decomposition. The only successful conservative treatment for these cases in Gradle's hands has been careful tamponing with gauze, introducing narrow strips of good absorbent gauze, after proper cleansing, into actual contact with the source of the pus as far as it is visible. The efficiency of the method depends upon the dryness of the gauze and hence its frequent replacement. The improvement is slow, it is never less than three weeks, and often over six, before the gauze remains dry. The odor may persist till there is absolutely no secretion or it may cease when it has been reduced to a minimum, when suppuration often ends within a few days. Treatment by gauze drainage ends in a complete cure (50 per cent. of cases), partial cure (33.3 per cent.), or failure (16 per cent.). If properly done tamponing does not distinctly lessen the discharge within three weeks, and continue to reduce it, no ultimate benefit can be expected and operation only will succeed. As partial cures Gradle reckons those cases in which the drainage removes the odor but fails to stop completely the suppuration, a trace being left. He hesitates to recommend operation in these cases of partial success. With due care the patients get along without serious consequences, and in his experience the disease has lost its progressive and hence dangerous character when the odor has disappeared.

Constitutional Low Arterial Tension in Children.—L. F. Bishop calls attention to a condition observed in children, of constitutional low arterial tension, probably of nervous origin, though the symptoms are circulatory. The pulse in these cases would suggest in others the prostration of acute or chronic disease, but the condition is habitual, there are no heart lesions or cardiac symptoms, and the kidneys act normally. The defect seems to be in a lack of the normal back pressure in the peripheral circulation, the blood circulates too easily. To differentiate such a case from cardiac weakness one need only make a demand on the circulation by active exercise or observe the response in the case of acute disease. Such children suffer much discomfort from lack of circulation, as by cold feet, depression, constipation, and skin disorders. They are also subject to catarrhal disorders, but they thrive on active exercise and on every sort of mental and physical exercise that stimulates the circulation. Very hot baths of short duration benefit them, but they do not respond well to cold baths. Though the class is not a large one, the cases are sufficiently numerous to be met by every pediatrist. The importance of recognizing the condition lies in placing it where it belongs, and not seeing in it the accompaniment of a supposed anemia or cardiac disease or a sequel of some local disorder. It is a condition that must be met by a proper regimen, and is one that has a tendency to improve or even to disappear after adolescence. Its proper recognition will relieve anxiety on the part of the family physician; it is not a true failure of the circulatory apparatus resulting in an inability to respond to the demands for pressure, nor is it due to the exhaustion from prolonged high arterial tension. This latter, secondary low arterial tension, is rare in children.

The Lancet, November 10, 1906.

Adolescent or Late Rickets.—H. H. Clutton gives the clinical histories of three cases and furnishes an illustrative plate. He thinks the disease is practically the same as infantile rickets modified in some respects by the age of the patient. Is the adult form a continuation of the infantile or an entirely fresh development? The author declares that in many (not all) instances he is inclined to regard it as a distinct development.

On this supposition, therefore, we must assume that rickets may arise at any age from infancy to adolescence. The causes at work all tend to produce the same changes in the bones. Although we naturally attribute to diet the main responsibility for infantile rickets, we do not deny the influence of the hygienic surroundings of the patient's home. In fact, whatever interferes with metabolism of the body would be likely to prevent the normal development of the bones. One of the most important of these influences upon metabolism must be the higher nerve centers which, unimportant in infancy, are quickly developing toward the age of puberty. We must therefore acknowledge that new factors arise which are scarcely present in infancy, and which are of as much importance as food, if not more. The period of from 12 to 14 years of age is a time of great intellectual stress from the educational point of view, and anyone who has seen much of children will know what this may mean to many. In some children the competition of school life may produce all sorts of nerve trouble, from insomnia and night terrors to epileptiform convulsions or facial distortion and mimicry. The same intellectual strain and competition will continue throughout the adolescent period of life or even longer. This is more important than diet at this age, for if it be a cause of this trouble it is difficult to eliminate, and accounts perhaps for the long continuance of the adolescent cases. It is noticeable that in two of the patients diet can have had but little influence as they were the children of fairly well-to-do parents. In the first case there is evidence of prolonged mental strain during school life, and in the second the patient had reached the sixth standard of the board school at from 12 to 13 years of age. The latter fact perhaps only proves that she was not a backward child. No special treatment is applicable to the adult form.

Stokes-Adams Disease, and Cardiac Arrhythmia.—J. Hay and S. A. Moore present a final report on a case of bradycardia and heart-block first exploited in the *Lancet* of January 20 of the current year. Full autopsy records are given, together with various charts showing the variations in conductivity and pulse frequency. The interesting feature is that they have been able to record a case of Stokes-Adams disease in its second stage—that is, in the stage of syncopal, apoplectiform, or epileptiform seizures. These seizures were of all grades of severity and tended to occur in groups with periods of comparative comfort intervening. The advent of seizures was usually indicated by definite prodromal symptoms. The necropsy revealed partial obliteration of a certain nerve bundle which would cause a persistent depression of conductivity. An analysis of numerous tracings revealed marked variations in conductivity, all grades from normal conduction to complete heart-block being in evidence at one or another time. This suggests influences in addition to the organic lesion. Such influences were probably nervous in character and affected conductivity either directly through the vagus or indirectly by altering the auricular frequency.

Erythema Autumnale.—J. C. Thresh refers to a dermatosis, called also harvest rash or prurigo du Rouget, due to a parasite living on the ordinary harvest spider. Méguni has described the parasite, regarding it as the hexapod larva of the silky trombidian (*Trombidium holosericeum*). The larval form is so small as to be barely visible to the naked eye, but being of a brick-red color masses of them are easily distinguishable. They apparently breed upon plants, but when opportunity occurs transfer themselves to man or animals. They chiefly attack persons with delicate skins and seem to prefer the legs and inner side of the thighs, but may reach any part of the body. From the legs they very quickly travel to the upper parts of the body unless their progress is arrested by some tight article of clothing. The base of the downy hairs attracts them, and here they attach themselves by their formidable-looking claws and insinuate their suckers under the epidermis or into the glands at the base of the hairs. The abdomen of each larva then gradually distends until it is four or five times its original size and becomes visible as a bright red dot. The itching produced is so intense that the patient cannot rest. The skin swells, becomes red, or sometimes even violet, around the points attacked. These points, which may be a centimeter in diameter, are always discrete and usually have a central projection of appreciable size. Sometimes the eruption is distinctly papular or vesicular, and if rubbed may become pustular. This malady seems especially common in France, where benzine is used to kill the parasite and warm baths or dilute vinegar to allay the irritation. If a part has been affected where benzine could not be a safe application, as the eyelid, the parasites may be dislodged by a fine needle.

The Treatment of Laryngeal Tuberculosis.—H. Barwell discusses the limitations of local treatment in this disease. He notes that when the accompanying pulmonary lesion is so far advanced or so rapidly progressing that a restoration to some degree of health and comfort cannot be looked for, the treatment of the laryngeal affection should be entirely symptomatic; that where there are no severe symptoms it is both useless and cruel to submit the patient to active treatment either with cutting instruments or strong caustic pigments. Such cases make up a large proportion of all the cases of tuberculous laryngitis which come under his care. He finds that antiseptic and caustic pigments are of great value in promoting the healing of ulcers and the shrinkage of granulations, but they have little or no effect on massive infiltration lying beneath unbroken epithelium; they must be applied under guidance with the mirror on a strong cotton-wool mop and must be thoroughly and forcibly rubbed into the affected parts. The secret of success lies in their proper application, and a light painting on of pigments is of little use. Among the many drugs employed in this way lactic acid still holds its place; it must be used in sufficient concentration, and for some time he has employed almost exclusively a mixture introduced by Lake consisting of lactic acid 50 per cent., formalin 7 per cent., and carbolic acid 10 per cent. No local anesthetic is necessary before the application of pigments; the frequent use of cocaine has a most harmful effect on the appetite and the general health. At the most in very irritable cases a little 5 per cent. solution of cocaine to the pharynx may be employed until the patient becomes used to the manipulation. Before surgical operations thorough anesthetization is necessary. For this purpose he sprays a little 10 per cent. cocaine on to the pharynx and then from a curved syringe guided by the mirror drops a little of the same solution on to the epiglottis and on to the part to be operated on; after an interval of five minutes he repeats this, and after a similar interval performs the operation. In this way the cocaine is only applied where it is wanted and, very little being used, he has never seen bad effects; the method is pleasant to the patient and does not cause coughing or irritation.

British Medical Journal, November 10, 1906.

Improved Methods for Recognition of Blood and Seminal Stains.—E. H. Hankin considers this question with special reference to tropical climates. In such climates if the stains are kept moist they putrefy rapidly; if kept dry they become so insoluble as to react with difficulty in ordinary reagents. The author therefore adopts for blood stains the following procedure: If on clothing, etc., the suspected stain is cut out and plunged into boiling water for a few moments. It is then placed on a glass slide and wetted with ammonium sulphide. It is examined under the microscope, and the specimen is moved until the whole field of view is occupied by a portion of the colored material. If this cannot be achieved with a low power, the use of an oil immersion may be necessary. The eyepiece is then taken out and replaced by a microspectroscope. If the stain is of blood the two absorption bands of hemochromogen will be seen. Should the bands not be visible—as may occur, apparently owing to the effects of commencing putrefaction—a drop of a 10 per cent. solution of potassium cyanide should be allowed to fall on the stain. Two bands will at once develop resembling those of hemochromogen, but situated a little nearer to the red end of the spectrum. The object of boiling the blood-stained cloth is to prevent the coloring matter from going into solution. In case of seminal stains, the following rules are given: (1) The suspected stain is boiled for two minutes in a watery solution containing tannin ½ per cent., and sulphuric acid 1 per 1,000; (2) the stain is washed for two minutes in a solution made by adding one part of saturated ammonia solution to 400 of water; (3) it is then transferred for two minutes to a 2 per cent. solution of potassium cyanide; (4) it is then rapidly washed in distilled water, scraped, and teased up on a glass slide, dried, fixed by heat, and stained.

Tetanus in Two Brothers; Subdural and Subcutaneous Injections of Serum; Recovery.—Detailed histories of the cases are given by J. Adam. Case I was that of a man of 29 years who had been thrown from a van and dragged along the road, receiving several dirty

wounds on the head, hands, and legs;tetanus symptoms on tenth day; serum began on the eleventh day, finished on twenty-second day; two subdural injections. Total amount injected 157 cm. Case II was that of a farmer with a slight bruise of the great toe; first tetanus symptom on third day; muscles of jaw and spine chiefly involved; serum first injected on the seventh day (subdural), last injection on fourteenth day. Total amount 100 cm. Wound swabbed out with pure carbolic on seventh day, but required no further dressing.

Quinine Hemoglobinuria or Blackwater Fever.—A. D. Kelcher reports the case of a man of 28 years who was suffering from chronic malarial poisoning and in whom the administration of quinine presented the invariable sequence referred to in the title. Reference is made to other similar cases on record. One and one-half grains of quinine would cause hemoglobinuria to appear in two hours. The indications for treatment of the case reported were perfectly clear, and simply consisted in stopping the administration of the quinine, which was so evidently the exciting cause of each attack, and if the quinine is the exciting cause in all cases, the continued administration of this drug seems quite irrational and productive of nothing but harm. In this case, within twenty-four hours of the commencement of the attack, the urine had again become its natural color, the jaundice had almost disappeared, and the temperature was only slightly above normal. If repeated doses of quinine had been given the patient's symptoms would have been intensified instead of disappearing, and from the gravity of the condition after single doses it would have been easy to foresee a fatal termination had the original cause of the attack been frequently repeated over a short period of time.

Münchener medizinische Wochenschrift, November 6, 1906.

Sarcoma of the Epicardium.—Schöppler reports a case of this variety of new growth occurring in a woman of seventy-three years. The heart weighed 680 g. and there were metastases in the left adrenal body. As the result of a review of the literature he was able to find recorded only four cases of primary new growths of the pericardium and only sixty cases of primary tumors of the heart. Of these twenty-nine were in men, fifteen in women, and in seventeen cases the sex of the patients was unknown. He concludes that new growths of the pericardium are among the rarest of neoplasms and that of tumors of the heart fibroma and myoma are the most frequently seen and sarcoma has the second place. Tumors of the heart and the pericardium are usually connective tissue tumors, and most often originate in the left auricle. Men are oftener attacked than women, and the age of the patient has little bearing on the etiology. New growths of the heart do not present any characteristic clinical picture.

The Occurrence of Endocarditis in Muscular Rheumatism.—Bechtold, like Leube, is of the opinion that muscular rheumatism as well as the articular variety is an infectious disease, and gives as his reasons for this belief its occurrence in epidemics, the elevation of temperature that is frequently observed, the general constitutional disturbance, and the complication of endocarditis that is present in many cases. In an epidemic observed by the author during the past summer endocarditis was present six times, whereas in 902 cases observed since 1893 endocarditis was noted only eleven times. The author considers that this fact of the greater tendency to endocarditis in some epidemics than in others is an argument in favor of belief in the infectious nature of the disease, for variations in the frequency of certain complications in different epidemics form a characteristic of many infectious diseases. Leube has suggested that the infectious agent of muscular rheumatism, if not simply the attenuated virus of articular rheumatism, may be at least closely related to it, but apparently the two are not identical.

Deutsche medizinische Wochenschrift, November 8, 1906.

The Use of Carbolic Acid in the Treatment of Buboes and Furuncles.—Wolff writes very favorably of the use of concentrated carbolic acid in the treatment of inflammatory conditions such as buboes, carbuncles, furuncles, etc. The acid used for this purpose, he says is preferably a concentrated solution of the crystalline acid in absolute alcohol in the proportion of nine of the former to one of the latter. The acid liquefied with alcohol is said to be more effective than when water is used. If the bubo, for example, is not fluctuating, a small amount of the acid is painted on the overlying skin every day for three or four applications until the skin begins to desquamate. Several days are allowed to elapse without treatment, and then, if necessary, the applications are repeated. Fluctuating buboes receive two or three applications of the acid and on the fourth day are incised sufficiently to allow the contents to escape. The abscess cavity is swabbed out with the acid and this is repeated at intervals of two or three days until a granulating wound results. Furuncles if of only moderate severity are treated by dabbing on small amounts of acid, but if they are large, or already give evidence of breaking down, it is necessary to work the acid into their interior through either an already existing natural opening or through a small incision. In many cases a central canal can be discovered through which it is possible to introduce the acid by means of a fine probe. This method is said to be just as effective but much less painful than the old plan of injecting the acid into the depths of the lesions by means of a hypodermic needle. The author also recommends carbolic acid applied in a similar way in the treatment of aphthous and ulcerative stomatitis, scrofuloderma, and tuberculous glands.

The Effects of Nicotine Injections on the Aorta of the Rabbit.—Adler and Hensel describe the lesions produced in the vascular system of the rabbit as the result of intravenous injections of nicotine. One and five-tenth milligrams of the drug were injected at a time and it is stated that after thirty-eight injections in most cases demonstrable changes are present in the aorta. These comprise necroses of the circular muscular fibers of the media, which are partly localized and partly cover considerable areas. The degenerated muscle cells become calcareous, but fatty degeneration was not observed. In consequence of this weakening of the arterial wall the elastic fibers stretch and become dilated so that the lumen is increased in size. The necrosis and calcification are confined to the media, but where dilatation of the vessel results a marked proliferation and thickening of the itima also occur. While these lesions are not exactly comparable to those of arteriosclerosis, the authors consider that they are of importance in regard to the theory of aneurysm formation and they hope that their prosecution will throw help to clear up the difficult problems of human arteriosclerosis.

French and Italian Journals.

Paralysis of the Abducent Nerve During the Course of Otitis.—M. Terson and M. A. Terson speak of the development of persistent diplopia accompanied by all the signs of ocular muscular impotence in children during the course of a purulent otitis. In such cases parents and physicians fear a fatal termination either by meningitis or by thrombophlebitis of the intracranial venous sinuses. Nevertheless, ocular motor paralysis is not always a precursor of grave complications. Sometimes occuring by itself, at other times accompanied by optic neuritis, the affection goes on to recovery. The writers have observed two cases of this nature. They conclude from their investigations that there may exist a paralysis of the abducent nerve which develops during a suppurative otitis media and which may occur by itself or which may be accompanied by optic neuritis. In several cases this complication has not had a serious termination either in relation to life itself or in relation to vision, but has been completely cured. It is very probable that such a condition is not associated with a reflex disorder, but with a condition of infection; and that the various anastomoses, venous and lymphatic, which associate the sixth pair of nerves with the middle ear through the medium of the carotid and the carotid canal, play a rôle which explains the relative frequency of this complication.—*Archives médicales de Toulouse,* June 15, 1906.

Resistance of the Virus of Rabies to Putrefaction.—Tullio Mazzei has observed that the brains of rabid animals preserve their virulence even after putrefaction has set in up to three weeks after death. The author has made experiments on partially putrefied brains sent to the laboratory for examination. He finds that by the method of filtration the virus may be used for inoculation into the peritoneum of animals and will prove virulent. If the method of preparation with glycerine was used the material would be worthless for purposes of examination and diagnosis. The period of incubation is much elongated, and this depends on the diminished virulence of the germs. Negri's bodies resist putrefaction for a long time and may be recognized for ten days, while the material remains virulent up to forty days. This method is of great value in enabling organs that have undergone putrefaction to be successfully examined.—*La Riforma Medica,* September 22, 1906.

Book Reviews.

A Short Practice of Medicine. By Robert A. Fleming, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on Practice of Medicine, School of the Royal Colleges, Edinburgh; Assistant Physician, Royal Infirmary, Edinburgh. London: J. and A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1906.

The author apologizes for bringing out another Practice of Medicine, knowing that there are many in the field. He justifies his work, however, by claiming that a shorter treatise will be found of use in preparing for examinations and as a help in clinical lectures.

A weeding-out process has been employed in order to make the book of practical size; for instance, the examinations of the urine and stomach contents and sphygmographic tracings are omitted, the reader being expected to refer to special treatises on clinical and laboratory methods. The skeleton of this volume is much like other works on the subject, starting with the infectious diseases, constitutional ailments, intoxications, parasitic diseases, diseases of the various systems, and concluding with a very excellent one of two hundred pages on the nervous system. This last section has some well-chosen and instructive plates and will prove a valuable synopsis of the present knowledge of these diseases.

If we were to criticise any one feature it would be that the paragraphs on treatment are too brief and not helpful enough. In the technique of typhoid bathing no mention is made of the all-important surface friction and the expressed fear of collapse and cyanosis would indicate that surface rubbings were probably insufficient when performed by English nurses. As a whole, the book is full of concise information, up to date, sound in its teachings, following the conservative methods, clear though concentrated, and as a shorter treatise it will surely find a place, particularly in the hands of students.

Phlebitis and Thrombosis. The Hunterian Lectures for 1906. By Warrington Haward, F.R.C.S., etc. New York: William Wood and Company, 1906.

This book constitutes a valuable addition to the literature of the subject, containing as it does not only an excellent résumé of what is known in general on the subject, but also the writer's own observations, particularly as regards the remoter effects of the lesion. In connection with this attention is directed to the treatment of the condition, the main point being that in cases in which a vein becomes obstructed by a thrombus, the collateral circulation should be developed in the deep rather than in the superficial veins. The work presents an excellent and valuable summary of the subject within the limits of a comparatively small number of pages.

The American Illustrated Medical Dictionary. A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the Kindred Branches, with their Pronunciation, Derivation, and Definition, Including much Collateral Information of an Encyclopedic Character. By W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital; Editor of the American Pocket Medical Dictionary; Fellow of the American Academy of Medicine. Together with New and Elaborate Tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Diplococci, Micrococci, Ptomains and Leukomains, Weights and Measures; Eponymic Tables of Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc. Fourth Edition. Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1906.

This is the most compact and easily handled of all the unabridged medical dictionaries in the market, yet it is not lacking in completeness, for a careful test made with a list of the most recently born medical terms has shown very few absent. The type is small but distinct. The definitions are in general excellent—concise, yet comprehensive, clear, and accurate. In these respects Dorland's dictionary is worthy of the highest commendation, and is the equal, if not the superior, of its rivals. But the editor stumbles badly and sometimes falls flat in his spelling and pronunciation. His spelling is inconsistent. For example, he insists upon leukocyte, yet spells leuconostoc with a *c*, although both are derived from the same word, λευκός; he writes catabolic, but karyokinesis, although both are derived from Greek words, with initial κα. The convenient distinction made by the United States and British Pharmacopœias between alcaloids and glucosides in spelling the former with and the latter without a final *e* (morphine, salicin) is ignored in this dictionary. Indeed, throughout the work there is apparently no rule for spelling, and no recognized authority is followed except the editor's personal preference, which the reviewer finds too uncertain to recognize as authoritative. It is not even Rooseveltian. The same may be said regarding the pronunciation. Syncytium is pronounced here sin-sish'e-um, but syncytiolysin, sin-sit-e-ol'is-in; opponens is accented on the antepenult in utter disregard of Latin quantity and English usage; Pfeiffer and Pflüger are prematurely turned into English cognomens, the initial *P* being ignored in the pronunciation; thermometer is correctly accented, but motormeter is accented in the first syllable, though in motorpathy the accent is placed on the second syllable. As regards spelling and pronunciation this dictionary is an unsafe guide; but in respect of definitions (after all, the most important consideration in a medical dictionary) the work can be confidently recommended. In a progressive science, in which the coinage of new words is so active as it is in medicine, the latest edition of any standard dictionary must of necessity be the most complete for the time being, and so we can say that the fourth edition of Dorland's Dictionary is at the present writing the best.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery under the general editorial charge of Gustavus P. Head, M.D. Vol. VI. Series 1906. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. Chicago: The Year Book, Publishers, 1906.

In this volume, the sixth of this useful series of year books, is included Part II. of General Medicine. The subjects covered are typhoid fever, malaria, yellow fever, relapsing fever, malta fever, beriberi, dysentery, and diseases of the mouth, stomach, intestines, liver, pancreas, and peritoneum. An appendix on abdominal and epigastric pain and on tuberculosis of the thoracic duct is added. The work of compiling and editing this volume has been done with great care and good judgment, and it forms a worthy addition to the other volumes of the series already published.

Elements of General Chemistry with Experiments. By John H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth Edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1906.

This is not a textbook on chemistry, but is essentially a book of experiments for use in the laboratory. As such it should serve a useful purpose, the experiments being numerous and well selected. In this edition there is a new chapter dealing with the theories of solution and the conditions of chemical equilibrium, both of which topics are dealt with in a brief, but clear and satisfactory manner. The book is well worth the attention of teachers.

Commentarii di Clinica Moderna desunti della Morfologia del Corpo Umano. Pel Prof. Achille De Giovanni, Direttore della Clinica Medica Generale della Regia Università di Padova, etc. Parte Speciale. Milano: Ulrico Hoepli, 1907.

In a preceding volume, the "General Part" of the present monograph, Professor De Giovanni described the fundamental principles of "clinical morphology," as he styles his subject, and considered the methods of scientific diagnosis. De Giovanni's work emphasizes, as its title implies, the value of morphological considerations in the study of clinical data. The young physician should be so drilled in his morphology, in his knowledge of the relative positions, measurements, and structure of parts, as to be able to note without measurements any deviations from the normal. Somatometry must be used, however, when more precise data are needed. The present volume, the first of those intended to cover the special part of the subject, is devoted to the study of the "clinical morphology" of the abdomen. A great variety of subjects are considered, and it would be impossible to review these essays in full. The morphological relations of the abdominal circulation of venous and lymphatic plethora, of "abdominal scrofula," etc., are considered in the first two chapters. Next the pathology of the ascending vena cava and that of the liver and the spleen are treated in a series of essays. The subjects of "idiopathic hematuria" and the "lymphatic kidney" giving rise to a physiological albuminuria are discussed in two chapters, while the closing essays are devoted to primary pancreatic cancer and to "gynecological notes." Professor De Giovanni's monograph is written in fascinating, easy, and personal style, which renders it worth reading in hours of relaxation. His ideas in many respects are original, and he displays throughout that wonderful gift of teaching and of clinical observation which, unfortunately, is so rare in these days.

Society Reports.

DELAWARE STATE MEDICAL SOCIETY.

Annual Meeting Held at Wilmington, Tuesday, October 9, 1906.

PRESIDENT, DR. JOHN PALMER, JR., OF WILMINGTON.

THE meeting was opened with prayer by the Rev. William Fred D. Lewis, Wilmington. An Address of Welcome was delivered by the Hon. LEVIN IRVING HANDY. In the course of this address the speaker referred to the spirit of jealousy that existed among the members of the profession, due largely, he believed, to the fact that they were so segregated in their work, and believed that closer association would do much to eradicate this feeling. He urged the enactment of laws requiring both a higher preliminary education and a longer course in medicine as a prerequisite to its practice.

The President's Address.—Dr. JOHN PALMER, JR., of Wilmington, in his address, reviewed the progress of medicine and surgery and the establishment of medical schools, hospitals, etc. He favored the present tendency to give less medicine and improve the sanitary and hygienic conditions, and cited approvingly among recent acquisitions to the relief of disease, the open-air treatment of tuberculosis, the *x*-ray, etc. He felt that the specialist should have a foundation of some years in general practice.

Early Diagnosis of Tuberculosis.—Dr. A. ROBIN of Wilmington, in this paper, remarked that until recently this disease had been looked upon as necessarily fatal. The susceptibility varied with the individual and treatment should be directed toward increasing the resistance and nutritional power of the patient, careful regulation of the diet and mode of life being essential factors. Anatomical or physiological defects might form a predisposition to the disease. The most valuable diagnostic signs were rise of temperature in the afternoon, loss of appetite and weight, weakness, dyspnea on exertion; in the absence of sufficiently marked signs to warrant a diagnosis the tuberculin test might be resorted to. Microscopical examination frequently would not show the tubercle bacilli until late in the disease, and while the tuberculin test was difficult of application in private practice, it was generally reliable. In conclusion, he again urged the early diagnosis of the condition, and expressed the opinion that this, with proper supervision, would, in time, eradicate the disease.

Dr. PETER W. TOMLINSON of Wilmington said that, if tuberculosis were recognized in its incipiency, it would be well to advise the patient to pursue that life which was demanded for the betterment of his condition, and even in cases of doubt it was perhaps better to give the patient the benefit of the doubt and advise such measures. He remarked on the treatment, particularly the giving of less medicine and life in the open air, believing that more depended upon proper nourishment, fresh air, and hygienic measures than the giving of drugs.

Dr. PHILIP MARVEL of Atlantic City, N. J., referred to the necessity for more thorough primary physical examinations, repeated at short intervals, in suspected cases, in order to determine the presence or absence of the disease in its incipiency, when treatment would be of the most avail. In regard to tuberculin, notwithstanding the authorities Dr. Robin had cited as to the fact that it was not harmful, he said that there was a feeling against its use.

Dr. Robin, in closing, stated that he had gone carefully over the literature of the subject, and that he had yet to find a single adverse criticism of the use of tuberculin. He referred to its use at the Johns Hopkins Hospital and other institutions, and considered it no more harmful than any other powerful drug, and that no more harm would come from its use for diagnostic purposes than from the diagnostic use of quinine in malaria, or iodide of potassium in syphilis. He believed, however, that the matter should be carefully explained to the patient and the possibility of danger revealed to him, and when this was done he thought they would as willingly take the risk as they would that from an anesthetic or an exploratory laparotomy.

Some Remarks on Gastric Ulcer.—Dr. H. A. CLEAVER of Wilmington stated that there were few diseases of the gastric tract that exceeded in importance gastric ulcer. Social history, occupation, climate, or nationality appeared to have but little influence, although there did seem to be a slight predisposing influence among workers in glass, metal, and porcelain. The pyloric region was thought to be the most susceptible to this condition, and among the predisposing factors were mentioned embolism, thrombosis, venous stasis, interstitial hemorrhage, ecchymosis of the gastric mucosa, etc. He discussed as causative factors, the infectious diseases, such as typhoid fever, puerperal fever, etc., and also the theory of its causation by self-digestion, in consequence of lessened resistance in the walls of the stomach, or increase in the digestive activity of the gastric juice. The differential diagnosis between gastric ulcer and carcinoma, erosion, duodenal ulcer, hysteria, gallstone colic, etc., was discussed in detail. He referred to the various kinds of medical treatment that had been recommended and contrasted them with the operative procedures of pyloroplasty and gastroenterostomy.

The Necessity for Careful and Accurate Diagnosis.—Dr. E. S. DWIGHT of Smyrna deprecated the practice of jumping at conclusions, or the frequent diagnosis of a disease which happens to be the practitioner's particular hobby. Vague terms should not be employed, but the physician after a thorough examination should decide definitely upon the conditions present. Uranalysis and examination of the vagina and rectum should, whenever necessary, be resorted to, and he believed that they were very valuable aids in many cases.

Anesthesia; with Report of Five Hundred Cases.—Dr. ARNOLD L. SPRINGER of Wilmington read this paper, in which he said that ether was used in 88 per cent. of the cases and chloroform in the remaining 12 per cent.; 2 per cent. of the former being started with chloroform. The average amount of ether administered was 2½ ounces; the average time under ether was fifteen minutes; vomiting occurred in 25 per cent. of the cases. He believed that the vomiting was due to the direct action of the ether on the stomach, as it did not occur when the anesthesia was produced by chloroform. Oxygen was necessary in 4 per cent. of the cases, and the return to consciousness was more rapid in these cases than when no oxygen was employed. He believed that the use of oxygen with any anesthetic eliminated a large percentage of the danger. In 75 per cent. of the cases the anesthesia was for major operations; no patient died from the effects of the anesthetic, and in most of the fatal cases the patients were *in extremis* when they were placed on the table. Urinary examination was made both before and after the anesthesia. Chloroform, he stated, was more dangerous than ether, especially in the hands of the inexperienced. In all cases there should be a thorough examination of the heart, lungs, and kidneys prior to operation, and in cases of threatened death artificial respiration should be resorted to.

Dr. A. ROBIN of Wilmington remarked that in looking over the reports of the State Board of Health he noticed that in a large number of death certificates the cause of death was put down as anemia, cyanosis, etc. He called attention to the fact that these were merely symptoms and not distinct conditions. Another frequent cause given was catarrh, without telling what organ was affected. This, he said, could indicate but one thing—carelessness in making the preliminary examination and diagnosis. In regard to ulcers of the stomach, he felt that the best way to diagnose this condition and to differentiate between it and gastric

carcinoma was to give the patient a test meal, consisting of a shredded wheat biscuit and a glass of water. At the end of an hour he gave a solution of bicarbonate of sodium of some standard strength, and then by listening with the stethoscope or phonendoscope, while the patient was swallowing and noting the ebullition which occurred, and the length of time it continued, one could determine approximately the amount of hydrochloric acid present.

Resolutions deprecating the fact that the newspapers permitted the advertisement of irregular physicians and quack remedies were presented, and it was decided that the Secretary should communicate with the various newspapers, calling their attention to the improper publications and requesting their discontinuance.

Dr. Emery Marvel of Atlantic City, N. J., referred to the action of the New Jersey State Medical Society in regard to the use of nostrums, and felt that the action of the lay papers, particularly *Collier's Weekly* and the *Ladies' Home Journal*, in exposing these remedies, had been productive of good results. He recommended that the Delaware State Medical Society express an official opinion in regard to this matter. He also referred to the endeavor of the New Jersey State Medical Society to increase the fees for life insurance examinations, and stated that the subject of contract practice had been taken up and condemned by this society.

The society passed resolutions endorsing the bill to be presented to the coming session of the Legislature, increasing the requirements for a license to practise medicine, and also the work of the Delaware Tuberculosis Society.

Officers.—The following officers were elected: *President*, Dr. John W. Clifton of Smyrna; *First Vice-President*, Dr. Frank L. Springer of Newport; *Second Vice-President*, Dr. Luther S. Conwell of Camden; *Secretary*, Dr. George W. K. Forrest of Wilmington; *Treasurer*, Dr. William G. Winner of Wilmington.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held November 2, 1906.

Dr. Samuel Lloyd in the Chair.

Primary Tumor of the Trachea. Extirpation.—Dr. Elsberg presented a patient ten years of age, upon whom he had operated on May 30, 1906, and removed a fibroma of the fourth and fifth rings of the trachea by splitting the trachea. The patient was a little girl who had had increasing difficulty in breathing for three months. When she was admitted to the hospital she was examined by Dr. E. Mayer, who reported that the patient had a broadly adherent tumor springing from the posterior wall of the trachea and about the size of a small cherry. The tumor was too low down to be removed by endotracheal operation. Dr. Elsberg, therefore, made a longtitudinal incision into the trachea, found that the tumor sprang from the fourth and fifth tracheal rings, and extirpated the growth with the knife and thoroughly cauterized the raw surface left with the actual cautery. The greater part of the tracheal wound was closed by sutures and a tracheotomy tube inserted. The patient made a very satisfactory recovery. The pathologist reported that the tumor was a fibroma. While primary tumors of the larynx were very frequent, primary growths of the trachea were rare. Theissen has recently collected 135 cases, of which 89 were benign and 46 malignant. There were only 24 cases of primary fibroma of the trachea on record, and this made 25. A second operation had to be done on this patient two months later on account of a granulation tumor—due to the tracheotomy tube—which caused some tracheal obstruction. After removal of the granulations, recovery was complete. Dr. Elsberg said that in tumors or obstruction of the larynx or trachea it was very important to have everything in readiness for tracheotomy before the anesthesia was begun, as there was often sudden collapse of the trachea walls and stoppage of breathing. In this case the patient suddenly stopped breathing soon after the anesthesia had been begun, and only the fact that the operator was ready for just such an emergency and did an immediate tracheotomy, prevented death from asphyxia.

Dr. Emil Mayer discussed this case.

Result After Krogius' Operation for Congenital Dislocation of the Patella.—Dr. Elsberg presented a patient upon whom he had performed Krogius' operation for congenital outward dislocation of the patella, with a very satisfactory result. The patient was a boy of fourteen who had an inveterate outward dislocation of the patella which interfered with his walking. When he flexed his leg at the knee it was impossible—by manual force—to prevent the patella from slipping outward almost into the popliteal space. The patient had been presented at a previous meeting of the section by Dr. Goodman. Dr. Elsberg described the various operative procedures that had been tried for this condition. The muscles of the inner aspect of the thigh had been shortened, the muscles of the outer aspect had been lengthened, attempts had been made to keep the patella in place in cases of this kind by chiseling out a depression in the anterior surface of the femur; the patella had been sewed to the periosteum of the lower end of the femur. These and other operations had been tried on these patients, but the results had not been satisfactory. Krogius of Helsingfors, a few years ago, described a method which in his own hands and in the hands of others had yielded very good results. In the case here presented the result obtained was also a very good one. The operation consisted in the raising of a fascia and muscle flap from the inner aspect of the thigh, slipping it over the patella, and sewing it into an incision made in the fascia and muscles on the outer aspect of the thigh. The rent in the fascia and muscles on the inner aspect left by the raising of the flap was then closed by sutures. By this procedure the relaxed structures on the inner side of the patella were shortened, the shortened structures on the outer side were lengthened, and the flap aided in the prevention of the outward slipping of the patella. The operation was a difficult one, requiring a prolonged dissection. Complete aseptic healing was requisite for a successful result. In the patient presented the movements at the knee were perfectly preserved; even with violent flexion the patella remained in place on the condyles of the femur.

Case of Rupture of the Spleen.—Dr. Elsberg presented a patient three years of age who had been kicked by a horse in the abdomen a few hours before he was seen. The child complained of severe pain in the right side of the abdomen. The abdomen was everywhere tender and rigid, and there were evidences of fluid free in the abdominal cavity. The most marked tenderness was in the right hypochondrium. The patient was almost in collapse. At Mt. Sinai Hospital Dr. Elsberg did a laparotomy a few hours later and found the abdomen full of fresh blood and the spleen torn transversely. The spleen was removed and all bleeding stopped by ligatures. The abdominal wall was closed with drainage. The patient's condition was very poor during and for the first twenty-four hours after the operation, but thereafter convalescence was steady and recovery complete. The child was the youngest on record—two years when the operation was performed—in whom splenectomy for traumatic rupture had been successfully performed. In answer to a question regarding the blood changes that occurred after splenectomy, Dr. Elsberg stated that the changes in the blood had been carefully watched in his case; in the beginning there was a decrease in hemoglobin, in the number of red corpuscles, and an increase in the total number of leucocytes. Within a few

weeks there was a gradual return to the normal. Those were the changes in the blood that had been observed in most patients after splenectomy.

Dr. F. Erdmann discussed these cases.

Complete Epispadias, Associated with Extrophy of the Bladder.—Dr. Carl Beck presented this case.

Case of Laryngectomy.—Dr. A. V. Moschcowitz presented a case of total extirpation of the larynx, for carcinoma. The operation was performed nineteen months ago, and thus far there was no recurrence. He wished to call attention to the fact that the entire operation, including the extirpation of the glands, was performed under local anesthesia. The patient was out of bed on the third day, and at no time was there any pulmonary involvement. He ascribed the latter in a great measure, to the use of a local anesthetic.

Dr. Emil Mayer discussed this case.

Tumors of the Larynx, with Reports of Two Laryngectomies, One Hemilaryngectomy and Three Thyrotomies.—Dr. John F. Erdmann presented this communication. In reporting these cases attention was called, not to the severity of the operation, but (1) to the anesthetic used; (2) the question of preliminary tracheotomy or not; (3) the posture and steps of the operation, and (4) the after-treatment. With regard to the anesthetic, should a preliminary tracheotomy be necessary on account of the dyspnea due to the obstruction, then cocaine or eucaine should be used and a tube introduced into the tracheotomy tube and anesthesia should be induced by vaporization or by the Junker method. In one of Dr. Erdmann's cases chloroform was a positive irritant. This condition could be overcome by spraying the mucous membrane of the trachea and larynx with a 4 per cent. or 10 per cent. solution of cocaine. Preliminary tracheotomy was not necessary in the non-obstructive cases when a complete laryngectomy was to be done; but in all thyrotomies or hemilaryngectomies it should be done as a safeguard. He did not believe in the Rose or Trendelenburg posture to overcome the dangers of an inspiration pneumonia. In complete laryngectomy the entire removal of the soft parts about the trachea and sides of the thyroid cartilage was first done, and then a blunt dissector was introduced into the cleavage between the esophagus and posterior wall of the trachea corresponding to the second and third rings. When this was accomplished the trachea was bisected and the lower end was readily pulled downward and forward by previously placed anchor sutures or volsella. Gauze was then packed into the tracheal gap and the lower end of the trachea was anchored to the skin wound in the episternal notch and the operation was then proceeded with. In the six operations recorded by him every patient was kept flat on the back with only a small sand pillow under the neck in order to give more room for exposure of the trachea, etc. The median incision was made from the episternal notch in laryngectomy to the hyoid bone. The soft parts to the isthmus of the thyroid were retracted laterally. The isthmus was bisected between two ligatures, the musculature and the thyroid cartilage were removed from the sides with blunt dissectors and scissors. Thus the cleavage be twen the oesophagus and posterior tracheal wall was carefully entered, making a clean separation at the site of the second and third rings. Then either two hooks or sutures were placed in or around the second and third rings, the trachea was bisected at the first or second or third rings and the lower portion drawn down and forward, while an assistant checked whatever oozing occurred by placing gauze in the tracheal gap. The lower end was then sutured or anchored in the lower angle of the wound, the anesthesia was continued through this portion either through a rubber tube or the tracheal tube. The next step could be done deliberately as all danger of inspiration of blood should be passed. The cricoid cartilage and the first ring of the trachea, if they were left, were seized and pulled upward and a close cleavage dissection was made between the pharyngeal and posterior laryngeal walls. Should the laryngopharyngeal structures be invaded they must be sacrificed. Excision was then done, either subepiglottic or entire. Any tears or intentional gaps in the pharynx were to be sutured. The musculature was brought together and finally the skin, with a small rubber drain, was sutured down to and behind the temporary tracheal implantation. This implantation was made permanent by suturing to the skin. In suturing the trachea to the skin care should be taken not to suture too high, as this would induce tugging of the suture and prevent complete lung expansion, thereby making an immediate operative dyspnea. In hemilaryngectomies and thyrotomies the preliminary tracheotomy gave one a great sense of comfort and allowed a careful and deliberate removal of all diseased areas. The trachea wound was packed above the site of the tube with gauze to prevent inspiration of blood. After exposure of the larynx, in doing these two operations, a fine septum saw should be introduced into the thyroid membrane and a direct median separation with the saw was readily made. The separate halves were then inspected. Should the removal of the cartilage and soft parts be decided upon, the musculature, etc., was removed, excision was begun below and upwards as in laryngectomy, and the soft parts were sutured in the median line. In case thyrotomy was necessary the soft parts invaded were removed down to the cartilage, oozing being checked by gauze or adrenalin. The thyroid halves were then sutured together by taking the soft parts in immediate contact, then a second row of sutures was inserted, and finally the skin was united. The tracheotomy tube was left in for twenty-four hours or several days, depending upon the hemorrhagic oozing and discharge. All these cases should be placed in the head-dependent posture for from twenty-four to forty-eight hours. Fluids and food should be administered by rectum for forty-eight hours at least; then water should be given by the mouth as a trial for leakage. After the fourth day, if no water leakage existed, milk might be given. Solids might be given after the union of the deper structures was assured. Constant attention by a special trained nurse, day and night, was indispensable. Constant mouth cleanliness and the same for the tube must be attended to. The patient should be allowed to sit up as soon as the secretions would allow, about twenty-four to seventy-two hours after the operation.

Drs. Mayer, Berg, and Mosely discussed this paper.

A Plea for Exploratory Incision in Suspected Depressed Fracture of the Skull.—Dr. Joseph Wilner read this paper. He said that out of 62,864 fractures collected from various statistics 1,139, or 1.8 per cent., were fractures of the skull. Sixty per cent. of fractures of the skull occurred between the ages of twenty and forty. They were nine times as frequent in men as in women. In 50 per cent. of the cases a fall was the cause, in 35 per cent. a blow, in 9 per cent. a runover accident. Fractures of the base and vault occurred with about equal frequency. Fractures of the vault occurred in the frontal bone in 44 per cent., in parietal bone 40 per cent., in the temporal bone 14 per cent., and in the occipital bone 2 per cent. of all cases. The classical signs of fractures, crepitation, and false point of motion could not be had in the majority of the cases of fracture of the skull. The cases in which these signs were present were not the most dangerous, because in such cases we were all agreed that operation was needed. But it was in the doubtful cases that the greatest danger lay. Or there might be signs and symptoms indicative of fracture during the twenty-four hours following the injury, such as unconsciousness, irregularity of the pupils, vomiting, headache, rise of temperature; and after twenty-four or forty-eight hours all these symptoms would disappear, and yet we had to deal with a depressed fracture of the vault. Unfortunately the focal nervous symptoms due to head

injury, in many cases did not develop until long after the trauma. Another unfortunate fact was that in practice no sharp line of distinction between concussion of the brain and compression of the brain could be drawn as in theory. It had been found by experience that one must not expect to get symptoms of brain compression or even of brain irritation in many of these cases. There might be a depressed fracture of sufficient severity to cause epilepsy in later years and which shortly after the injury might not show a single symptom due to depression. Errors in diagnosis might arise in the presence of a flat hematoma with hard edges. In the center of such a hematoma one might feel a depressed area, and then one must consider whether the depression existed only in the soft parts or also in the skull. Sometimes the edges of the hematoma felt like a ridge of bone, thus simulating a fracture. By a careful comparison of the two sides of the skull one could sometimes arrive at a correct diagnosis. The dangers of a depressed fracture of the skull were primary and secondary. Among the primary dangers might be mentioned injuries to the dura and brain, resulting in brain abscess or meningitis. Further the necrosis of the fracture and depressed pieces of bone might result in extradural abscess. Such an abscess might form, however, even though there were no fracture of the skull. The principal secondary dangers of a depressed fracture was epilepsy. He asked how many epileptics owed their condition to an unrecognized depressed fracture that occurred in infancy or childhood; this was hard to say. There were various ways in which changes might take place at the site of a depressed fracture which would produce cerebral irritation with resulting epilepsy. One should not lose sight of the fact that the brain was pulsating continuously, and that with each pulsation the dura impinged against the depressed portion of the bone. There was thus a constant irritation at the site of the fracture. In consequence of this irritation an osteophytic growth took place; this was a slow process, to be followed ultimately by epilepsy. Dr. Wiener believed that the dangers of an exploratory incision were generally overestimated, and the dangers of a depressed fracture underestimated. To show the dangers of operation, even in complicated cases of fractures of the vault, were very small, he said that Burkhard of Nurnberg reported out of 43 fractures without apparent complications of the contents of the skull, operative recoveries of 42 or a mortality of 2 per cent. Wagner reported 83 complicated fractures submitted to operation soon after the injury, with only two deaths, a mortality of 2.5 per cent. By operation one tried to accomplish three things, viz., (1) to transform an unfavorable relation of the fractured fragments into a favorable one, *i.e.* elevate the depressed bone and remove loose pieces; (2) to repair the injury to the dura; (3) to prevent infection.

Specimen of Multiple Fibrosarcoma of the Tongue.—Dr. Frederick Holme Wiggin presented this specimen, which he had removed from an unmarried female, aged twenty-three, of Irish descent, a domestic, who came under his care during November, 1905, complaining of an enlargement of the back of her tongue which was causing her much discomfort, as, on account of its size, it made speaking, eating, and sleeping difficult. On examination the girl appeared to be well nourished, but anemic, and rather dull mentally. She gave a negative family as well as a personal history up to about seven years previously, when she stated that she had just noticed a small growth projecting from the surface, at the back of the tongue, round at the bottom, and somewhat pointed at the top. This tumor was shown to a physician, who pulled it off, and treated the resulting sore for a time, and then, as the growth began to reappear, left it alone. The patient stated that it grew quite rapidly for a time, and then more slowly, but that of late the tumor had been enlarging quite rapidly. She also said that she had had no pain, other than that caused by the mechanical difficulty encountered in speaking, eating, and sleeping, especially the latter, as for some time past she had been obliged to sleep in a sitting posture. Examination of the patient's heart, lungs, and abdomen failed to reveal anything of an abnormal character. When, however, the mouth cavity was looked into a tumor which nearly occluded the pharynx was found, projecting from the surface of the tongue at the site of the foramen cecum, rather more prominent to the left of the median line than elsewhere, and about two and one-half inches by one inch in size. The growth was painless to the touch, but felt elastic almost to the point of fluctuation. The mucous membrane covering the growth was intact and normal in appearance. The removal of the neoplasm was advised and effected on November 24, 1905, by the speaker, by means of a longitudinal incision one and a half inches long, made through the mucous membrane and muscular tissue covering the most prominent position of the tumor to the left of the median line. The tissues were easily reflected from the tumor, which was found to be encapsulated and readily shelled out of its bed. It was about one and a half inches in diameter, and when the growth was cut into it was found to consist of soft, fatty-looking tissue. The convalescence proved uneventful, and the patient improved very much in general health and in appearance, being now able to sleep in the prone position, to swallow with comparative comfort, but her ability to speak distinctly did not improve materially. The tumor was sent for microscopical examination, to five eminent pathologists, with the result that three gave opinions favoring fibroma, and two fibrosarcoma. While the girl's health was much improved, the enlargement on the right side of the tongue previously mentioned failed to diminish in size, as it was hoped it would do. By February 1 it had perceptibly increased in size; therefore, about the 15th a second operation was undertaken, the incision this time, however, being made over the right side of the tongue. When the mucous membrane and overlying muscular tissue had been divided and dissected back for a short distance nine separate encapsulated tumors of various sizes were easily shelled out, there being but little hemorrhage, which was readily controlled by the sutures necessary to close the wound. The convalescence was uneventful. The wound healed primarily. The same differences of opinion were expressed by the pathologists, who examined the tumors removed at this operation, as in the first instance. Early in March, about three weeks after the performance of the last operation, a growth was noticed, making its appearance in the scar tissue on the right side of the tongue, which grew rapidly, measuring, when it was removed on April 12, 2 by 1 inches in size. This growth was not encapsulated as the other tumors previously removed had been, but was intimately connected with the tongue tissue, and a wide cut was made around it. When this tumor was submitted to the pathologists three were in favor of fibrosarcoma, one was in doubt, and one retained his original view as to the fibrous character of the neoplasm. April 19, one week after the third operation, a recurrence in the line of incision was discovered, which grew much more rapidly than the former one had, threatening, at the rate of progress it was making, to fill up soon the pharynx. Under trypsin injections and pancreatic extract internally, the tumor first ceased to grow and then diminished in size, until it nearly disappeared June 15. It remained quiescent till August 15. Up to September 1, when the patient was lost to observation, it seemed to have increased a little in size.

SECTION ON PEDIATRICS.

Stated Meeting, Held November 8, 1906.

Dr. Matthias Nicoll, Jr., in the Chair.

Stricture of the Esophagus.—Dr. Matthias Nicoll, Jr., presented a boy, 11 years old. Six years ago he swallowed

a mouthful of lye. From this time he had more or less trouble with his stomach, swallowing only liquid and semi-solid food. He was first seen by Dr. Nicoll at Bellevue Clinic, when a plug of meat became lodged in his esophagus. This was removed by inverting the boy. The child presented a rather unusual sign; when swallowing a glass of water, with the phonendoscope one could hear the water as it squirted into the distended stomach. There was no doubt but that there was some strictural change in the esophagus, with more or less constant spasm. He had not been able to pass a bougie. The patient complained of no pain on swallowing.

Dr. J. Finley Bell of Englewood reported the case of a boy who swallowed some lye when two years of age. There resulted a stricture of the esophagus, with considerable dilatation above the stricture. Dr. Sands sent to Paris and obtained some special instruments with which to dilate the stricture. This was successfully done, and with permanent results. The patient was now a practising attorney-at-law in Pennsylvania.

Dr. L. E. La Fetra had seen two or three such cases at the New York Hospital, and each child was able to swallow well, only it was necessary from time to time to pass graded bougies. The webbed bougies passed readily enough and did no harm.

A Case of Atresia Ani Adnata.—Dr. Sara Welt-Kakels reported such a condition occurring in a child of three years. There was a fistula which opened into the vestibulum. The child felt no discomfort from this deformity. There was no similar malformation in the family. The fistula readily admitted a soft rubber catheter No. 9. The evacuations were normal and periodical. Where the anus should have been was a slight depression. An operation would be done, consisting of separating the gut from the vestibule and attaching it where it should be normally. The outlook for a good repair was very encouraging. Anderson's statistics had shown this condition to occur once in 15,000 children.

A Case of Hodgkin's Disease.—Dr. Henry Heiman presented a boy of 11 years. The family history was negative. There was no tuberculosis in the family. The patient was a full-term baby, breast-fed for one year. He never had malaria. The present illness began when he was two years old with a gradually increasing weakness and pallor. Swelling of the cervical glands was noticed about one and a half years ago, when intermittent fever and sweats appeared. There was no cough or expectoration. The appetite was poor and he had occasional attacks of diarrhea. There were no hemorrhages from mucous membranes and the fundus was normal. The physical condition was poor; he was about twenty pounds below the normal weight. The mucous membranes and skin were pale, and there was considerable enlargement of the lymph nodes. The cervical, axillary, and inguinal glands were the size of peas. The heart's action was rapid and irregular. There was a systolic murmur at the apex and at both basic orifices, the former being transmitted to the axilla. The abdomen was not distended and there was no ascites. The spleen was enlarged, and was felt three fingers below the free border, and was quite firm in consistency. The liver was felt three fingers below the free border. Hemoglobin was 42 per cent., red cells 3,200,000, white cells 6,600. No plasmodia were found. The differential diagnosis of white cells (160 cells) showed polymorphonuclears 78.7 per cent., large lymphocytes 13 per cent., small lymphocytes 6.9 per cent., mononuclears 0.6 per cent. The result of the blood findings justified him in making a diagnosis of Hodgkin's disease, a condition that was very rare in children under 10 years of age. It was often associated with syphilis or tuberculosis and the prognosis was generally unfavorable. The treatment was practically limited to arsenic. Many observers had reported favorable results from the use of the *x*-rays.

Dr. Louis Fischer said that the symptoms presented might be caused by some latent lesion in the lungs. Pulmonary conditions should be carefully excluded before making a diagnosis of Hodgkin's disease. In one of his cases there was a marked leucocytosis and a reduction in the hemoglobin percentage and a diagnosis of Hodgkin's disease was made by two good men. Three months later the child developed a cough, and there was a breaking down in the lungs, followed by a retropharyngeal abscess, caries of the cervical vertebræ, and the symptoms of tuberculosis.

Dr. L. E. La Fetra asked if tuberculin had been used. He referred to a case seen by him in which Dr. Jacobi had ordered the use of arsenic in large doses and with wonderful results. The child had a swelling almost the size of a large grape fruit; this came down under the use of Fowler's solution, the dose being increased to 100 minims a day.

Dr. Henry Heiman said that it had been impossible to administer tuberculin because of the constant temperature, which varied from 101° to 103°.

Whooping Cough and Its Treatment by an Improved Abdominal Belt.—Dr. Theron W. Kilmer said that since writing his first paper three years ago upon the treatment of pertussis by means of a slightly constricting elastic abdominal belt, about 95 per cent. of the cases had been positively benefited, and this was especially true with regard to the cessation of the vomiting. The first belt was composed of a long strip of silk elastic webbing placed over a stockinette band. The new belt was made of linen with a strip of elastic webbing of silk two inches wide, inserted on either side. This gave the belt elasticity, yet did not add materially to its weight. It laced in the back, and was worn over the undershirt or band. The width for infants should be about four to five inches, and for older children from five to eight inches. The length of the belt should be such that when complete it should measure three inches less than the circumference of the abdomen at the navel. The degree of constriction should be determined in each individual case; usually a slight degree of constriction was sufficient to produce a moderation of the cough and a complete cessation of the vomiting. If after applying the belt the symptoms do not abate, tighten it slightly. In dispensary cases and where parents could not afford the belt, he used ordinary muslin binder with satisfactory results.

Dr. Matthias Nicoll, Jr., had been favorably impressed with the belt; it seemed to lessen the severity of the paroxysms and diminished the vomiting.

Dr. Louis Curtis Ager said that a modification of the belt had been used at the clinic on Long Island with marked cessation of the vomiting in some cases. He thought the effect of the belt might to a certain extent be mental. One or two children with defective mentality were made worse, the vomiting increasing rather than diminishing. In one case the belt had to be removed because of the severity of the paroxysms.

Dr. Hoag said he had used the belt in a large number of cases of whooping cough, and those who were not conversant with its usefulness could not comprehend the advantages to be derived from it. The number of paroxysms were unquestionably and materially diminished, and in a large number of cases the vomiting decreased from 50 per cent. to 75 per cent., and occasionally it ceased entirely.

Dr. Elisha Mather Sill made a report on 161 cases of whooping cough seen during the past year. There were twenty cases under the age of one year; thirty-five cases between the ages of one and two years; ninety-five cases between the ages of two and six years; and the remainder were over six years of age. Seventeen of the twenty cases under one year had complications. Of the thirty-five cases between the ages of one and two years fifteen had complications. Of the remaining cases twenty-seven had complications. When the belt was applied during the catarrhal

stage the patients were very much benefited; the paroxysms were reduced in number as well as their severity. The disease occurred most frequently during the months of March, May, September, and October. Usually the vomiting ceased a very short time after the application of the belt. Fresh air was insisted upon in the treatment. Out of the 161 cases there were fifty-nine complications. The old-fashioned binder was used in most instances.

Notes from the Diary of a Case of Splenomegaly.—Dr. Eli Long presented a child born after a perfectly normal labor. When fifteen months old he had a severe attack of diarrhea lasting ten days. Emaciation was extreme. The abdomen was enlarged and the spleen was palpable. He then had malaria fever, low in the morning, high in the afternoon, lasting four weeks. The liver was enlarged with the spleen. When he was three and a half years old the use of the Roentgen rays was advised, and these were given three times a week for nine months. The bowels were irrigated with saline solution twice a day with an improvement in the colitis from which he suffered. When five years old the child had jaundice and epistaxis, and six months later cyanosis appeared, especially marked on exercise. When fifteen months old the malaria plasmodia were noted. When two years old the hemoglobin was 62 per cent., the red cells 3,912,000, and the white cells 4,000. When three and a half years old no plasmodia were found and no indican. When five and a half years old there was slight reduction in the hemoglobin, as well as in the number and size of the red cells. The urine and stools were normal. The circumference at the nipple line was 20½ inches; at the ribs, 23¼ inches; at the umbilicus, 28 inches. The height was 3 feet 2½ inches; the weight was 31¼ pounds. When the child was seen by Dr. Long he was poorly nourished, and had a slight cyanosis. A dry scalp was noted, and there was an eczema behind the ears. There were no evidences of adenoids. The cervical glands were slightly enlarged. The axillary glands were not palpable, but the epitrochlear glands were, especially on the right side. The inguinal glands were slightly enlarged. The lungs were normal. The apex of the heart was displaced upwards and to the left about one-fourth of an inch outside the nipple line and one-eighth inch below. The ensiform appeared to be displaced to the right. The abdomen was very prominent. The liver was enlarged and felt soft. The spleen was hard. With regard to the cause, malaria was ruled out because on only one occasion was the plasmodium found. There was no leucocytosis, therefore no leukemia. The duration of the disease was too long to admit of its being sarcoma. Congenital syphilis gave signs referable to the teeth and bones. He did not believe the child had rachitis. The case was, in all probability, one of splenomegaly, the bone lesions being possibly due to rickets. He believed that the malaria was the cause of the hypertrophy of the spleen and liver, with the possibility of an intestinal intoxication as a factor.

The Principle of the Top Milk.—Dr. Henry Dwight Chapin read this paper. He believed that the top milk method, when its advantages became thoroughly and generally known and appreciated, would undoubtedly displace all other methods. The strong point of this method was the ease with which percentages could be varied and the mixtures made by nurse or mother. The principles on which the percentage modification by the top milk method were based were very simple, and were as follows: The fat of the milk being lighter than the serum rises to the top as cream. The proteids and sugar remained distributed throughout the milk, but were slightly less in the rich cream of the upper layers. There were from five to seven ounces of cream to a quart of milk. If this cream was all removed along with enough milk to make sixteen ounces, there would be two pints of milk, one containing all the fat of a quart of milk, and the other pint being practically fat free. It was self-evident that the percentage of fat in the pint containing all the fat of a quart or two pints of milk would be twice that of the original quart. If this was 4 per cent. there would be 8 per cent. in the top milk. If all the fat was in the one-third of a quart of milk the percentage would be three times 4 per cent. or 12 per cent. In practice all of the fat would not rise in the cream, so this mathematical ratio did not hold exactly good. Milk did not run absolutely constant in fat percentage, so a margin of error must be allowed for. But by working on a 4 per cent. basis the error would always be only a little above or below the calculated percentage. The principles involved in the use of the top milk were (1) the use of milk bottled at the dairy as soon as possible after milking; (2) the rapid cooling of the bottled milk, which retarded bacterial growth; (3) the taking of definite quantities from the upper portion of the quart of milk which should include *all* of the cream. After these steps had been followed, preparation of the food consisted in simply diluting and adding sugar.

Dr. Thomas S. Southworth said that he believed it to be a safe postulate to say that the man with the greatest experience used with the greatest success some flexible method of infant feeding; this would apply to two methods, the milk and cream mixtures, and the top milk mixtures. The latter had a distinct advantage in that they gave gravity and not centrifugal cream. Gravity cream was less manipulated than the centrifugal. The method of using top milk was applicable to city as well as to country. There were variations in the top milk method, but they were not so great.

Dr. Godfrey Roger Pisek favored the use of the glass modifier, which had been used by him with the most gratifying results.

Dr. L. E. La Fetra said that top milk feeding had many advantages in infant feeding; it was a safe method and very simple in application. This method prevailed at the Vanderbilt Clinic and with very gratifying results. Mothers were made to understand the method and carried it out with perfect satisfaction.

Dr. Elias H. Bartley said that there were but two grades of cream to be had in Brooklyn, the 20 per cent. and the 40 per cent. A difficulty to be met was the fact that one could not rely upon the same composition of the milk, even from the same dairy. The percentage might remain the same, so far as the proteids were concerned, but not so regarding the fats. Unless they had a standardized milk they could claim no accuracy.

Dr. Chapin said that he claimed for the top milk method a constant relationship between the fats and the proteids. What he offered he considered to be practical. In New York City the fat percentage was a little over 4 per cent, and this was a commercial matter, because, if the fat percentage was higher, the dealers could not afford to sell it at the price they now obtained.

Chicago Medical Society.

At a meeting held October 24, 1906, there was a symposium on "Renal Calculi." Dr. Charles L. Mix discussed the etiology and symptomatology. He said that renal calculus was not found commonly in children or in the very old. It was found between the extremes of life. While Senator maintained that renal calculi occurred largely in the poor, many surgeons believed they were more common in the well-to-do or middle classes. Heredity had some bearing. It was held by some writers that a sedentary occupation predisposed to stones. The author thought it had nothing to do with it. Renal calculi were more common in some parts of the globe than in others. For instance, they were common in India, quite common in Asia, and common in Egypt. In America, however, very little could be said with reference to the geographical distribution of renal calculi, as they were as prevalent in one part of the country

as another. Renal calculi were the products of bacterial action and infection. Neoplasms of the kidney were capable of giving rise to stones without the mediation of bacterial action. In all bacteriemic diseases it was possible for the bacteria to make their way into the kidneys and exert an unfavorable influence upon the mucous membrane of the pelvis of the kidney, giving rise to a slight amount of catarrhal exudate, which might in turn serve as the nucleus of a stone. Tuberculosis of the kidney and stone of the kidney were not infrequently concomitant affairs. He described at considerable length the symptoms of renal calculus. Dr. ALFRED C. CROFTAN discussed the medical treatment of renal calculi. Dr. MAX REICHMANN pointed out the value and importance of the *x*-ray in the diagnosis of renal calculus. Dr. ARTHUR DEAN BEVAN divided the cases for surgical treatment into three groups. First, the cases in which surgical treatment was imperative; second, those in which it was desirable, but not imperative, and, third, those in which it was not desirable. In the first group he included cases of calculous anuria. These cases were very rare. They presented themselves under two general types, the purely obstructive, and the reflex anuria types. In the purely obstructive type there was obstruction of the kidney by calculous disease, or obstruction of the ureter of long-standing on one side. Following that, the other kidney became involved, with obstruction of the remaining ureter. He had had the opportunity to study three such cases. In these no urine was excreted for a period of days. Individuals with obstructive anuria had lived as long as twenty-one days without excreting a single drop of urine. The second type of calculous anuria was reflex anuria. The clinical picture was something like this: An individual had one healthy kidney, with the ureter of the other kidney obstructed by a calculus, and as a consequence there was great intrarenal tension. The obstructed kidney did not excrete any urine. The opposite kidney might not excrete any urine, except possibly by reflex action, on account of the enormous intrarenal tension of the affected side. In calculous anuria surgical treatment was imperative, although the surgeon should wait in these cases, if possible, forty-eight hours before operating, hoping that the calculus would be passed. In the third group of imperative operations was the condition where there was an obstruction of the ureter on one side, not anuria, because the other kidney was secreting, but where from the evidence one was led to believe that there was obstruction of the ureter upon one side, and where it was further possible that if this obstruction continued the integrity of the kidney might be menaced. Here the question of time element was important. In these cases he had waited a week or longer before operating, and had been rewarded by the passage of the stone in some, and had found that even the weight of the stone had not destroyed the secreting tissue of the kidney. The subject was further discussed by Drs. JAMES B. HERRICK, ARTHUR R. ELLIOTT, VICTOR J. BACCUS, and CARL WAGNER.

Action of Roentgen Rays on Cultures of Achorion and Trichophyton.—Angelantonio Mancini has treated twelve children with Roentgen rays who were affected with *Trichophyton tonsurans* and favus, and has made cultures of the parasite in the most favorable media, and subjected these cultures to the *x*-rays, with a view to ascertain what effect the rays have on the parasite itself. He finds that the *x*-rays do not destroy or affect *Achorion schonleinii* or *Trichophyton tonsurans* when cultivated in agar, lactose, or malted agar. The macroscopic and microscopic appearances are not changed. Hence, we must believe that the rays cannot have any effect on the parasite when resident in the skin. The author believes that the depilation due to the rays has an important effect on the destruction of the parasite in the scalp. At the same time the tissues are so modified as to render them more resistant to the parasites. If the rays are applied too strong a permanent baldness is produced, but, when properly applied, the cure is easy and complete.—*Giornale Medico del Regio Esercito.*

Therapeutic Hints.

Bronchopneumonia in Children.—William A. Wood recommends in cases of bronchitis with much prostration:

℞ Spt. ammon. aromat.....3i
Syr. senegæ.....3i
Tinct. scillæ.....3ss
Syr. prun. virg.....3ii

M. S. One half to one teaspoonful every two hours. In children of eight years and upward the muriate of ammonia in small doses may be substituted for the aromatic spirit of ammonia. In case the inflammation has extended to the lung substance and bronchopneumonia is developed, the chest should be enveloped in a jacket poultice of linseed meal covered with oiled silk; and if there is high fever give as follows:

℞ Potassi citratis.....3j
Spt. ammon. arom.....gtt. xv
Spt. ether nit.....3ss
Liq. ammon. acet.....3iij
Glycerin.....3ss

M. S. One-half to one teaspoonful every two hours.
—*Wisconsin Medical Recorder.*

Acute Rheumatism.—The following are recommended by Burney Yeo:

℞ Sodii bicarb.....gr. v
Ammon. bicarb.....gr. v
Acid. salicyl.....gr. xx
Aquæ ad.....3i

M. S. Take at a dose.

℞ Salicini.....3ii
Pot. bicarb.
Sodii bicarb.....āā 3iss
M. et div. in pulv. vi.

S. One powder every three or four hours dissolved in a wineglassful of hot milk and water.

Toothache.—For pain due to pericementitis, J. P. Buckley uses:

℞ Tinct. aconiti.....3i
Chloroformi.....3iv
Menthol.....gr. xx

M. Sig.: Paint over gums.
—*Dental Review.*

Corns.—

℞ Ac. salicyl.....3iiss
Ext. cannab. ind.....gr. xv
Ac. acet. glacial.....3ss
Ol. terebinth.....3i
Cocain.....3ss
Collod. flex.....3iiiss

M. S. Apply at night.
—E. S. McKEE in *Southern Practitioner.*

Alopecia.—Sabouraud recommends the following:

℞ Ol. cadini.....3iiss
Lanolin.....3v
Acid pyrogallici
Hydrarg. oxidi flavi
Resorcin.....āā gr. xv
M. et ft. unguentum.

℞ Lanolin.
Petrolati
Ol. cadini.....āā 3iiss
Ol. betulæ.....mxv
Hydrarg. subsulph. flav.
Sulph. precipitat.....āā gr. xv
M. et ft. unguentum.

Lumbago.—

℞ Sodii salicylat.....3ss
Potassii iodidi.....3ii
Syr. sarsaparillæ comp.....3iss
Aquæ q.s.....3ii

M. S. A teaspoonful in water after meals.
—S. SOLIS COHEN.

Frost-bite.—

℞ Icthyol.
Resorcin.
Acid. tannic.....āā 3i
Aquæ.....3v

M. S. Apply locally once or twice daily.
—BOECK.

Blepharitis.—

℞ Resorcin.....0.2
Hydrarg. præcip. alb.....0.25
Lanolin.....20.0
M. ft. unguentum.

S. Apply to the eyelids at bedtime.
—KANTOROWICZ.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.*

ARKANSAS STATE BOARD OF MEDICAL EXAMINERS.

July 10, 1906.

ANATOMY.

1. At what time in the development of the fetus is the hair formed?
2. Give the general classification of bones.
3. Name the bones of the upper extremity.
4. Describe the diaphragm, giving origin, insertion, nerve supply, and action.
5. Name the superficial group of the muscles of the abdomen.
6. Name the openings of the heart.
7. Name the branches of the anterior tibial artery.
8. Describe the pia-mater.
9. Describe the uterus.
10. Describe the gall-bladder.

PHYSIOLOGY.

1. Name and describe the glands of the intestines and tell in which portion of the intestine each kind is situated.
2. Describe the glycogenic function of the liver and tell the destination of glycogen.
3. Give origin, distribution, and function of the fifth pair of cranial nerves.
4. (a) How is the nervous system arranged anatomically? (b) Give a short sketch of each system.
5. How many pairs of spinal nerves are there? Describe them.

CHEMISTRY.

1. What is albumin?
2. In what form in nature do we find albumin in its purest form?
3. In what case of poisoning do we use albumin as an antidote?
4. Name a metallic poison for which albumin is especially recommended.
5. What is meant by toxicology?
6. What causes the decay of animal or vegetable matter when deprived of life?
7. What is meant by ptomain poison?
8. What is the origin of ptomain poison, or, in other words, how and from what are ptomains derived?
9. When the atmosphere we live in becomes charged with an excess of carbonic acid, how is it purified and made fit for the support of animal life?

MATERIA MEDICA AND THERAPEUTICS.

1. What is an alkaloid, a tincture, a fluid extract?
2. Name four different classes of medicine, with an example of each class. Give dose of example.
3. What drugs would you use hypodermatically to meet the following requirements? (a) To stimulate the heart's action; (b) to produce emesis; (c) to control hemorrhage.
4. What is the strength of normal salt solution? Give indications for its use and mode of administration.
5. Give principal alkaloid of belladonna and indications for its use; also dose.
6. Name the three (3) most used preparations of opium, and how much of each contains one grain of opium.
7. Give hypodermatic dose of the following: Sulphate of strychnine, sulphate of atropine, sulphate of morphine, apomorphine hydrochlorate, nitroglycerin, and pilocarpine hydrochlorate.
8. Write a complete prescription for a diuretic containing not less than three ingredients.
9. How are the cathartic effects produced by salines?
10. How is nitrite of amyl used, and for what purpose?

*It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the student with the general character of these examinations and to inspire him with confidence in the result of his trial.

PRACTICE.

1. Differentiate between acute alcoholism and apoplexy.
2. Give etiology, physical signs, and treatment of pericarditis.
3. Give physical signs of acute lobar pneumonia.
4. Give etiology, diagnosis, and treatment of biliary colic.
5. What are the two common complications of typhoid fever during the second or third week? and give treatment.
6. Describe a case of acute catarrhal dysentery and give treatment.
7. Give etiology, diagnosis, and treatment of gonorrhea.
8. Give diagnosis and treatment of acute articular rheumatism.
9. Give etiology, morbid anatomy, period of measles incubation, common complications and their treatment.
10. Describe three stages of malarial paroxysm and give treatment in each stage.

SURGERY.

1. Describe symptoms and operation for gallstones.
2. Through what would you pass, in the open method of operating for hydrocele?
3. What are the contraindications for hemorrhoidal operation?
4. How would you differentiate between gallstones, gastric ulcer, and appendicitis?
5. Give surgical treatment for Bright's disease.

OBSTETRICS.

1. Describe the fallopian tubes.
2. Describe the placenta and give its functions.
3. Give differential diagnosis of pregnancy from ovarian cystoma.
4. Give treatment for threatened abortion.
5. Write prescription for vaginitis.
6. Give treatment for placenta previa.
7. What are the indications for vaginal tamponing?
8. Give method of performing cephalic version.
9. Give treatment of uterine inertia.
10. Give management of normal labor.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

ARKANSAS STATE BOARD OF MEDICAL EXAMINERS.

July 10, 1906.

ANATOMY.

1. Hair begins to develop at about the third month of fetal life.

PHYSIOLOGY.

1. Lieberkühn's glands are found throughout the small and large intestine: Brunner's glands are found in the duodenum: the solitary glands are found throughout the entire intestine, but are most abundant in the lower part of the ileum and the upper part of the large intestine; Peyer's patches are found in the lower two-thirds of the small intestine, chiefly in the ileum.
2. The destination of glycogen: It is converted into sugar (dextrose), is given off to the blood, and is finally oxidized in the tissues.

CHEMISTRY.

1. Albumin is a protein substance, found in most animal tissues, and consisting of carbon, hydrogen, oxygen, nitrogen, and sulphur. It is soluble in pure water, and is coagulated by heat.
2. In the white of hen's egg.
3. and 4. In mercurial poisoning (by corrosive sublimate), also in poisoning by nitrate of silver.
5. By toxicology is meant that branch of medical science which appertains to poisons: it includes their character, origin, actions, symptoms produced, antidotes, treatment, and detection.
6. The process of slow oxidation.
7. By ptomain poison is meant the poisonous products of putrefaction of dead animal tissues and fluids.
8. Ptomains are derived from dead animal matter.
9. By the action of plants: the chlorophyl of which, under the influence of sunlight, decomposes the CO_2 into C and O_2. The plants retain the carbon in organic combination, and return the oxygen to the air.

MATERIA MEDICA AND THERAPEUTICS.

1. An *alkaloid* is an organic, nitrogenized substance, alkaline in reaction, and capable of combining with acids

to form salts in the same way that ammonia does. A *tincture* is an alcoholic solution of a nonvolatile substance. A *fluid extract* is a permanent solution of a vegetable drug, in which one cubic centimeter of the solution represents one gram of the drug.

2. (1) Emetics, as tartar emetic, dose one to two grains; (2) diuretics, as potassium acetate, dose five to sixty grains; (3) hypnotics, as chloral hydrate, dose five to twenty grains; (4) mydriatics, as atropine sulphate, dose one one-hundred-and-twentieth to one-twentieth of a grain.

3. To stimulate the heart's action, strychnine: to produce emesis, apomorphine: to control hemorrhage, ergot.

6. Pulvis ipecacuanhæ et opii, ten grains; tinctura opii, about ten mimims; tinctura opii camphorata, about half an ounce.

8. ℞ Potassii acetatis
Potassii bitartratis
Potassii citratis..... .....āā ʒij
Aquæ destillatæ q.s.....ad ʒviij. Misce

Signa: One tablespoonful three times a day, in half a glass of water.

9. Salines cause a great increase in the amount of fluid secreted by the intestinal glands; they also hinder the reabsorption of this fluid. The result is an accumulation of fluid in the intestine, which, by distention, excites peristalsis.

SURGERY.

2. Skin, dartos, intercolumnar fascia, cremasteric fascia, infundibuliform fascia, and the parietal layer of the tunica vaginalis.

OBSTETRICS.

7. For controlling hemorrhage, either vaginal or uterine; to exert pressure; to support the uterus; as a means of applying medication locally; and for depleting inflammatory conditions.

Nebraska State Board of Health.*

May 29-31, 1906.

PHYSIOLOGY.

1. In the *embryo*, the red blood corpuscles are derived from cells in the vascular area of the mesoblast; in the *adult*, they are derived chiefly from the red marrow of bones, also from the spleen. As to their fate, they are probably broken up in the liver and spleen. In form they are circular biconcave discs. Their size is about 1-3200 of an inch in diameter. In number they are about 5,000,000 to the cubic millimeter in males, and about 4,500,000 in females. Their function is to carry oxygen from the lungs to the tissues of the body; this is accomplished by the hemoglobin, which has a great affinity for oxygen.

2. By endocardiac pressure is meant the pressure of the blood within the heart. Pressure in the arteries and capillaries is caused by the contractions of the heart, by peripheral resistance, and by the elasticity of the vessel walls. In the veins pressure is caused by the elasticity of the vessel walls, by cardiac contraction, also by contraction of the skeletal muscles in general and particularly of the muscles of inspiration, and by the continuous traction of the lungs.

3. The mechanism of the secretion is twofold. (1) By filtration, most, if not all, of the fluid is eliminated, and also inorganic salts; this depends upon blood pressure, and takes place in the glomeruli. (2) By cell activity and selection, in the cells of the convoluted tubules, the urea and principal solids are eliminated.

8. Ameboid movement is a property common to all blood leucocytes. Some of the physiological uses of the leucocytes are: (1) They serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine; (4) they help to maintain the proper proteid content of the blood plasma.

9. It is generally held now that the glandular organs, chiefly the pancreas, liver, and the ductless glands, produce a secretion, peculiar in each case to the particular gland producing it, and which is supposed to be given off to the blood or lymph, and to have some peculiar value in the general metabolism of the body. Such secretions are called internal secretions, in contradistinction to the previously known secretions, which are carried off by a duct, and are known as external secretions. Very little is definitely known of these internal secretions, but much work is being done on the subject.

*The questions were published in the issue of November 3.

10. The difference between the corpus luteum of pregnancy and that of menstruation is best shown in the following table from Dalton, which was reprinted in nearly all the text-books of ten or twenty years ago:

	Corpus Luteum of Menstruation	*Corpus Luteum of Pregnancy*
At the end of three weeks.	Three-quarters of an inch in diameter; central clot reddish; convoluted wall pale.	
One month...	Smaller; convoluted wall bright yellow; clot still reddish.	Larger; convoluted wall bright yellow; clot still reddish.
Two months..	Reduced to the condition of an insignificant cicatrix.	Seven-eighths of an inch in diameter; convoluted wall bright yellow; clot perfectly decolorized.
Six months...	Absent.	Still as large as at end of second month; clot fibrinous; convoluted wall paler
Nine months.	Absent.	One-half an inch in diameter; central clot converted into a radiating cicatrix; the external wall tolerably thick and convoluted, but without any bright yellow color.

CHEMISTRY.

1. Organic chemistry is the chemistry of the compounds of carbon. An atom is the smallest part of an element that can take part in a chemical reaction. An element is a substance which cannot, by any known means, be split up into dissimilar substances.

2. By diluting the cow's milk and adding lactose it can be made to approximate human milk.

3. To make hydrogen: $Zn+H_2SO_4=ZnSO_4+H_2$.
To make laughing gas: $(NH_4)NO_3+Heat=2H_2O+N_2O$.

4. Chemical tests for strychnine. With concentrated H_2SO_4 it forms a colorless solution; a crystal of potassium bichromate, if drawn through this solution, produces a track of color, which is in turn blue, violet, rose-colored, and yellow. For arsenic. Marsh's and Reinsch's are the two most commonly used tests. Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry, glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

5. Both fermentation and putrefaction are forms of decomposition of organic matter under certain favorable conditions. When the organic matter is composed of carbon, hydrogen, and oxygen only, the process is called fermentation; when nitrogen and sulphur are also present, putrefaction is said to occur.

6. Heller's test for albumin is performed as follows: Pour into a clean test-tube a layer of HNO_3 about half an inch deep; then with a pipette carefully float on to the surface of this acid a layer of urine, taking care that the liquids do not mix. If albumin is present a cloudy ring, with sharply defined borders, will appear at the point of junction of the two layers.

8. The average amount of solids in the urine is about 850 to 950 grains in twenty-four hours. It can be estimated as follows: Take the specific gravity of the twenty-four hours' output; multiply the two last figures of this specific gravity by the number of ounces of urine passed in the twenty-four hours; multiply this product by 1.1; this represents the total urinary solids in grains.

9. The common determinations in chemical examinations of the gastric juice are for total acidity, for free HCl, for combined HCl, for total HCl, for acid salts, for lactic and organic acids.

10. Proteids consist of carbon, hydrogen, oxygen, nitrogen, and sulphur, some also contain phosphorus, and a few iron.

SURGERY.

2. In *empyema* we find limited motion on the affected side, edema and redness in the intercostal spaces, dulness on percussion, absence of breath sounds, diminished fremitus and resonance, chills, sweats, high fever, dyspnea, and expectoration of offensive sputum; exploratory puncture brings pus, and there is a high leucocytosis. In *hemothorax* there may be dullness on percussion, possible absence of breath sounds, diminished vocal fremitus, and if the quantity of blood is large there will be the usual symptoms of hemorrhage, shock, thirst, pallor, small thready pulse, and dyspnea. In *bronchiectasis* there are large quantities of sputum brought up at intervals; it is sour or offensive, and on standing separates into two layers.

4. *Intussusception:* tenesmus, pain of sudden onset and

continuous, diarrhea, normal or subnormal temperature, weak pulse, stercoraceous vomiting, and the intestine may protrude at the rectum. *Floating kidney*: kidney may be felt, generally on right side, heavy dragging pain in abdomen, which is better on lying down, mental anxiety and sometimes hysterical symptoms, and general relief is afforded by supporting the abdominal walls. *Stricture of pylorus*: the symptoms are those of dilated stomach; the stomach gets full and distintended, and is relieved by very copious vomiting at long intervals. *Bubonocele*: tumor in the inguinal canal, with symptoms of hernia, can be reduced, and gives impulse on coughing. *Varicocele*: feels like a bag of worms, does not transmit light, is dull on percussion, elastic, soft, and gives an impulse on coughing. *Undescended testicle*: scrotum on the affected side is empty, testis is in inguinal canal or in iliac fossa just above Poupart's ligament, on pressure there is pain and the peculiar "testicular sensation."

7. The etiology of carcinoma of the breast is not definitely known. Among the theories offered are: Cohnheim's, of embryonic remains; injury or irritation, parasites or bacteria, and inherited tendencies have all been supposed to be causes, either predisposing or exciting. Further the breast is particularly liable to changes in functional activity, which may tend to formation of cancerous growth. It also follows Paget's disease (eczema) of the nipple.

9. Pain in the abdominal region, if *diffuse* may denote peritonitis or hysteria; if *localized* it may indicate various diseases or injuries, *e.g.* in the right iliac region, it denotes appendicitis; *acute* pain generally implies acute inflammation, or perforation or occlusion of a duct; *paroxysmal* pain generally means colic, either intestinal, hepatic, renal, vesical or uterine; *persistent* pain is often found in diseases of the abdominal viscera, aneurysms, and diseases of the vertebræ.

OBSTETRICS AND GYNECOLOGY.

4. *Ovarian cyst*: absence of the chief signs of pregnancy; there may be the characteristic facies; the tumor is soft, fluctuating, is more to one side, and does not show fetal signs. *Ascites*: absence of the signs of pregnancy; the abdomen is distended, but the shape varies with the position of the patient, on lying down there is bulging at the sides; the tumor fluctuates, and percussion shows dullness in the flanks, with resonance in the median line, but the dullness varies with the position of the patient. *Pregnancy*: the tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor, and the general condition of the patient's health, may also help in arriving at a diagnosis.

7. *Symptoms* of death of child *in utero*, are: cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements are absent, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time, crepitus of its cranial bones may be elicited. *Treatment*: Abortion or premature labor must be induced, and the contents of the uterus removed immediately.

PATHOLOGY.

1. Pathology is that branch of science which treats of disease; it includes the causes, nature, manifestations, structural changes, and results.

3. Phagocytosis is the faculty of certain cells (notably the mononuclear and polynuclear leucocytes) to take up and destroy bacteria.

9. *Gastritis*: is generally caused by indiscretions in diet, or by mental worry, it may occur at any time of life, and is characterized by pain in the epigastric region which generally comes on after eating; there is apt to be morning vomiting, the vomitus consisting of fluid with undigested particles of food; there is seldom hemorrhage; the stomach may be enlarged, and examination of the gastric contents shows free HCl diminished or absent. *Ulcer of stomach*: is generally caused by injury or bacteria, is most apt to occur between the ages of twenty and forty-five, after eating there is pain localized in the stomach, vomiting occurs soon after eating, hematemesis is common, there is localized tenderness over the stomach, and examination of the gastric contents shows an excess of free HCl. *Cancer of stomach* does not usually occur before forty years of age, is more common in males, the pain is localized and occur between the ages of twenty and forty-five; after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; severe anemia and cachexia are also present.

PRACTICE.

5. Hematuria may be due to (1) conditions in which the blood is affected, as in the infectious diseases, in scurvy, pernicious anemia, and purpura; (2) to traumatisms or inflammations in any part of the urinary tract; (3) to congestion of the kidneys secondary to disease of the lungs, heart, or liver. In *renal* hematuria the blood and urine are intimately mixed, tube casts are apt to be present, and there may be renal colic or pain in the lumbar region. In *vesical* hematuria the blood and urine are not so well mixed, and pure blood is apt to be passed at the end of urination.

9. The knee jerk is nearly always present in health, and denotes a healthy condition of the entire reflex arc (tendon, afferent, or sensory nerve, posterior roots and anterior horn of the spinal cord, the efferent or motor nerve, and the muscle itself). It is absent when there is a lesion which affects any part of this reflex arc; such is the case in locomotor ataxia, poliomyelitis, Landry's paralysis, neuritis, in apoplexy just after the shock, and in epilepsy following the convulsion, etc. It is exaggerated in increased irritability of the spinal cord, in organic diseases of the cerebrum, and in some incomplete lesions of the cord.

MATERIA MEDICA AND THERAPEUTICS.

6. The non-medicinal treatment of cardiac insufficiency consists in rest, as complete as possible; light, nutritious, and easily assimilable food; avoidance of all forms of excitement, and overexercise, also abstinence from alcohol and tobacco; good general hygienic conditions and avoidance of exposure and cold. Massage, medicated baths, and various forms of muscular movements have also been recommended.

Regular Board Medical Examiners, State of Georgia.*

April 3 and 4, 1906.

CHEMISTRY.

1. (1) Calomel, Hg_2Cl_2, dose one twentieth of a grain to ten grains.
(2) Chloral hydrate, CCl_3CHO+H_2O, dose twenty grains.
(3) Potassium chlorate, $KClO_3$, dose five to twenty grains.
(4) Amyl nitrite, $C_5H_{11}NO_2$, dose two to five minims (to be inhaled).
(5) Bismuth subnitrate, $BiONO_3$, dose five to thirty grains.

2. Epsom salt is magnesium sulphate, $MgSO_4$;
Glauber's salt is sodium sulphate, Na_2SO_4;
Rochelle salt is potassium sodium tartrate, $KNaC_4H_4O_6$.

3. Potassium cyanide, tartar emetic, arsenic, trioxide, potassium nitrate (saltpeter), and corrosive sublimate. The antidote for corrosive sublimate is the white of egg, or milk, followed by an emetic.

4. The nonmetallic elements found, in various combinations, in the tissues of the body are hydrogen, oxygen, fluorine, chlorine, iodine, sulphur, nitrogen, phosphorus, carbon, and silicon.

5. *Urates* are found in acid urine, have a pinkish color, dissolve on being warmed, and, microscopically, are generally amorphous, but may be crystalline. *Phosphates* occur in alkaline urine, and do not dissolve on being heated.

MATERIA MEDICA AND THERAPEUTICS.

4. Hemostatics are agents which, on being administered internally, arrest hemorrhage. Agents which act in this manner on being applied locally are called styptics. The former act by causing the vessels to contract; the latter sometimes in the same way and sometimes by promoting clot formation in the mouths of the wounded and bleeding vessels. Ergot, gallic acid, digitalis, hamamelis, and ipecac are hemostatics. As styptics may be named the actual cautery, acids, nitrate of silver, alum, collodion, and vegetable astringents.

5. ℞ Liquoris potassii arsenitis..... ♏xxx
Tincturæ nucis vomicæ..... ʒiss
Aquæ destillatæ q.s. ad..... ʒiii
Misce, et signa. Shake the bottle. Take one teaspoonful in water, three times a day, after meals.

OBSTETRICS AND DISEASES OF CHILDREN.

2. *Pregnancy*: the tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other

*The questions were published in the issue of November 17.

signs of pregnancy are present. The rate of growth of the tumor, and the general condition of the patient's health may also help in arriving at a diagnosis.

Ovarian cystoma: absence of the chief signs of pregnancy; there may be the characteristic facies, the tumor is soft, fluctuating, is more to one side, and does not show fetal signs.

Ascites: absence of the signs of pregnancy; the abdomen is distended, but the shape varies with the position of the patient; on lying down there is bulging at the sides; the tumor fluctuates, and percussion shows dulness in the flanks, with resonance in the median line, but the dulness varies with the position of the patient.

Uterine fibroid: menstruation is irregular and sometimes very profuse; absence of the signs of pregnancy; the tumor is nodular, firm, irregular in outline, and while generally placed somewhat centrally is not in the median line, and is not symmetrical; the rate of growth is irregular, being, as a rule, slow, and sometimes extending over years.

3. Braxton Hick's sign of pregnancy is the rhythmical contraction of the walls of the uterus, lasting for from thirty to sixty seconds, and occurring at irregular intervals, of from five to about twenty minutes. It is always found in pregnancy, whether the fetus is alive or dead, but it is also found in some other conditions. It may be obtained by simply grasping the uterus through the abdominal wall; this should be done gently, and without making pressure.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	January	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	January	8
Arkansas*	F. T. Murphy, Brinkley	Brinkley	January	7
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	January	1
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	12
Delaware	P.W.Tomlinson, Wilmington	Dover	Dec.	11
Dis. of Col'bia	W.C.Woodward, Washington	Washington	January	10
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago	January	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. F. Kennedy, Des Moines	Des Moines	Dec.	11
Kansas	T. E. Raines, Concordia	Topeka	February	12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Portland	March	5
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec.	12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	January	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City		
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	February	4
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	Dec.	3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	January	1
Ohio	Geo. H. Matson, Columbus	Columbus	Dec	11
Oklahoma*	J. W. Baker, Enid	Guthrie	Dec.	26
Oregon*	B. E. Miller, Portland	Portland	January	1
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,	Dec.	4
Rhode Island	G. T. Swarts, Providence	Providence	January	3
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt. Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	January	7
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Richmond	Dec.	11
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne	Dec.	5

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

California.—The Appellate Court of this State has granted a writ of mandamus directing the State Board of Medical Examiners and its individual members to issue a medical license to Dr. Arwine or to show cause why the license should not be issued. This physician claims to have a diploma from the University of the South, and also states that in 1894 he was granted a license to practise in the District of Columbia, and in 1895 in Indiana.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending November 24, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	307	158
Diphtheria	298	43
Measles	112	5
Scarlet Fever	119	7
Smallpox	2	—
Varicella	79	—
Typhoid Fever	115	20
Whooping Cough	86	4
Cerebrospinal Meningitis	9	14
Malarial Fever		
Totals	1127	251

Modifications of the Structure of the Mammary Gland Due to Suspension of Lactation.—E. Meynier has made experimental studies of the mammary glands of animals when nursing had been stopped suddenly at various periods of lactation, and gives us his conclusions as to its effect on the gland. The phenomena resulting from interruption of lactation differ in different animals and in different parts of the same gland. There are three stages in the changes that take place. In the first stage there is a tendency to resume the function and a stagnation of large quantities of milk in the gland. In the second stage the milk assumes the appearance of colostrum. In the third, atrophy goes on. At first leucocytes are infrequent and mononucleated; later the polynucleated cells predominate, and in the end small mononucleated cells are most abundant. The epithelial cells contain small fat globules. The interlobular and interstitial connective tissue increases gradually, but the glandular acini are not compressed.—*Rivista Critica di Clinica Pediatrica.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 23, 1906:

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
Illinois, Galesburg	Nov. 3–10	15	..
Indiana, South Bend	Nov. 3–10	9	..
Louisiana, New Orleans	Nov. 3–10	5	..
Montana, in three counties	Oct. 1–31	6	..
Wisconsin, in twenty-six counties	Sept. 1–30	232	..

SMALLPOX—FOREIGN.

Argentina, Buenos Ayres	Oct. 6	18	..
Austria, Galicia	Sept. 16–22	2	..
Chile, Antofagasta	Oct. 6–20	13	..
Coquimbo	Oct. 6–20	64	2
Iquique	Oct. 6–20	..	Present
Talcahuana	Oct. 6–20	..	Present
Columbia, Cartagena	Sept. 30–Oct. 20	..	Present
India, Calcutta	Oct. 6–13	..	1
Italy, General	Oct. 22–29	2	..

YELLOW FEVER.

Cuba, Cruces	Nov. 15	2	..
Habana	Nov. 15–20	7	..
Santa Clara	Nov. 17	1	..

CHOLERA—INSULAR.

Philippine Islands, Manila	Sept. 15–29	30	20
Provinces	Sept. 15–29	450	362

CHOLERA—FOREIGN.

India, Calcutta	Oct. 6–13	..	28
Madras	Oct. 13–19	..	12

PLAGUE.

Egypt, Alexandria	Oct. 12–24	4	3
Garbich Province	Oct. 24	1	..
Minich Province	Oct. 14	1	..
Port Saod	Oct. 21–24	2	1
Suez	Oct. 15–25	6	4
India, Calcutta	Oct. 6–13	..	11
Japan, Osaka	Sept. 17–Oct. 6	21	14
Mauritius	Aug. 30–Sept. 14	24	20
Peru, Lambeyeque	Oct. 6–20	2	.
Lima	Oct. 6–20	4	..
Paita	Oct. 6–20	1	..
Salaverry	Oct. 6–20	1	..
Trujillo	Oct. 6–20	7	..
Turkey, Adalia	Sept. 26–29	3	1

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TRYPSIN FOR THE CURE OF CANCER.

WITH REPORT OF THE MICROSCOPIC EXAMINATION OF A CANCEROUS TUMOR OF THE BREAST THUS TREATED.

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Much interest on the part of the medical world seems to be attached to the use of trypsin for the cure of cancer as proposed by Dr. John Beard, University Lecturer in Comparative Embryology of the University of Edinburgh.

Attracted by the logical doctrine presented by Dr. Beard, the writer as early as April last instituted a series of experiments with a view to testing this new theory. These experiments consist of the consecutive use of trypsin in a series of about thirty cases, hospital and private. They arose in connection with a series of cases I had under treatment by other measures, mainly *x*-ray, radium, and fluorescence.

Without permitting myself to express a definite opinion, which at this moment I think would be premature, it nevertheless seems to me that an amount of experience has by this time been accumulated which may be of value to others. A salient fact may be stated at the outset, and that is that the cancerous tumor itself exhibits very frequently a definite reaction to the trypsin treatment. In some instances this reaction is accompanied by great amelioration of the disease. It may also here be pointed out that a general and constitutional reaction frequently ensues. Most of the cases here presented were far advanced and practically hopeless, as well as inoperable. For this reason, benefit derived has greater weight, and would lead to the conclusion that if such cases could have been treated earlier, the results would have been more favorable. Two cases of quite extensive face cancer are cured to date, Cases 10 and 14. In Case 1 a most remarkable atrophy of an entire cancerous breast ensued. In many the progress of the disease has come to a standstill. Accepting the evidence of microscopical examination in Case 1, it is safe to assume that in a certain number of my cases degeneration and atrophic changes have been established, which at present would be recognizable only in case of operative removal.

To gain experience has been slow work, but after nine months of groping along in a problem, clear enough in its theoretical statement but beset with difficulties in its pioneering medical applications, I can but feel, in justice to Dr. Beard, that the medical profession owes it both to him and to themselves to give this method an exhaustive trial in hospitals and in the hands of specialists thoroughly equipped.

The Theory.—Dr. Beard believes that the cancer cell differs from other cells solely in the characteristic that it is a latent and aberrant germ cell unmodified as it should have been in the ordinary course of the development of the embryo. It is, thus, not a somatic cell, but one which in the life cycle of the development of the embryo, should have "degenerated" and passed out of existence. The thing that should have destroyed it, at about the sixth week of the life of the embryo, is the pancreatic juice from which trypsin is extracted. Certain of these germ cells, undestroyed by the pancreatic juice of the embryo, become located in various out-of-the-way corners of the growing human being, and later on, under favoring circumstances, propagate themselves and thus produce what we call cancer. Ergo, administer pancreatic juice hypodermically and in excess to the patient to destroy these "germ" or cancer cells, and also administer pancreatic diastase (amylopsin) independently of the proteolytic and fat-splitting ferments (trypsin and lipase).*

Preparations of Pancreatic Juice and Method of Treatment.—I have gathered most of my initial information from communications of Dr. Beard and from Mr. B. T. Fairchild. The preparations are: injectio trypsini, injectio amylopsini, lotio pancreatis, trypsin powder, holadin, lotio pancreatis, etc., etc.

The trypsin injection has been used in varying strengths and over varying periods of time, so that no very exact procedure can be given. I begin with five minims, increasing by five minims daily up to 20 minims. I was early met by a number of instances of severe reaction, but, on the whole, have found it advisable to give doses as large as recently advised by Dr. Beard, viz., 20 minims daily. In certain cases, when tolerance is fully established, more may be safely given. Dr. Beard assumes that after a certain time the cancer cells of the tumor die, and that their removal must be promoted by the use of the injectio amylopsini, a pancreatic diastase devoid of the proteolytic (trypsin) and fat-splitting (lipase) ferments. Indeed, Dr. Beard lays much stress upon the amount and the time of administration of the pure diastase in contradistinction to the trypsin in certain contingencies clearly explained by himself. Much clinical experience is yet needed to establish a dosage of these ferments alone or relatively to one another. This must be regulated by long clinical familiarity with the reac-

*The reader who would investigate this theory in detail can consult Dr. Beard's articles, namely, Embryological Aspects and Etiology of Carcinoma, *Lancet*, London, June 21, 1902; Problems of Cancer, *Lancet*, October 29, 1904; The Cancer Problem, *Lancet*, February 4, 1905; Are the Problems of Cancer Insoluble? *Medical Press and Circular*, December 20, 1905; The Action of Trypsin Upon the Living Cells of Jensen's Mouse Tumor, *British Medical Journal*, January 20, 1906; Trypsin and Amylopsin in Cancer, Medical Record, June 16, 1906. Also articles by Dr. C. W. Saleeby, The Coming Conquest of Cancer, *Harper's Weekly*, March 3, 1906, and Cancer—Can It Be Cured? *McClure's Magazine*, August, 1906.

tion of the patient and the reaction set up in the tumor itself.

These reactions in some cases are by no means minimal in character. As to the constitutional reaction, I have seen a dose of five minims produce rigor, followed by increased temperature, nausea, vomiting, pain in the back, drowsiness, high arterial tension, etc. This however, is exceptional, and tolerance is soon established. As to the local reaction, the tumor itself, when upon the surface, in some instances may be seen within six hours to become red or purple, turgid, and hot to the touch, while the patient complains of pain or of a "gnawing" sensation. In cases where reactions occur both constitutional and local symptoms subside in a few hours and the patient is ready for another treatment. No detriment to health ensues; on the contrary, in most instances, improvement of the general nutrition is noticeable, at least in cases not subject to profound and final cancer cachexia. As it is not our purpose to analyze either the theory, the practice, or the symptoms produced, but merely to present clinical results as a sort of provisional report, I will at once present some cases from which deductions may be drawn.

Cases from Private Practice.—The immediately following cases constitute instances in which trypsin has been used for a sufficient length of time to give indications as to what it may do. Cases recently put under trypsin, or those who have had but few injections, are excluded from the present report.

It will be seen, however, from a perusal of the records that, as has been said, most of them were hopeless at the time of beginning the use of trypsin.

It will be observed also that some cases suffered from rigor and fever reaction when trypsin was first begun. In the majority of cases no such reaction was observed, but when observed it must be interpreted as a favorable sign due to the absorption of the attacked cancer products.

Case I.—Miss K. E. H. July 3, 1905. Referred by Dr. Edw. W. Peet. Primary carcinoma. About one year ago noticed a small lump in the breast. The patient refused a radical operation and permitted the lump only to be removed. Within three months discovered another lump. Carcinoma determined by microscopical examination of the first tumor.

Present Condition: A massive involvement of the entire mammary gland with chains of infected lymphatics extending to the axilla and enlarged axillary glands. Advised preoperative *x*-ray for six weeks to two months and then operation. Patient firmly declined operation. The patient received 32 *x*-ray treatments extending over a period of seven weeks. The gland had reduced one-third in size, the tumor was freer, and absolutely every sign of lymphatic infection had disappeared. Again I urged operation at this favorable moment, even if again a limited one, but to no avail. Patient ceased treatment.

April 12, 1906, about eight months later, the patient reappeared. The disease now involved the entire skin over the gland and neighboring skin lymphatics. It was exceedingly hard and of a scarlet red color. Operation again advised strenuously, but refused. I then determined to begin the use of trypsin.

April 27. Injected five minims of trypsin diluted with ten minims of sterilized water into the tumor. The tissue was so hard that a strong needle could be inserted only with considerable force. The next day the breast was much redder and sorer.

This is the only time I have injected into the tumor itself. This method is not advised by Dr. Beard. In all subsequent treatments the trypsin was inserted into the thigh well beneath the skin, exercising great care to sterilize the needle. Tenderness at the site of the insertion of the needle usually ensues as well as some heat and swelling. These symptoms subside without abscess but each locality is to some extent reexcited by each new injection, though made, of course, in a new locality. Gradually the little tumefactions disappear.

May 4.—Injected five minims of trypsin into the thigh. Within six hours a severe chill developed, continuing off and on for four hours, succeeded by fever and then comparative comfort but with malaise lasting throughout the next day. Within twenty-four hours intense pain developed in the breast tumor and it was violently inflamed. It was dusky red, hot, and swollen. Within forty-eight hours the tumor showed signs of shrinkage. The injections of five minims were continued three times a week, followed each time by chill, fever, and profound feeling of weariness, which soon wore off.

An entry of May 18 adds further symptoms frequently observed in this case. The injection was given at 12 o'clock, noon; at 7 o'clock chills began and continued off and on about every fifteen minutes for about two hours. Then severe febrile reaction. No headache. Pulse slow and weak. About 10 o'clock experienced excruciating pain upon urination with frequent and intense necessity to void the urine during the entire night. She also had frequent diarrhea. The urine was yellow, like mustard water, and likewise the feces. This was due to some action of the trypsin unknown to me. The next day she "felt sick all over." Intense pain with heat, redness, and swelling developed in the tumor. It felt as "if it was all drawing up." This pain lasted all day and the breast ached all the next night.

May 20, two days later, the breast was decidedly shrunken. The nipple which had been intensely hard was soft and not so much retracted. Narrow chains of swollen lymphatic glands leading to the axilla and enlarged lymphatic glands in the axilla had disappeared.

May 26.—Patient had received about nine injections by this time, suffering after each one about as above described. Injectio amylopsini was now given, five minims, to absorb destroyed material and combat untoward symptoms, as advised by Dr. Beard. This caused intense pain in the breast for about twenty-four hours as well as pretty much the same, though less severe, symptoms as the trypsin. The trypsin was continued three times a week, increasing the dose up to ten minims. Both trypsin and amylopsin were used throughout the months of June, July, August, September, and October, and often without a reaction of chill and fever.

About October 15 the patient consented to operative interference. The cancerous breast had become drawn upward into a shrunken compact and hard mass of dusky red color but showed no signs of breaking down. The operation was performed November 3 by Dr. Wm. S. Bainbridge. Cancer nodules were found running along the lymphatic system beneath both the pectoralis major and minor and even involving the edge of the latissimus dorsi. A cancerous mass surrounded the subclavian vein, which was with difficulty dissected out. In fact cancer was disseminated over a wide and deep area of the affected side of the thorax.

This case is quoted somewhat in detail in order to point out the sort of reaction which at the worst and at the most may be expected. Of my thirty

cases treated, decided reaction of this nature has been exhibited in quite a number. Referring to these symptoms, Dr. Beard classifies them as nausea, vomiting, pain in the back, drowsiness, albuminuria, high arterial tension, edema, etc. He believes that these symptoms, which certainly are not generally present, bear some resemblance to eclampsia and are due to a like cause, namely, the products of the degenerating tumor. The signs of improvement noted in many cases are, cessation of pain, improved health and general appearance, diminution of discharge, if present, and a shrinkage and softening of the tumor mass. The dead tumor may become encapsulated and operation may be required to remove it.

Following is the report, dated November 23, 1906, made for me by Dr. H. T. Brooks, pathologist in the New York Post-graduate Medical School and Hospital, upon the tumor removed:

"Microscopic examination of the carcinoma mammæ removed from Miss K. H., showed that by far the greater portion of it was composed of extremely dense fibrous connective tissue with a very highly refractive and glistening character, strongly resembling the fibrous connective tissue change noted in breast tumors subjected to the *x*-ray. The carcinomatous (epithelial) elements were only scantily present in this tissue, and more in the form of a diffuse infiltrate than in alveolar arrangement. The cells seemed to have undergone some degeneration, as they were granular, partly distintegrated, and stained very poorly even after long action of hematoxylin. The connective tissue seemed to be encroaching upon them, as there was considerable round-celled proliferation in these areas. This character of tissue was confined chiefly to the peripheral portions of the tumor. In the central parts and at the base or attachment to the chest, the alveolar arrangement of the cells was very decided and distinct, and the connective tissue separating the alveoli was in broad, very dense, glassy, quite homogeneous bands unoccupied by epithelial cells. Here also the epithelial cells were degenerated, but much more markedly, especially in the centers of the larger alveolar nests where large areas had undergone coagulation necrosis. While such coagulation necrosis is not at all common in the central portions of carcinomata alveoli, it was so widely distributed as to be quite striking. The great density of the tissue throughout and the decided degenerative changes in the epithelial cells gave the impression that atrophy of the carcinoma elements had occurred and been followed by great contraction and condensation of the fibrous connective tissue stroma."

A remarkable feature of this case was the shrinkage of this breast into an intensely hard, compact mass and its contraction upward until upon a level of several inches above its mate. Dr. Brooks assures me that had the process outlined in his report continued the result would have been such marked condensation of the fibrous connective tissue as to have made it very difficult to determine the carcinomatous nature of the growth. In fact the tumor at the time of the operation was progressing to a point where its pathological nature would be considered simply as scar tissue. While ordinarily in such a tumor we have overgrowth, in this tumor we have atrophy of the cells and have the contracting fibrous tissue of a scar. The finality of this process would have been a carcinomatous breast (involving inclusively its skin envelope) which had entirely disappeared—which had become, in short, absolutely cured, and by a process strikingly illustrated in Dr. Brooks' report.

The above case is a remarkable one, clinically, on account of the decisive action of trypsin upon the cancer, and pathologically on account of the opportunity which the operation presented of making a microscopical examination of the actual changes produced by trypsin in cancerous tissue. If, by the judicious management of trypsin and amylopsin such changes as this can be repeated in the cancerous tumor, we shall be obliged to admit that a new era has opened in cancer treatment and a great boon offered to the cancer sufferer. It is only fair to Dr. Beard to state that the outcome here demonstrated is exactly what he predicted.

Case II.—Mr. G. B. R. Age 48. December 27, 1905. Referred for *x*-ray treatment by Dr. Louis Stimson. Beginning December 27, 1904, noticed a small hard lump growing in the upper portion of the parotid gland close to the ear. The lump increased in size and occasioned a good deal of pain. Soon afterwards another small lump appeared on the chin on the other side of the face. In May, 1905, submitted to laparotomy for "inflammation of the gall bladder." It is believed that probable malignancy existed at that time at the site of this operation. In October, 1905, he was operated on by Dr. McKechnie of Vancouver, B. C., and the parotid tumor was removed. December 4, 1905, Dr. I. Leone Adami, Professor of Pathology and Bacteriology in McGill University, reported that the tumor removed was sarcoma. Patient presented himself for treatment having a small tumor at the site of the former operation in the parotid and two painful sarcomatous nodules beneath the skin and adherent to the lower fascia, one on the abdomen and one on the back. These nodules rapidly diminished in size under *x*-ray treatment and were removed by Dr. Louis Stimson January 6, 1906. The patient left February 23, 1906, for the West, but showing pronounced signs of cachexia. He was weak, languid, and sallow.

April 14.—Patient returns for treatment. He looks ghastly, gray, and debilitated. His parotid tumor persisted and during his absence he had nine sarcomatous nodules cut out from different parts of the skin. He complains also of severe pain in his head and sleeplessness, and other symptoms from which a sarcomatous nodule in the brain is suspected. A single sarcomatous nodule exists on the dorsum of the foot. This the patient says he has retained in order to keep "tab on me."

April 16.—Began injectio trypsini 5 minims, increasing. As no *x*-ray or other treatment was used, the immediate subsequent effects were undoubtedly due to trypsin. On April 21 the tumor on the top of the foot had entirely disappeared, the scar over the parotid which was thick and turgid had flattened out, and the skin was flexible. The action on all of the cicatrices remaining after his many operations was peculiar. Within a few hours they looked swollen and angry red, and within a day or two the inflammatory action subsided and the cicatrices appeared to be perfectly normal. April 21. Trypsin 8 minims. April 22. Patient suffered to-day a severe epileptiform seizure lasting several minutes, with loss of consciousness and subsequent loss of memory for several hours. At the same time the various cicatrices upon the body were greatly inflamed. I suspect that the seizure was due to the same reaction on an intracranial tumor as had occurred in the visible scars. The trypsin was discontinued or reduced in amount for some time. New nodules now appeared on different parts of the body and again subsided under the use of trypsin, but in the meantime the patient's cerebral condition grew worse and worse. His articulation failed, he suf-

fered attacks of great pain in the head, and periods of partial collapse. Again there would be days when he appeared to be recovering and when he could find words and express himself with clearness. At the same time the headache had diminished. June 1. Consultation with Dr. C. L. Dana, who coincided with the diagnosis of sarcoma of the brain. The trypsin injections had been diminished to 2 minims and were given infrequently by reason of feeling one's way along according to symptoms. June 20. Consultation with Dr. Abraham Jacobi. Patient in a state of semistupor. The nodule on the side of the face at the site of the scar increased in size, a new nodule had appeared upon the shoulder, a nodule on the left side remained about the same, while undoubtedly the tumor in the brain was increasing in size. It would be of no value at this point to give details as to its location, etc. On June 2, after consultation with Dr. Jacobi and at his advice, I began the hypodermic use of arsenic, but with no modification in the progress of the disease. On July 4 the patient died.

While the patient's life was not saved in this case by the use of trypsin, still it is evident that a decisive action in the sarcoma was secured, that a sarcomatous nodule was caused entirely to disappear, and that other nodules were markedly reduced in size. It is deeply to be regretted that a cerebral complication developed, for otherwise the trypsin might have been pushed to much greater limits. It is obvious that while the reaction observed was undesirable within the closed cavity of the skull it would have been of less consequence in looser and freer tissue. The case teaches at least that trypsin causes reaction and diminution in disseminated sarcoma.

Patient received in all 27 trypsin injections varying from 2 minims to 10, but on an average 5. Also he received injectio amylopsini at times.

Case III.—Mrs. M. F. Age 47. May 1, 1906. January 4, 1906, laparotomy by Dr. E., who removed a large abdominal cancerous mass involving all neighboring tissues. The wound did not heal entirely and a recurrent tumor as large as the closed hand was apparent on palpation. The case was evidently hopeless. Was submitted to *x*-ray and fluorescent treatment merely to prolong her life and to ease the patient. In addition to *x*-ray the patient was given holadin 8 grains 3 times daily.

May 4. Began injections of trypsin. First injection 5 minims. Six hours later it was followed by chill and fever. The patient was treated at her home, receiving *x*-ray and 37 injections of trypsin. The tumor where presenting externally exhibited local reaction. She died August 6.

Case IV.—Mrs. J. L. B. Age 50. February 13, 1906. Presents herself with the entire breast thickened and infiltrated with carcinoma with enlarged glands in the axilla and several nodules in the skin. Loss of flesh and cachexia. Extensive retraction of the nipple and surrounding tissue. Practically the entire gland involved. Under *x*-ray and fluorescent treatment retraction diminished, the breast gland cleared up from induration, the axillary glands and skin nodules disappeared, and the disease was reduced to a single small tumor, perhaps one inch in diameter.

May 21. Trypsin was begun merely with a view of helping along, if possible, her splendid progress. Trypsin injections, together with injectio amylopsini have been continued as follows: May, three times; June 8 times; July, sixteen times; August, thirteen times; September, thirteen times; October, thirteen times, and continued in November. After the first injection of trypsin of five minims, within an hour she felt "creepy-like sensations, and almost a chill, and very miserable." Could eat no dinner, felt sick at her stomach, and weak the next day. These feelings gradually passed off, though causing a good deal of looseness of the bowels for several days. The *x*-ray also has been continued steadily with fluorescent substances. The patient has been advised that a general operation is the usual procedure; I have also advised her that a limited operation for the removal of the tumor is now, under all circumstances, desirable. Such a limited operation can undoubtedly be performed with a minimum danger of recurrence, whereas before treatment the maximum operation would undoubtedly have been followed by subsequent cancer. After the first few injections the remaining ones, even when increased up to twenty minims, were well borne. Owing to the pressure of other medical advice and the views of members of her family, I have finally advised the patient to be operated upon, in which case we shall probably find the same condition of the cancer mass as in Case I, viz., progressive atrophy.

Case V.—Mr. R. C. H. Age 54. April 18, 1906. Referred by Dr. Calvin Adams. Extensive epitheliomatous disease of the lower jaw bone and base of the tongue, already progressed to a point where no operation was possible and where the patient's death was only a question of a short time. Took large quantities of narcotics. Patient derived great comfort and experienced improvement under the use of the *x*-ray.

April 21, began trypsin, eight minims, increasing at times to twenty, and gave in all eleven injections.

June 1. The patient experienced a severe hemorrhage and ceased all treatment, the case being apparently hopeless. Patient died August 5. The advanced stage of the case and the comparatively small number of injections render it impossible to draw any deductions of value.

Case VI.—Mrs. E. M. Age 57. October 18, 1904. Referred by Dr. A. L. Macken. Extensive epithelioma of the lower eyelid with cicatrices from frequent operations. Under *x*-ray treatment for about three months patient was entirely cured, but at the end of four months four new cancerous nodules appeared upon the cheek two inches away from the original site of disease in the end of two radiating cicatrices remaining after the original operation. These tumors the patient neglected for nine months, and finally again returned for treatment. The extensive cicatrix resulting from the cure by the *x*-ray remained entirely sound and exhibited no sign of recurrence. The use of the *x*-ray was now unavailing, for each treatment set up acute inflammatory reaction, a thing frequently noticed by me when the tissue has been treated for a long time with radiation. Various glandular extracts were tried by the mouth, including the thyroids, but with no result.

October 1, 1906. Began trypsin and amylopsin, and gave eighteen injections extending over a period of six weeks. As the patient had four cancerous nodules about the size of a large pea upon the eyelid and an ulcer, she constituted a good case to observe and study. No changes whatever in the growth took place during the six weeks of treatment, and other measures were resorted to. I propose soon to try trypsin in this case in the light of further experience.

Case VII.—Mr. A. P. Age 65. April 10, 1906. Referred by Dr. William F. Fluhrer. Cancer of the bladder. Advanced case. Passed blood fre-

quently, severe pain, and pronounced cachexia. Treatment *x*-ray, fluorescin and radioactive water. April 25, commenced the use of holadin, eight-grain capsules, one three hours after meals. Improved very decisively during the next month, and was able to give up large doses of narcotics.

May 14. Began the use of injectio trypsini five minims. Patient received six injections in May and seven in June. June 27 the record reads: "Feels great muscular weakness. Experiences frequent urination, twenty or thirty times daily. No appetite. Looks worn and tired. Will omit trypsin for a while." Patient soon ceased treatment, and died in July.

Case VII.—Miss M. W. Age 61. Patient had slow-growing carcinoma of both breasts, commencing in 1892. In May, 1902, came to my office. Refused operation. Was put under *x*-ray treatment for one year, and remained almost well until September, 1904, when she again returned with an eruptive condition on the thorax which was evidently disseminated carcinoma of the skin. This condition gradually increased and involved the entire front of the thorax as well as the axillary lines. May 14, 1906, patient was in a deplorable condition. She presented the appearance of a typical *cancer en cuirasse*. Numerous nodules from the siz of a pea to the size of a large marble existed, as well as large patches where these nodules had become confluent. Cancer nodules could be found scattered almost anywhere over the body. In this case trypsin was given as a last resort. The first injection of five minims produced a slight chill and a slight fever. Trypsin treatment was continued regularly seven times in May, ten in June, eleven in July, ten in August, eight in September, seven in October, and continued in November. The injectio amylopsini was given at due intervals. The effect of the treatment was to produce a decided amelioration in the progress of the disease. A great number of cancer nodules disappeared entirely, and even confluent areas cleared up of induration and coloration and present a condition of normal skin. It would be too much to expect a cure of such a case by any known remedy, but it certainly is a fact that the patient's condition has been greatly improved.

Case IX.—Mrs. C. M. R. Age 66. October 25, 1906. Referred by letter from Dr. John Beard of Edinburgh. One year ago last April first noticed bearing down and straining and often passing a little blood at times of going to stool. Condition was thought by the family physician to resemble at that time chronic dysentery. This condition continued steadily, growing worse, up to August, when the patient consulted Dr. A. H. Laidlaw of New York. Dr. Laidlaw gave it as his opinion that she was suffering from a rectal cancer of about the size of an orange. He found that merely a small canal passed through the center of this tumor. Dr. Laidlaw's opinion was verified by Dr. Hollister of Newark, the patient's family physician. The patient, after taking cathartics for a long period, had been advised to take rectal enemata with a long tube every other day, and in this manner has kept herself fairly comfortable, but the present symptoms indicate a further closure at the point of stricture. Examination revealed precisely the conditions above outlined, namely, a large rectal tumor situated three or four inches up the rectum and a small canal running through its center. Patient lives at a distance and can make but three visits a month.

Treatment: Began trypsin injections, quickly increasing to twenty minims, and lately to thirty, giving in all thirteen injections to date of November 22. Just beginning amylopsin. Patient reports that she feels improvement in various directions. In the first place generally she feels better, in the second has a less collection of gases in the abdomen and less rumbling and general distention. Also lessened necessity for using the enemata and the ability just developing to go to stool in an ordinary manner. Certainly her general health has improved.

[illegible] *Graduate Medical School and Hospital.*—The administration of this remedy in my clinic at the hospital has been under my direction in the hands of Dr. W. Parker Worster, instructor, who has given most careful attention to every detail, and furnished the specific data for this report. Most of these cases, as has been stated, were inoperable and beyond all hope of cure by any known method. Also most of them received *x*-ray treatments, for the reason that they had been accustomed to them at the time of beginning the use of trypsin, and if the *x*-ray had been omitted it would have been difficult to secure their attendance. The *x*-ray was shortened in time and subordinated to the trypsin. These patients were seen three times a week. The irregular attendance and frequent disappearance of this class renders impossible a conclusive report in some instances except as to obvious improvement.

Case X.—Mrs. McK. Age 48. May 14, 1906. Referred to the clinic by Dr. J. N. West. Epithelioma of the nose. One year duration. Tissue involved about one inch in diameter. Disease consisted of a deep and angry looking ulcer with raised edges and had been existing for several years and incurable by numerous other measures. Received twenty-five trypsin injections, ten minims, increasing rapidly to twenty. Ceased treatment August 13, 1906; completely cured to date.

Case XI.—Mr. O'K. Age 36. April 27, 1906. Referred to clinic by Dr. Morton. Epithelioma of the nose involving the entire left side, extensive destructive areas. Thirty years standing. Disease rapidly progressing. Had had five operations for removal without any success. Began trypsin injections. Several produced chills, trembling and hot flushes, but as a rule it was well borne. The ulcer also often exhibited a local reaction of swelling and increased discharge the next day after each injection, whether of trypsin or of amylopsin. The dose was carried up to twenty minims, and the patient received in all fifty-one injections, including ten of amylopsin, up to November 9. Patient made remarkable improvement at one time, especially during the use of the amylopsin, and the disease is now progressing steadily toward a cure.

Case XII.—Mrs. O. Age 46. Referred by Dr. Thompson Sweeny. Carcinoma of the uterus, two years duration. Admitted to the hospital for operation, but pronounced inoperable. Disease involved bladder and rectum and produced incontinence of urine. Brought to the clinic in a carriage and was carried to our room owing to extreme weakness and cachexia. In this case the patient was given alternating doses of trypsin and amylopsin, twenty minims of each at each dose. At the same time she received ten minutes of *x*-ray. Patient received eighteen injections up to November 9. She made remarkable improvement in general health. In about five weeks she was well enough to walk easily to the hospital for treatment, and the incontinence of urine had nearly ceased. Her general cachexia disappeared. As to her exact present condition Dr. Sweeny reports, November 21: "Local condition not im-

proved as to size and extent of growth, parts little less indurated, bladder is fairly continent. General condition of patient greatly improved, cachexia gone, color in face again, increase of weight, appetite better. Patient was bedridden when treatment began. Patient can walk about streets at present. She could hardly have lived five months more at the time of beginning treatment."

Case XIII.—Mrs. H. Age 42. September 21, 1906. Sent to the clinic by Dr. F. A. Dorman. Carcinoma of the uterus. Had been operated upon by Dr. Boldt. Disease had existed in aggravated form for two months. Very much exsanguinated from frequent hemorrhages, debilitated and cachectic. Suffered much pain. Has received sixteen injections of trypsin, alternating with amylopsin, up to date of November 12.

In about one month exhibited very great improvement in strength and in general appearance. Could walk well and attend to her washing and ironing without fatigue, the first time in seven months.

November 22. Examined by Dr. Boldt, who reports as follows: "Mrs. H.'s condition is quite encouraging. The disease certainly has not made further progress, and the vesicovaginal fistula which occurred in consequence of a slough after my cautery operation is seemingly closed. Please do push the treatment. It is very interesting to see the results."

Case XIV.—Mr. J. S. Age 49. September 19, 1906. Two operations by Dr. S. Sherwell of Brooklyn. Epithelioma of left cheek of five years' duration. Ulceration size of the end of finger, but very deep, and surrounded by extensive induration. During last five years had had other operations with recurrence in each case. Received twenty injections up to November 12, trypsin and amylopsin alternating. After the third injection improvement set in, and the patient's disease has progressively healed up to date. No ulcer now exists and no induration remains. The resulting scar is excellent, but shows a deep depression. Cured to date.

Case XV.—Mrs. S. Age 36. June 16, 1906. Referred by Dr. Thurston Lusk. Epithelioma of face, external to the right eye. Ulceration about two and a half inches in diameter, very deep, and existing for three years. Had had a variety of treatments. Received twenty-one injections to date of September 10. No constitutional reaction. Patient obliged to discontinue treatment by reason of intercurrent illness. Not very much improved in her condition. Was excessively anemic and cachectic and took treatment very irregularly.

Case XVI.—Mr. M. S. Age 66. May 23, 1905. Referred to the clinic by Dr. Hornby of Brooklyn. Epitheliomatous ulcer about half an inch in diameter just below the left lower eyelid. No operation. Received *x*-ray treatments off and on for four months, with little benefit. Put under trypsin treatment. Received twenty-four injections and about three of amylopsin up to October 14. Patient was most irregular in attendance and received about four treatments a month on an average.

November 23. Patient almost well. Ulcer one-third of former size. Flat and even with the cheek and induration all disappeared.

Case XVII.—Mrs. R. Age 36. May 21, 1906. Referred to the clinic by Dr. Thompson Sweeny. Scirrhus of right breast, four years' duration. Refused operation, which was often advised. Had been under *x*-ray treatment for seven months. The tumor decreased under this treatment nearly two-thirds in size and had reached a stationary stage. Trypsin begun. Received but nineteen injections, owing to her irregular attendance at the clinic. November 14 patient reports that she had become pregnant and was in great distress at the possibilities of the cancerous tumor of her breast. She was referred for advice to Dr. J. N. West, who advised, with our hearty assent, the removal of the breast. Case uninstructive as regards trypsin.

Case XVIII.—Mrs. S. Age 48. September 24, 1906. Referred from skin clinic by Dr. Thurston Lusk. Epithelioma of inner canthus of left eye about half an inch in diameter. An open ulcer. No operation. Came very irregularly. Had three injections of trypsin, alternating with three of amylopsin, over a period of about one month. Ulcers almost healed when last seen.

Case XIX.—Miss M. D. Age 46. May 14, 1906. Referred to clinic by Dr. Thompson Sweeny. Carcinoma of uterus, extensively involving bladder; great edema of both legs. Inoperable. Disease complicated with nephritis. Assisted to the hospital and lifted to the table. A hopeless case, and in great agony. Received nine injections. In the course of the first week showed remarkable improvement. Dr. Sweeny reports that at the end of three weeks "the incontinence of urine ceased, the swelling of the feet and of the legs, which were enormous in size from the feet to the pelvis, became reduced at least one-half, and the skin of the legs, which had been white, tense, and glistening, began to look normal and became loose." She disappeared from clinic and died of kidney disease. The action of the trypsin in reducing the edema of nephritis in this case is worthy of note, though possibly the edema may have been due to pelvic pressure of the carcinomatous growths. Dr. Sweeny reports, November 21: "Patient's general condition undoubtedly improved during the four weeks while under treatment. From being bedridden she was able to be abroad."

Case XX.—Mr. P. B. Age 73. May 21, 1906. Referred to the clinic by Dr. Charles W. Allen. Epithelioma of right side of face in front of right ear, measuring three by four inches and deep. Eight years' duration. Case was distressing and hopeless. Had frequent hemorrhages. He had improved slowly under *x*-ray. Trypsin was begun May 21. Immediately on beginning treatment the character of the sore changed. The submaxillary glands were extensively involved, and filled up the submaxillary space on the right side. The glandular swellings disappeared almost entirely. Patient received in all fifteen injections of trypsin up to July 2, and then disappeared from clinic. His attendance was extremely irregular since he lived at a distance. When last seen his general health had improved and the ulceration was smaller, but still deep, and by no means cured. The hemorrhages had ceased. In view of the favorable effect of trypsin it is greatly to be regretted that this case could not have been more closely followed up.

Case XXI.—Mr. R. W. Age 44. June 1, 1906. Referred to the clinic by Dr. Rauth of Brooklyn. Osteosarcoma of the left ramus of the lower jaw, of three years' duration. Great enlargement of the bone, while also the submaxillary glands were so much enlarged that the contour of the neck on the affected side was on a level with the face. Angle of the mouth was drawn downward. The swelling of the glands diminished two-thirds. Up to July 13 patient received eighteen injections, ten minims of trypsin, when great improvement began to manifest itself. The tumor reduced in size. July 27 trypsin increased to twenty minims, and tumor continued progressively to diminish in size. Patient disap-

peared from the clinic and no further report at present can be given as to his condition.

Case XXII.—Mrs. B. Age 54. May 23, 1906. Referred to the clinic by Dr. Jenkins of Brooklyn. Sarcoma of right shoulder, frequent and profuse hemorrhages, pronounced incurable by several physicians. Disease involved the top of the shoulder over eight inches anteroposteriorly and five inches transversely. Began ten minims of trypsin May 23 with pronounced and satisfactory results. The profuse hemorrhages ceased entirely for a time, but later on returned in a slight degree. The patient's tumor at one time became infested with maggots, which were removed by aid of bichloride solution. Patient suffered from chills following several of the injections. Received in all eleven injections, irregularly administered. The effect upon the disease was discernible by diminution of pain and lessening of hemorrhages, but the patient died June 22.

Case XXIII.—Mr. E. Van B. Age 80. October 12, 1906. Epithelioma of right side of nose. Five years' duration. Extensive destruction of tissue, removing the entire left side of nose, producing a large and deep ulcer. Desperate case. Inoperable. From October 12 to October 24 received six injections of trypsin and amylopsin, with evident improvement, especially in his general health. Patient disappeared from clinic and no further report can be made.

Case XXIV.—Wm. T. Age 48. Referred to the clinic by Dr. Morton. May 18, 1906. Epithelioma at the end of nose, involving the entire organ up to the bridge. An open ulcer and destruction of tissue of the septum and upper lip. Three years' duration. Inoperable. Received twenty injections of trypsin up to August 20. Improvement manifested itself early, and was maintained, but the patient ceased injections at latter date. He had developed an abscess from the trypsin injections and was fearful of a further experience of that kind.

November 20. Patient returns. Diseased area no longer causes him pain and is reduced in size. Case is improving.

Case XXV.—Mrs. McK. Age 57. Referred to clinic by Dr. J. N. West. June 21, 1906. Extensive carcinoma of uterus. Six months' duration. Inoperable. Severe hemorrhages. From above date to November 19 inclusive received sixty-two injections of trypsin, alternating frequently with amylopsin. She exhibited a good deal of improvement in general health, and the lesion is so much improved that the patient is unaware of its presence. Patient examined again by Dr. West November 26, who reports that while up to within several weeks very great improvement was manifested, during the last three weeks the disease again exhibits signs of activity and the patient is not so well. The trypsin in this case should be pushed to a larger dosage, and will be.

Case XXVI.—Mr. J. C. C. Age 56. May 23, 1906. Referred by Dr. David Webster. Epithelioma of inner canthus of right eyelid and extending down upon the nose. Had received *x*-ray treatment with some improvement, also radium. Began use of trypsin May 23, and received up to September 27 twenty-five injections of trypsin, on an average of six injections monthly. But little progress was made.

Case XXVII.—Mrs. S. S. Age 38. May 21, 1906. Referred to clinic by Dr. William B. Coley. Lupus of the upper lip and cheek and nasal septum and upper maxillary bone including the hard palate. In Februrary, 1905, was operated on at Roosevelt Hospital for lupus of the cheek and lips. Following the operation the disease increased with great violence until it involved the upper maxillary bone corresponding to the four incisors and the two canine teeth running backward to a considerable distance on the hard palate. Taken together, this invasion produced a round tumor mass which caused a pronounced projection of the upper lip. Received trypsin injections, twenty minims, three times a week. At the end of the first month the tumor reduced very greatly in size, and at the end of the second month the reduction was still greater and pieces of bone from the hard palate either fell out or were picked out by the patient. About the fourth month no evidence of a tumor could be discovered. The nose and upper lip had fallen in, producing great facial deformity. At the time of present writing, about the end of the fifth month, while it cannot be said that the patient is entirely cured, for there remains a small patch of disease on the edge of the roof of the mouth, still the disappearance of the large tumor has been most remarkable. The patient can introduce the finger easily into the hole in the hard palate, upward, and it would seem as if another month would complete the cure.

Case XXVIII.—Mrs. P. Age 24. May 1, 1906. Referred to clinic by Dr. H. J. Boldt. Carcinoma of rectum. Two years' standing. No operations. Inoperable. Received twenty-four injections, twenty minims, of trypsin and amylopsin up to October 15. The pain in rectum disappeared after the first few injections, and the relief was so great that patient asked for injections in preference to any other treatment. About July 6 the patient was so much improved that her attendance became very irregular. Has continued treatment off and on up to November 18, with continued improvement in general health.

Case XXIX.—Mrs. S. Age 42. June 11, 1906. Lupus vulgaris of left eye and nose. Eyeball had been removed and entire socket was a mass of disease, extending down upon the nose. Disease existing four years. Received twenty-one injections. On September 21, 1906, ceased treatment owing to intercurrent illness. At the beginning of the trypsin injections severe reaction of an inflammatory nature appeared in the ulceration, followed by profuse discharge and sloughing. The hemorrhages soon ceased entirely, the wound took on a healthy aspect, its edges contracted and turned inward, and healthy granulations appeared. The entire ulcerated area has closed in with normal tissue to about half its original size. Patient sends word that she will return to treatment.

Comments upon Above Cases.—1. Two of them, cases 10 and 14, severe cases of face cancer, are cured to date by the use of trypsin.

2. A remarkable process of retrogression by degeneration and atrophy of a carcinomatous breast gland to final and curative obliteration has been microscopically demonstrated in Case 1.

3. In all cases signs of amelioration in the progress of the disease have been observed.

4. Cases 1, 2, 3, and 11, among others, demonstrate beyond question that trypsin may produce local reaction in a cancerous tumor indicated by swelling, heat, pain, or increased discharge.

5. Cases 1, 2, 3, 4, and 8, as well as others not especially recorded among the hospital cases, demonstrate that trypsin produces constitutional reaction characterized by rigors, fever, pain in the back, sense of weakness, drowsiness, etc., but of temporary duration.

6. Cases 20 and 21 demonstrate that enlarged

glands associated with cancer have rapidly diminished in size under the influence of trypsin.

7. It has already been pointed out that these cases were mostly absolutely hopeless at the time of beginning treatment.

8. Rigors and increased temperature following within a few hours the injection of trypsin are an encouraging sign since they indicate that the cancer has been attacked by the trypsin. The symptoms are due to the toxic action of absorbed and destroyed cancer products.

9. Trypsin has a decided effect in reducing cancer cachexia and in improving the general health.

10. The result of the trypsin treatment in many instances, as notably in cases 12, 13, and others, demonstrates that even in severe cancer of uterus involving the associated pelvic organs the disease may be brought to a halt, so to speak, even if the patients do not eventually recover.

11. The use of trypsin has caused hemorrhages to cease and has alleviated pain.

12. It is a fact that the patients frequently refer their greatest feeling of improvement to the period of time when they are taking amylopsin following trypsin. An important, as well as a difficult, feature of the treatment, therefore, is reasonably to determine the proper time to administer the diastatic ferment as well as the requisite amount, following or during the use of the trypsin. It has seemed to me that the pure diastase (injectio amylopsini) had much to do with favorable results.

13. Weighing carefully the above cases, I have come to the conclusion that trypsin, if possible, should be used in larger doses than I have yet used it in most of them. Feeling one's way, for instance, from twenty to thirty minims daily for from four to six weeks, as advised by Dr. Beard, and then resorting to amylopsin. It is only lately (November 23), that I have been able to get a microscopical report (Case 1) of the actual effect of trypsin upon a cancerous tumor. This report has lent another aspect to the work and encourages me as it will others.

14. In all fairness trypsin deserves further trial, but I reserve an opinion as to its actual therapeutic value until I can speak from a larger experience.

19 East Twenty-eighth Street.

A CASE OF BRONCHITIS; WITH REMARKS ON COUGH AND THE PERFORATED ZINC INHALER.*

By BEVERLEY ROBINSON, M.D.,

New York

On the afternoon of September 24, 1906, I was called to see a patient, male, married, dentist, 62 years old. He was seated in a chair bent over on the bed, and, as he said, able to breathe at all only in that position. If he lay down he had intense dyspnea and constant cough. Even in the position in which I found him he had marked dyspnea and constantly recurring cough. I discovered, on examination of chest, that there were a few disseminated moist râles everywhere. The air, however, even on forced inspiration, entered the lung cells very imperfectly. Examination of throat negative. The voice was not notably hoarse. The heart action was rather weak—a soft-blowing systolic murmur at the apex. The pulse showed tension—about 90 to minute. Respirations, 24. Temperature under tongue, 102° F.

*Read at a meeting of the Practitioners' Society, November 2, 1906.

Patient told me he had been suffering from a bad cold during ten days previous. He had gone to the country a few days before and sent for the doctor, who gave him codeine frequently, and steam inhalations with benzoin. Wishing to see me, and being no better, he returned to the city, having been about three hours on train. I sent for trained nurse and prescribed liq. ammon. acet. and Apenta water for following morning, as the bowels were torpid. He vomited liq. ammon. acet. and I prescribed sp. ætheris nitrosi 20 gtt. every two hours in water.

September 25.—Apenta water had not moved him, so I ordered 5 grs. mass. hydrarg. and a castor oil enema (℥ss of oil), inhal. of tr. benz. co. frequently, Hoffmann's anodyne gtt. xx occasionally, and tablets of ipecac gr. 1-10 every half hour until nauseated. Soap liniment to chest.

September 26.—Cough constant and extremely fatiguing; unable to lie, except on stomach, and only for a few moments at a time. Temperature 101° F. Consult. with Dr. Delafield, who ordered fl. extract hydrastis gtt. xx with ipecac gr. 1-10 every three hours.

September 27.—Cough and dyspnea no better. Tried tablets one every four hours of digitalin gr. 1-100, strych. nitrate gr. 1-50, nitroglyc. gr. 1-100, and atropine sulph. gr. 1-150, in view of some weakness of pulse and concentrated and small quantity of urine—oxygen. Mustard poultices to back.

September 28.—Cough and dyspnea no better. After paroxysms of cough spat up small quantity of frothy and thick mucus. Prescribed every hour or two tablets of cubebs gr. 1-10, ammon. chlorid gr. ¼, licorice gr. 1-10, and heroin gr. 1-100 (Frazer's). Continue oxygen, heart tablets as required, iodine to chest. During night patient had symptoms of heart failure. Helped very much with tincture of strophanthus in tablet form, by mouth. Hypodermic of morphine, gr. 1-8, after consultation with Dr. V. H. Norrie.

September 29.—Expectoration became purulent, cough and dyspnea about same. Prescribed mist. glycyrrhiz. co. ℥i every three hours, fluid extract of coca ♏xx every three hours.

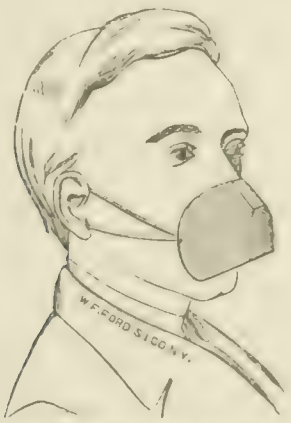
September 30 and October 1.—Abundant purulent expectoration, constant cough and dyspnea. Temperature 101° F., went to 103° F. (under tongue), evening of October 1. Sputa examined microscopically; showed numerous pus cells, no tubercle bacilli; urine, sufficient quantity, trace of albumen, good specific gravity, acid, a few hyaline casts. Blood: no malarial organisms; Widal not made; increase of leucocytes (17,500); normal number of red cells; normal amount of hemoglobin.

October 2 and 3.—Iodine to chest, stop mist, glyc-cyrrhiz co., as it nauseates slightly and gives headache; abundant purulent expectoration; cough constant; dyspnea perhaps somewhat less; can sit in upright chair with relative comfort; increase coca to ♏xxx every three hours; two minims of beechwood creosote with elixir of pepsin, properly diluted, three times daily, after food. Temperature, 99° F.; pulse, 90; respiration, 26. Allowed soft solids in great moderation, lithia water to drink, and a mixture of sulphate of soda, carbonate of lithia, and bicarbonate of potash every morning for bowels and general system. Patient is notably gouty, and has been to Carlsbad on two occasions. He is a very small meat eater, and lives principally on farinaceous food and vegetables.

October 4 and 5.—Creosote and pepsin continued; began use of perforated zinc inhaler with creosote, alcohol, and spirits of chloroform occasionally, and increasing duration gradually. After forty-eight

hours cough much better, dyspnea improved, sputa less in quantity and less purulent, patient could lie a little while on both sides, and breathe fairly well. In the early afternoon he felt much better, and came downstairs (October 5). Saw Dr. Janeway in consultation, who agreed with me that patient might go to the country with advantage the following day.

October 6.—Went to country in afternoon—three hours distant by rail; ordered to continue creosote internally and by inhalation, extract of coca and mixture with sulphate of soda. The diagnosis in this case was generalized subacute bronchitis, probable interstitial nephritis and arterial changes, with thickening, of gouty nature; heart somewhat hypertrophied and dilated with possible myocardial degeneration (patient is a man of large frame, corpulent); prognosis good, if rest is taken, and later a cure at Hot Springs of Virginia. Interest of the case for me is in the fact that, despite all rational treatment for many days (eight or nine), there was continuous cough, marked and distressing dyspnea, profuse purulent sputa, and great restlessness. After forty-eight hours of use of perforated zinc inhaler all these symptoms were much benefited, as well as pulse and heart action, and general condition. Creosote internally no doubt helped, and also coca and magnesia mixture, but the inhalations were especially useful.



The Perforated Zinc Inhaler.

It is worth while, therefore, to remember a simple instrument and simple treatment, which may notably relieve distressing cough and dyspnea, when other medication, inward and outward, are seemingly not very useful. The cough in this case, I believe, weakened heart, and thus helped to increase dyspnea, which aggravated patient's suffering.

Now that cold, blustering days have come, coughs and colds are very frequent, and to treat them pleasantly and efficiently—and, of course, safely—is no mean part of our art. Formerly I made use in very many cases of the perforated zinc inhaler, and then for several years I abandoned its use, except in occasional instances; why I cannot say, because I always found it useful and efficient in allaying cough from laryngeal and bronchial irritation, or inflammation. Within a brief period I have again taken up the use of the perforated zinc inhaler, and, feeling as I do at present, I do not believe I shall abandon its use readily. The solution employed and advised is equal parts of beechwood creosote, alcohol, and spirit of chloroform. From 5 to 15 drops of the liquid may be dropped on the sponge of the inhaler and renewed one or more times daily, as required. At first the inhaler should be worn a few moments at a time and reapplied every hour or two. Later, after a few days, a week or more, the inhaler may be worn continuously one or more hours during the day, and even night. I am also confident that in every stage of pulmonary phthisis the perforated zinc inhaler will be found valuable, not only to supplement other curative measures, and even the internal use of creosote properly given, but also because of itself it is directly curative. I regret extremely that more than one prominent authority has latterly endeavored to neutralize a judicious faith in the utility of creosote medication in pulmonary phthisis, basing judgment on the pathological conditions present. I, for one, recognize no such objections as valid. Creosote vapors unquestionably penetrate air cells unless completely blocked, and when they cannot penetrate certain diseased areas, at least they modify favorably a large part of the bronchial tract, and doubtless prevent in this way, if no other, the wider dissemination in very many instances of the tuberculous infection. To those who have a doubting mind I would here refer them to an able and convincing paper written by Dr. Austin Flint, Sr., in the *New York Medical Journal*, December 8, 1888, p. 617, entitled "Creosote in the Treatment of Phthisis Pulmonalis," in which the inhaler is described, and its utility emphasized, in ten cases of pulmonary phthisis treated by him in Bellevue Hospital. Dr. Rutson Maury was at that time Dr. Flint's house physician, and it is stated that I told Dr. Maury about inhaler and inhalant before he entered the hospital. Dr. Flint also states in the article referred to that he has "employed the method of inhalation here described, conjoined with other treatment, in private practice, with good results. In a case of irritative cough of several months' standing, with slight bronchitis and emphysema, but no signs of phthisis, which resisted ordinary treatment, three inhalations produced complete relief, and the cough had not reappeared at the end of four weeks" (p. 620).

Of course, in many instances, even of a common cold, something more is required to stop cough than the use of the zinc inhaler. A dose of Rochelle salts, a counter-irritant application to the chest, and spirits of mindererus internally, combined or not, with sweet spirits of nitre, will be helpful, especially where the patient has fever, and is, or should be, housed. If these simple remedies were used habitually in ordinary cases of colds, and coal tar derivatives abandoned, there might be, perhaps, fewer instances of pneumonia.

42 W. [illegible] SEVENTH STREET.

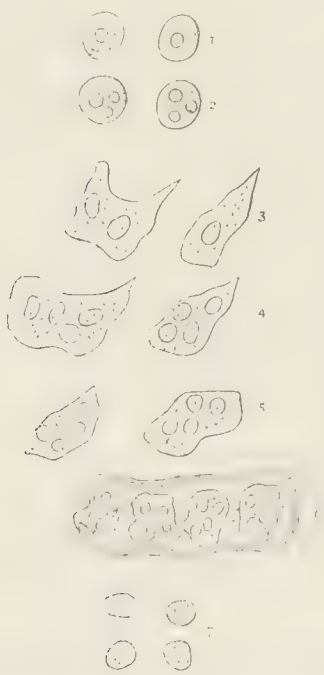
OBSERVATIONS ON THE ETIOLOGY OF CANCER.

By WILLIAM H. DIEFFENBACH, M.D.,
NEW YORK.

In spite of notable medical progress during the past decades in other directions, especially in surgery and in physical diagnosis and therapeutics, the mortality from cancer shows a progressive increase, one death in thirty being attributable to this disease, according to present statistics. Many efforts have been made, and are still being made, to clear up the mystery of cancer etiology, but the question still remains unsolved. Believing that any ray of light, even if of slight penetration, which may help illuminate this topic would be welcome, the writer desires to jot down his observations on over one hundred cases of cancer treated during the past few years at the clinics in Flower Hospital, New York, and in private practice, and draw such conclusions as seem available from accumulated data.

We are familiar with the theory of Virchow, who emphasizes local disposition due to injuries, operations, and irritations as a cause for cancer. He also speaks of hereditary transmission as a factor in this disease. Cohnheim's theory of defective embryonic development causing the formation of tumors and of misplaced epithelial cells which undergo cancerous proliferation, is taught from the rostrum as one of the plausible explanations of the etiology of this disease.

Recently Beard (Edinburgh) has promulgated a theory along similar lines. He believes that "aberrant germ-cells" are produced in what he terms the "critical period" in embryonal development, and that a tissue called trophoblast is formed from which cancer propagates. This tissue has lower vitality than normal tissue, and can be destroyed by the digestive properties of pancreatic ferments, notably trypsin. This is practically the essence of "the newly discovered cancer-cure," as described in a recent magazine article.*



Epithelia and sarcoma corpuscles (from Ziegler), 1, Renal epithelia from the convoluted tubules; 2, the same with endogenous new formations; 3, urethral epithelia; 4, the same with endogenous new formations; 5, squamous cancer epithelia; 6, cancer nest; 7, sarcoma corpuscles.

Gaylord (Buffalo) claimed three years ago to have discovered the cause of cancer in a coccidium—the *Coccidium sarcolytum*—which, when inoculated, produced similar lesions to those of the parent body from which it was derived. This discovery has been affirmed by some, denied by others, the latter claiming that the microorganism was due to incidental contamination or was a by-product of degenerative tissue change.

Doyen (Paris) has isolated the *Micrococcus neoformans*, which he claims to have found in cancer tissue, and from which he secures a serum which he employs in this disease. His methods have been investigated by the Paris Academy of Medicine, and an unfavorable report submitted on same. In the cases treated by the writer the importance of trauma as an etiological factor was again and again impressed on his mind, especially, when on close questioning, obscure or seemingly unimportant recurring irritation or trauma was elicited.

*August, 1906, McClure's.

In this connection, the following observations, noted in a large number of urological examinations, induced the writer to give this factor especial attention.

In examining the urine of pregnant women it will frequently be noted that the epithelial cells of the urinary tract, upon which pressure is exerted by the developing fetus, show what have been termed "epithelia with endogenous new formations." This same phenomenon is seen when tumors press upon the kidney or bladder, or when an hypertrophied prostate impinges upon the urethral mucous membrane. In severe inflammations of the genitourinary tract the epithelial cells found in the urine frequently have these new formations, and in certain squamous epithelia, such as from the urethra, the appearance of these formations makes the epithelium look almost identical with a carcinoma cell. These abnormal cells disappear from the urine when the period of gestation is passed, or when severe inflammatory conditions are ameliorated, showing conclusively that pressure and inflammatory stress are able to change the character of cell proliferation. This point should be borne intently in mind when considering the subsequent argument.

Let us now refer to the definition of a cell, as given in Kirke's Physiology. "A cell may be defined as a nucleated mass of protoplasm of microscopic size which possesses sufficient individuality to have a life history of its own. Each cell goes through the same cycle of changes as the whole organism, though doubtless in a much shorter time. Beginning with its origin from some preexisting cell, it grows, produces other cells, and finally dies."

What, however, occurs when the integrity of these preexisting cells is interfered with? As we have had occasion to notice in the urinary examinations, the character of the cells can be changed—changed so as to be practically identical microscopically with carcinoma cells. What occurs if through repeated trauma the trophic nerve supplying a part is interfered with and its transmission of impulses is hindered? Let us quote from Kirke's Physiology once more: "The morbid effects which division of the fifth nerve produces in the organs of special sense make it probable that in the normal state the fifth nerve exercises some special or trophic influence on the nutrition of these organs; although in part, the effect of the section of the nerve is only indirectly destructive by abolishing sensation, and therefore the natural safeguard which leads to the protection of parts from external injury. Thus, after a division, within a period varying from twenty-four hours to a week, the cornea begins to be opaque; then it grows completely white; a low destructive inflammatory process ensues in the conjunctiva, sclerotica, and interior parts of the eye, and within one or a few weeks the whole eye may be quite disorganized, and the cornea may slough or be penetrated by a large ulcer." If, as we have seen, division of a trophic nerve produces disorganization of the part supplied, what happens when these nerves, through severe single trauma or frequently repeated mild irritations or trauma, become inflamed, and peripheral and interstitial changes take place in the neurotic tissue?

May we not assume that the impulses inhibiting and controlling normal cell proliferation can be interfered with, while at the same time its nutritive supply may remain undisturbed? If this assumption is plausible (and we can see no grounds upon which to absolutely reject it), may it not be possible to produce a riotous proliferation of cells, which

slowly but surely will appear as a tumor, and eventually replace or destroy surrounding healthy tissue?

The fact that the great majority of cancer cases occur past middle life confirms these contentions. Arteriosclerosis is a common and almost inevitable change occurring in advanced life; with it coincident changes in the nerve cells take place with interference of function and conductivity. Observations of the action of the Roentgen ray show that excessive repeated dermatitis with interference with the integrity of the nerves and blood-vessels of the parts rayed is apt to develop into cancer. The death of Dr. L. A. Weigel, of Rochester, New York, is still fresh in the mind of all radiologists. This physician, an early investigator of the Roentgen ray, through constant experimentation and exposure to the ray, developed lesions on his hands and arms which were diagnosed by competent pathologists as epitheliomata. In spite of operative measures, the lesion spread and eventually destroyed the patient. The death of one of Edison's laboratory helpers and of a prominent California radiologist from excessive exposure to Roentgen rays and developing cancer of the parts exposed, abundantly confirms the case of Dr. Weigel. There are a number of radiologists who at present have small epitheliomata on their hands following chronic radiodermatitis. The excessive raying of a part with bombardment of the tissues constitutes a distinct trauma, and the cancerous changes in the cells cannot readily be explained, excepting on the theory the writer has endeavored to outline.

Epithelioma and carcinoma of the cervix and uterus proper, having old, neglected lacerations of the parts as a history, are too common to require much emphasis. Why should married women be so much more subject to cancer of the sexual organs than unmarried women, if the cause be not due to traumatic irritations of the genitalia? Medical treatment and surgical repair of such lesions cannot be too strongly urged in each and every case where such chronic irritation may exist to obviate subsequent cancer proliferation. Why should the majority of carcinomata of the stomach locate at the pylorus if this outlet were not the recipient of irritations of all sorts? Why do we so frequently note that chronic cases of cholelithiasis and cholecystitis develop into carcinoma of the gall-bladder and its adjacent organ, the liver? We have seen two cases of cancer of the pancreas complicating chronic cholelithiasis, the deduction being that the stones irritated or obstructed the pancreatic duct and set up carcinomatous change in due course. Rectal cancer can be traced to incessant irritations of these parts through persistent hemorrhoids, with accompanying irritation of the mucous membrane. The use of rough or coarse closet paper may also be a factor in the development of the lesion in this region. The statement has been frequently repeated that among aborigines cancer is unknown; this would again strengthen the array of facts recited in favor of the theory above expounded. Civilization, as at present constituted, subjects mankind to all kinds of traumatism; the nearer we get to the simple life, the less the traumatism. All trades and occupations subject people to more or less constant irritation of parts involved, and favor the irregular or riotous propagation of tissue in the injured parts.

The remarkable increase in cancer of the stomach and intestines noted during the past decade may by some be referred to the improved diagnostic ability of the attending physicians. It may, however, not be amiss to refer to one feature of civilized life which may have some bearing on this subject. The old copper vessels of our grand-sires have now generally been replaced by enameled ware for cooking purposes. May not the fact that minute particles of this gritty, irritating enamel are frequently passing through the alimentary tract be accountable for inflammatory changes in the parts? May not the constantly recurring irritation of the pylorus by these and other irritants account for the abnormal cell changes which occur in this locality with such alarming frequency?

The skin, when subject to friction or mild irritation, protects itself through the formation of Keratin; when the peripheral nerve supply becomes injured, the integrity of the skin structure becomes impaired also, and changes in cell proliferation will be noted. This will readily explain the overwhelming frequency of epithelioma of the face as compared with the protected parts of the body. The face is subject to traumata of all kinds, the prominences especially about the nose being particularly subject to such irritations. In portions of the anatomy where irritation is marked, such as the feet from the wearing of shoes, the hands from manual labor, the stratum corneum throws out a protecting layer of tissue. In the aged, when the nerve and blood supply to the skin is impaired through sclerotic changes, the frequency of keratosis senilis is noted by all observers. When the condition becomes aggravated and the trophic nerves of the parts become injured, cancerous degeneration will be invited. The frequency with which senile warts and moles degenerate into malignant tissue requires no emphasis; it is so common that prominent surgeons, notably Dr. W. W. Keen, have advocated surgical removal of these benign growths to avoid possible subsequent malignancy. The writer feels convinced that cancer is due to changes in cell proliferation from inhibitive influences such as we have attempted to explain. In order not to be misunderstood, we wish to reiterate that trauma *per se* will not, in our opinion, cause these abnormal changes designated as cancer, but that changes in the nerve and blood supply of the part must supervene such traumata before these changes are gradually evolved.

An analysis of the cases under observation during the past five years shows the following:

1. Sex; about 60 per cent. women; married folk in great majority.

2. Age; passed 50; majority 52 to 65 years.

3. General health; fairly robust; constipation present in almost all the cases; hepatic disturbances common; negative history of syphilis and tuberculosis in nearly all the cases; history of gonorrhea admitted in majority of male cases.

4. Hereditary cancer in but 10 per cent. of cases.

5. Vaccination in all cases questioned.

6. After persistent questioning, history of trauma preceding neoplastic growth in 90 per cent. of cases. The statement that 90 per cent. of the cases gave a history of trauma deserves to be dilated upon. In our judgment, if the memories of the patients had been sufficiently acute or retentive, probably all the cases may have been referred to trauma in some form. Some of these traumatic causes are very remote, and no significance is paid to many daily habits which can justly be placed under this classification.

Why do women so frequently develop neoplasms of the mammary glands and of the uterus? Why, may we add, do men so frequently develop cancer of the throat and tongue?

Trauma of the female breast is a common occur-

rence of ordinary routine home life, their protrusion and prominence rendering them subject to frequent accidental blows. Women subject to coitus trauma, especially when laceration of the cervix exists or irritating discharges are constant, may be classed as distinctly in danger of abnormal cell proliferation due to the constant irritation of the parts. Cancer of the throat and tongue are so much more common in men than in women as to be noted by all observers. This is undoubtedly due to the habit of smoking, with its entailing irritation in some cases. It can be explained on no other basis. In the cases noted a large number of neoplasms were due to irritations from poor teeth, misplaced teeth, poorly fitting plates and injuries repeatedly produced by dental operations. Two cases of round cell sarcoma can absolutely be traced to injuries caused by the instruments of dentists.

Two cases of scirrhus of the right breast were traced to the habit the women had of carrying purses inside of the corset and pinning jewelry on the inside of the garment whenever they left their homes. The constant trauma of these hard, foreign substances striking the gland innumerable times can undoubtedly be put down as a factor in the etiology of the disease.

Many patients deny trauma in cases as above, and the following few cases will serve to emphasize this point:

Mr. F., æt. 60. Scirrhus of right breast. Patient denied trauma, but gave a history of being employed in carrying hides of morocco leather on his right shoulder, the flaps of the hides striking the breast constantly while he was walking from the stock room to the shipping room. This mild, constantly-repeated trauma was endured during a business career of thirty-five years, so that the breast may have been struck 100,000 times and the tumor produced through changed cell-proliferation in course of time.

Mrs. B., æt. 57. Scirrhus of left breast, located principally in the outer aspect of the breast, and most marked in the axillary line. Patient denied trauma, but on inquiry regarding habits it was found that for many years an adopted daughter has slept with patient, and on going to sleep had nestled her little head against the left side of the patient, the left arm of the foster-mother holding the child close. Here there was occasion for numerous traumatisms from the child's head, and the fact that the tumor located in the exact spot indicated by both of the resting place of the head corroborates this assumption. One case was noted where a single blow from a toy hammer in the hands of a child produced carcinoma of the breast within three months. Another history recites an accident of a fireman, who fell from a roof while in the performance of his duty, striking on the side of his body. A small swelling in his right supraclavicular region persisted after the other injuries had subsided. This was excised, examined and found to be a mixed cell sarcoma. The growth promptly recurred, involved neighboring tissues, and ultimately caused exitus lethalis.

Another case of sarcoma of the testicle was, after much questioning, traced to a poorly fitting bicycle saddle, and frequent trauma therefrom. These cases can be multiplied from the records, and innumerable traumata divulged which the patients themselves have forgotten, or paid no attention to at the time. To sum up our conclusions, we desire to make the following unqualified statement:

Neoplasms are due to interference with normal cell reproduction induced through trauma, pressure, severe inflammations, or constant irritations—these factors act upon the trophic nerves supplying the parts affected, and prevent, either through pressure, inhibition, or inflammatory changes in the nerves themselves, proper afferent and efferent impulses to the cells supplied by these nerves. When the trophic nerve is severed degenerative change in the parts served by the respective nerve are noted; when the trophic nerve is only partly destroyed or diseased, or inhibited, cell control is interfered with, and riotous, abnormal cell growth is invited.

Careful observation regarding infectiousness of cancer of bacterial or parasitic origin have in all the cases noted been of a negative character, and the long, fruitless search for the specific germ finds no encouragement at our hands.

If these statements prove correct, it behooves us as guardians of the public health to warn against neglecting traumatism of all kinds; to warn against certain habits and occupations which induce constant irritation, and to insist that when trauma occurs or exists proper medical attention be given without delay. The drop of water may hollow out a rock; persistent trauma or irritation, even if unnoticed, may cause the most profound tissue changes.

Fifty-sixth Street and Broadway.

THE IMPORTANCE OF THE EARLY DIAGNOSIS AND TREATMENT OF EPILEPTIC SYMPTOMS.

By FRANK M. STITES, M.D.,

HOPKINSVILLE, KY

We are sometimes inclined to magnify unduly that phase of a subject to which we have given special thought or attention, but I believe that in considering a disease such as epilepsy, in which the intractability to remedial measures increases so rapidly with its duration, all should be agreed that an early diagnosis is essential to successful treatment. It is not strange that physicians are loath to pronounce the disease epilepsy, nor that the family should hesitate to accept such a diagnosis as correct, for up to the present time no name carries with it more terror and no sentence to suffering is more hopeless. Generally the disease has become fixed on the individual before either the physician or the family are willing to accept the correct diagnosis, and before the proper measures are instituted for relief. This should not be so, and I believe that in most cases a diagnosis of epilepsy is possible very early, and in some instances with reasonable probability after the first two or three seizures. Oppenheim is perhaps correct, however, in saying that the diagnosis of epilepsy should never be made with the first convulsion.

The most serious obstacle in the way of an early diagnosis of epilepsy at the present time is a lack of a definite knowledge of the pathology of the disease. Perhaps it may be shown, as investigation clears up the true pathological conditions, that there are several diseases which are now classed as epilepsy. As it is, we are practically dependent on the objective symptoms, which in most cases must be described by the family of the patient—often too ignorant to observe just what is of most importance for the physician to know. Another serious obstacle is the fact that

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convulsive seizures in every way identical with epilepsy, so far as the individual attacks are concerned, are commonly associated with a number of diseases, and yet are permanently relieved with the removal of the exciting cause. In spite of these and other difficulties in the way of a prompt and positive diagnosis, the extreme gravity of the disease when it has become permanently fixed on the patient should encourage the profession to recognize the symptoms at the earliest possible stage in its development. There is no other disease except insanity which causes more mental anguish to the patient and his family. The constant menace of the seizures; the fearful appearance of the convulsion, and the almost certain effect of the disease in destroying the mind, cannot be adequately described. Though even in advanced cases cures are sometimes possible, it is well recognized that the chronic epileptic is about the most unsatisfactory patient that can apply for treatment, and consequently many of them are allowed to become a prey to quacks and patent nostrums, and these human parasites greedily seek them with glowing advertisements and long lists of testimonials of permanent cures effected in a few weeks or months. Spratling, in his work on epilepsy, says: "Recent cases are twice as likely to respond to treatment as chronic ones." And again: "It seems fair, on the whole, to say that even with an almost entirely chronic class, we may expect a cure of about five per cent. If all could come under treatment early enough this percentage could be doubled or trebled." This statement is clearly upheld by statistics, and it is probably equally true that if we could begin proper treatment with the first seizure the percentage of cures would be many times greater.

The question naturally arises, is it ever possible to say in any case that the first seizure is epileptic, or is it necessary to wait for successive returns to fix the habit on the sufferer before a diagnosis can be made or the proper treatment instituted? This question may be answered by the pathologist before many years, but as yet it is not often, if ever, safe to pronounce a patient epileptic with the first seizure. The long treatment and the rigid care which should follow the diagnosis of epilepsy should not be inflicted on anyone without good reason for believing it necessary. In some cases, however, the presumption may be very strong with the first manifestation of the symptoms, and a single return, when all the facts have been carefully observed, should enable the physician to give a positive opinion.

Among the several features that must be taken into consideration in making an early diagnosis of this disease, are two of special importance. First, that it is essentially a disease of early life, and next that an hereditary predisposition is found in a majority of the cases. As the study of the disease progresses and statistics accumulate it is probable that these two facts will be more strongly emphasized. Even though a strong hereditary tendency may not be sufficient to produce the disease of itself without the exciting cause, yet more than half of the recorded cases show hereditary susceptibility to have been present in greater or less degree. An alarming number are found to be due to direct heredity-epilepsy in one or both parents. This, strengthened by the fact that insanity in the offspring of epileptic marriages is a common occurrence, should by all means lead to the enactment of a stringent law forbidding the marriage of epileptics. Such a law would greatly diminish both epilepsy and insanity in the succeeding generation.

Alcoholism, syphilis, tuberculosis, insanity, and the neuroses are responsible for their share of epileptics, and until the people can be educated to require at least as clean a family history for the marriage contract as is now required to obtain a contract for life insurance, we may reasonably expect a steady increase in the prevalence of this disease. The history of any of these diseases in the ancestry of a patient should add great weight to the diagnosis of epilepsy in doubtful cases, and should assist in arriving at this conclusion at an early stage in the disease.

The great majority of all cases of epilepsy begin in early life, and it is rare for it to develop after the second decade. Strange to say, convulsions in nervous children and those having an hereditary susceptibility to nervous diseases, have been regarded as of less consequence than those occurring in more normal individuals. So high an authority as Holt says, "Except when convulsions mark the beginning of epilepsy they are much less serious than they are generally regarded by the laity. In a highly nervous or susceptible child a convulsion may often mean no more than an attack of severe migraine in an older person." The importance of an inherited susceptibility is well illustrated by Spratling in the work already quoted. He says, "Given an individual in whom epilepsy may be induced under the influence of some irritation, of which the climax—*i. e.* the point at which it causes the seizure to appear—is represented by 100. If there are already present sixty of these points from, we will say, a predisposition due to heredity, there will remain but forty to be supplied by some exciting cause to bring the disease to light." It is, therefore, a serious mistake to regard convulsions as of minor importance in nervous or susceptible individuals.

Take the two facts just mentioned, that epilepsy is generally hereditary, and is usually developed in early life, and the conclusion is forced that convulsions occurring in early life in one already made susceptible by heredity should be regarded as strongly indicating the probable development of epilepsy. Regardless even of these things, convulsions in infancy and childhood should always be regarded as the possible beginning of epilepsy. Coutts gives the after-history of eighty-five cases studied by him. Forty of these suffered from pronounced neuroses in later life, and of these, twenty-five, or about 30 per cent. of the whole number, developed epilepsy, thus showing a clear connection between infantile convulsions and true epilepsy in a large per cent. of his cases. Other statistics confirm this. Even in a child of healthy parentage, a convulsion from any cause may be complicated by hemorrhage into the brain cortex that will finally result in epilepsy by the continued irritation which is left.

The presence of the mental or physical stigmata of degeneration should add to the gravity of the prognosis in convulsive seizures and should assist in determining the diagnosis of epilepsy at a much earlier stage of development. The signs of degeneration should be looked for in all cases of nervous diseases, and especially when epilepsy is suspected, because they may assist in deter-

mining the existence of this disease. If the only epileptics were those who suffered from the beginning with grand mal attacks the question of diagnosis would be greatly simplified. The purely psychic and the milder forms of petit mal seizures render the diagnosis at times very uncertain.

It would hardly be proper to say that epilepsy has a prodromal period in its development, but the first seizures may be so mild and insignificant in their manifestations as to escape notice for many months, or even years. The physician may not even be consulted, and if he is, the description of the attacks is often misleading and entirely inadequate for the purposes of diagnosis. I have seen a case of purely psychic epilepsy that was treated for years as syncope, and another, beginning as petit mal, in which the aura was felt as a pain in the right arm and the loss of consciousness was not complete, was treated for months as rheumatism. A reputable physician of my acquaintance treated a case of grand mal convulsions for a considerable length of time for another disease because the parents could not give an intelligent account of the seizures, and because the symptoms that were present in the intervals were of a deceptive nature. In every doubtful case with obscure nervous symptoms where there is the possibility of epilepsy, the first step in arriving at a diagnosis should be to place the patient under the constant care of a trained attendant, intelligent enough to record all the symptoms of the disease and give the attending physician an accurate picture of the condition of the patient; for it is very rare for the general practitioner to be able to see the actual seizure, and he must depend upon the description given him, and ordinary observers are incompetent to describe the obscure symptoms of this disease.

There should be no difficulty in recognizing grand mal seizures or petit mal where the loss of consciousness is complete, but at first the attacks may be purely psychic, and the loss of consciousness and convulsions in the seizures of petit mal may be so slight and transient as to pass entirely unnoticed. When a severe convulsion brings the true nature of the disease to light the habit has become firmly fixed and the possibility of cure greatly diminished by the duration of the attacks.

In the beginning of a Jacksonian epilepsy the convulsion may be confined to a single group of muscles, and there may be no impairment of consciousness at all. It is well known that the seizures may for a long time be nocturnal, and occur only during the hours in which the patient is asleep, and if he sleeps alone the only sign will be nocturnal incontinence of urine or feces, with headache and malaise the next morning, and possibly a sore tongue. In older children nocturnal incontinence should create the suspicion of epilepsy, and the other symptoms should be carefully looked for.

Physicians should be extremely careful in pronouncing any obscure mental or nervous phenomena as of no consequence, and in nervous or susceptible individuals where the symptoms occur periodically with comparatively normal intervals, the possibility of epilepsy should receive due consideration. It is not at all uncommon in cases of this disease which are supposed to be of recent development, to get a history of peculiar "spells" extending over a long period, and it is more than probable that these "spells" were the objectively milder manifestations of epilepsy. Unnatural mental or motor activity, temporary aphasia or amnesia, transient attacks resembling syncope, any of these symptoms occurring periodically with normal intervals may properly receive attention as being possibly connected with obscure attacks of epilepsy. In the case of a boy, grand mal attacks developed in his fifth year and continued for five weeks with intervals of a few hours or a few days between the seizures. For several weeks before the convulsions, however, there was a history of periods of decided motor activity and mental excitement that were attributed by his parents to bad temper, and under this impression he was punished for these "spells" until the severe convulsions revealed the true nature of the trouble. In another boy, age seven, petit mal attacks were not recognized for several months because loss of consciousness was not complete, and the intense mental excitement obscured the nature of the attacks. Physical restraint and punishment were both resorted to in this case before the true character of the disease was recognized.

Many chronic epileptics can be traced back and their seizures found to have begun as convulsions associated with scarlet fever, whooping cough, and other diseases of childhood. It is not possible to say that these convulsions really marked the beginning of the epilepsy, in the sense that the first convulsion was epileptic, for the first convulsion may have produced a hemorrhage in the brain cortex that was the real cause of the succeeding seizures.

The frequent connection between epilepsy and the convulsions associated with the common diseases of infancy and childhood should suggest a more careful study of this symptom, and should render the prognosis as to permanent relief more guarded and the attention to the after-treatment more thorough. The profession is not free from criticism in this connection. While the family can generally be assured that the immediate danger to life in ordinary cases is small, yet they should always receive instruction as to the possible return of the seizures, and the meaning of the symptoms explained, and at the same time they should be cautioned to avoid all possible sources of irritation.

To summarize the subject:—(1) A diagnosis of epilesy at the earliest possible stage of its development is essential to successful treatment.

(2) Convulsions from any cause and at any age are not to be regarded as of slight significance, but the possibility of the development of epilepsy in every case must receive careful consideration.

(3) Recurring convulsions in the young, associated with hereditary susceptibility to nervous diseases, should invariably be regarded as probably epileptic in their nature. The more insignificant the exciting cause the stronger the indication of this disease should be regarded. It should be remembered, at the same time, that each return of the seizure renders permanent cure more doubtful.

(4) In all cases in which obscure mental or nervous symptoms tend to recur periodically with normal intervals the possibility or probability of epilepsy in the form of psychic, Jacksonian, or petit mal seizures should be considered, and careful study be given to the symptoms; and when possible, the case should be placed under the care of an intelligent attendant until the diagnosis is

positive. No unnecessary delay is permissible in these cases, for they are generally regarded as less amenable to treatment than the grand mal seizures, and the fact that most often the diagnosis is delayed in these types of the disease may account for the failure in results.

(5) Though care should be exercised in doubtful cases it is better to give the patient the benefit of the doubt and institute treatment early, even when a positive diagnosis of epilepsy is not possible, than to allow the condition to become chronic and perhaps hopeless. The general care which should be given to a patient supposed to be epileptic would, in fact, benefit any obscure nervous disease, whether convulsive or not in its nature. A positive and early diagnosis is important, but the early treatment is of far greater importance, and proper treatment should be begun as soon as the diagnosis is reasonably certain and should be persistently carried out until the result is assured.

LATE RESULTS OF THE *X*-RAY TREATMENT OF CUTANEOUS EPITHELIOMA.*

By CHARLES MALLORY WILLIAMS, M.D.,

NEW YORK.

THE cases upon which this report is founded all occurred in the private practice of Dr. L. Duncan Bulkley, to whom I am indebted for the privilege of recording them. They form the basis of an article which appeared in the *American Journal of the Medical Sciences* in March, 1905, and in view of the lapse of time since the preparation of that paper, now nearly two years, it may be interesting to follow the later history of the patients, who, up to that time, had remained free from any recurrence.

The original article concerned eighteen patients suffering from epithelioma of the face. They fell naturally into three classes. The first class consisted of two cases of epithelioma of the lower lip; the second, three cases in which the growth was situated deep in the cutis, and was of considerably greater extent than the small area of ulceration over it; while the third class comprised thirteen cases in which the growth was very superficial.

The different classes responded very differentlv to treatment. Of the two cases of epithelioma of the lower lip, one patient showed no improvement whatever after a month of treatment, and had the tumor excised, and six months later died after an operation for recurrence. The second patient in this class improved, and after December, 1903, showed no sign of the disease, the lip appearing normal, "except a very slight shrinkage on one side," as he wrote to me August 29, 1906. Since 1903 the only *x*-ray treatment was a few exposures in August, 1904, given with the idea of preventing a recurrence, as there was then neither hardness nor ulceration. This case is the more noteworthy because a tumor in this region is usually especially resistant to *x*-ray treatment.

The three cases in class two, those in which the hardness was deep, and out of proportion to the ulceration, all did badly. One of them, it is true, was very irregular in his attendance, and did not give the method a fair trial; the other two were faithful, but, in spite of repeated and prolonged exposures, carried to the point of producing dusky redness and peeling, with varied conditions of tube vacuum, the benefit was very limited. The small ulcer in each case healed readily, but the hard mass beneath seemed little, if at all affected.

The results in the third class were much more encouraging. One, a man of eighty-six years, died from the rupture of an artery after about two months of treatment, when the growth had nearly disappeared, and two ceased treatment, although they were progressing nicely, and have since escaped from observation. The remaining ten cases are those to which I wish particularly to call your attention this evening. In all, the lesion was on the face, above the mouth, and in all it was of the same general type, the characteristic mark of which is its superficiality. The induration seems to be in the skin itself, and quite near the surface; never deep as in class two. The borders are generally narrow, slightly elevated, firm, grayish white, and composed either of separate pearly nodules or of such nodules run together to form a ring, or part of a ring. The base is sometimes fairly deeply excavated, but usually it is only a little below the surface of the surrounding skin. It is sometimes a bright red, and moist from exuded serum, but the exudation is never very great, and often dries to a scab, which falls from time to time, or may be pulled off, leaving a moist, easily-bleeding surface, or the base may be only delicate pink scar tissue. This type of epithelioma is always comparatively benign, as is shown, indeed, by the long duration of the disease in some of the patients in this series—twelve and thirteen years, respectively, in two of the cases.

Of the ten cases, two have died. One of these (No. 3) had an ulcer about one-eighth by one-quarter of an inch, near the free border of the left lower eyelid. This healed after about two months of treatment, only to be followed about a month later by a pearly nodule, a little external to the scar. This disappeared after about six weeks of treatment, and there was never any recurrence. His general health was not good, however, and he died, aged sixty-one years, in September, 1905, one year and eight months after the last treatment, having been in bed four months with "rheumatism, neuralgia, and a complication of diseases," as his wife wrote me. The second death (No. 6) was that of a woman of seventy-eight years, who had had an epithelioma on the left cheek, which healed readily after a month's treatment. She was a chronic invalid, however, suffering greatly every winter from bronchitis, and in January, 1906, two years and three months after the last treatment, she died. Her son, a very intelligent man, was with her constantly, and wrote to me about a month before her death that she was losing ground steadily, but that there was no trace of a local return, and no symptom of internal cancer.

Another case (No. 5) had several scattered, wasty spots on the cheeks and nose, one of which had gradually developed into an epitheliomatous ulcer, and was therefore given much more intense treatment than any of the others. This spot, apparently, was cured, and was replaced by a smooth scar, which was still perfect three years and nine months later. The patient became very irregular in his attendance, however, and it is perhaps due to this that, in spite of repeated applications of the *x*-ray, the other spots have never healed. In fact, one, which was only warty at first, became much worse, and ulcerated, but now, he writes me, is improving again under more regular treatment. As far as the spot first treated is concerned, the result is excellent, but on account of this development of an ulcer at

*Read before the Section on Dermatology, New York Academy of Medicine, October 2, 1906.

another point he cannot be ranked better than improved.

Two cases recurred *in situ*, one seven months, the other two years, after the last treatment. It is only fair to add, however, that both of these patients ceased treatment before the physician was satisfied with the result. In one case (No. 9) the lesion showed no change whatever, after seven exposures in the course of two weeks, except an increase in redness, yet it disappeared entirely without further treatment during the next six weeks, and only reappeared two years later. It is still of the same mild type as before, for the patient writes me that "there is still a little redness on the spot treated, sometimes threatening. Just below that there is still a little point now" about an eighth of an inch in diameter "almost double the size" it was a year ago. "The crust comes off frequently, and the spot is then scarcely noticeable." The recurrence in the second patient (No. 8) also seems to be very small and of slow growth, for I have had letters from him once or twice a year for the last three years, and his really careful descriptions of the appearance of his disease hardly vary from letter to letter. The scar left by previous treatments is about an inch square, and in one corner of this is an ulcer, ranging from one-eighth to three-sixteenths of an inch, now better, now worse. The rest of the scar is healthy.

The remaining five patients were all well when last heard from, less than two months ago, at intervals ranging from two years and three months to three years and six months after the last treatment, and all declare that they can find no trace of their old trouble, save a smooth, healthy scar. Unfortunately, I have not been able to examine them myself, and have to trust to letters, but the natural dread of cancer makes these people very careful observers, and I have no reason to doubt their honesty. The good results in some of them have far surpassed all expectations, for one patient had but a single exposure, yet was free from recurrence two years and six months later; while another, whose attendance was so irregular that I despaired of permanent cure, has now been free from his disease for two years and three months. These men are now seventy-eight and eighty years old, respectively, and this raises an important point in the choice of a treatment for cutaneous epithelioma. Many of the patients are of advanced age, at a period when the danger of an operation, or of general anesthesia even, is a serious matter, and at a time, too, when their natural expectation of life is so short that they are likely to die of some other disease before the tumor causes them any serious inconvenience, if its growth can be held in check for a few years. Nevertheless, the freedom from recurrence, after a prolonged period of observation is the most important evidence of the value of any method of treatment, and it is the chief purpose of this paper to add a little to the scanty available data bearing on this subject. The lapse of time, even in the best of the cases, is too short to give absolute assurance of cure, but nevertheless it is long enough to establish a strong presumption of permanence, which is strengthened with every passing month, and which is favored also by the fact that the last recurrence, even in the insufficiently treated cases, was noted a year ago, since which time there has been no defection, save by death from independent causes. The list is too short, also, to serve as a basis for the calculation of the percentages of cures and failures. It is but a single contribution, among the many that must be collated, before we can reach a just estimate of the therapeutic worth of this strange force.

No	Age	Site	Last Treatment	Last Report	Result
1	41	Temple	Mar. 27, 1903	Sept. 10, 1906	No recurrence after 3 yrs., 5½ mos.
2	78	Front of ear.	May, 1904	Aug. 19, 1906	No recurrence after 2 yrs., 3 mos.
3	80	Lower eyelid	Jan. 28, 1904	Sept., 1905	Died. No recurrence after 1 yr., 8 mos.
4	76	Cheek	Mar. 20, 1904	Sept. 12, 1906	No recurrence after 2 yrs., 6 mos.
5	61	Cheek		Aug. 22, 1906	No recurrence after 3 yrs., 0 mos. in one spot; fresh outbreak at another point soon after healing at the first.
6	76	Cheek	Oct. 20, 1903	Jan. 10, 1906	Died. No recurrence after 2 yrs., 3 mos.
7	40	Cheek	Jan. 2, 1903	Aug. 29, 1906	Recurrence after 7 mos., in corner of scar, now progressing very slowly.
8	81	Nasolabial fold	Oct. 19, 1903	Aug. 21, 1906	No recurrence after 2 yrs., 10 mos.
9	75	Nose	Sept. 16, 1903	Sept. 8, 1906	Recurrence after 2 yrs., just below scar; progressing very slowly.
10	64	Skin of upper lip	July 15, 1903	Aug. 17, 1906	No recurrence after 3 yrs., 1 mo.
11	41	Lower lip	Aug. 17, 1904	Aug. 29, 1906	No recurrence after 2 yrs.

616 Madison Avenue.

SOME ETIOLOGICAL FACTORS IN BONE TUBERCULOSIS IN CHILDREN.*

By CHARLTON WALLACE, M.D.,

NEW YORK.

In accordance with the resolution adopted by your board last fall, I wish to submit the following report concerning the investigation of some of the causes of bone tuberculosis in children.

It has not been satisfactorily proven why the tubercle bacilli, the microorganic agency, select the bone instead of the lungs in these cases; but authorities seem united in the theory that the bone is involved secondarily to the infection of some gland, where the disease is quiescent; this subsequently breaks down, and the bacilli circulate in the blood and are deposited in the new-forming bone, where, the blood supply being most profuse, a fertile soil for growth is furnished. The exciting cause, whether injury, acute disease, or weakened general condition, irritates the bacilli into activity. Destruction results because the tender developing tissue has not the strength to resist the inroads.

In considering the etiology we will exclude congenital affliction, for so far medical science has reported but twenty-three (23) cases in which tuberculosis existed at birth, and none of these was of the osteal variety. But a predisposition may be inherited, and by a predisposition we mean a constitutional defect and unsoundness of the original construction of some organ or tissue at birth, which makes one more susceptible to the contraction of the disease when exposed. This factor we recognize, but do not believe that it plays so prominent a part as environment in creating the susceptibility to the disease.

Lack of proper nourishment, poor ventilation, personal uncleanliness, and overcrowding so weaken the system that it furnishes an excellent bed for the growth of the bacillus of tuberculosis, and when acute disease or injury further debilitates, exposure only is necessary, and the disease is contracted. These facts are generally known.

*Report to the Board of Directors of the Crippled Children's Driving Fund of New York.

During the past year we of the Crippled Children's Driving Fund of New York City, with the aid of the records at the Ruptured and Crippled and New York Orthopedic Hospitals, and the Department of Health, have been enabled to make some investigations concerning the true influence of these agencies in causing this disease. We have secured only two hundred and forty-three complete records, because families of patients objected to giving the desired information. Our choice of cases has been limited to those dating back three years, since the present full records of the Department of Health of New York City have been in existence only during that time. Also the patients change their addresses so often that it is hard to locate them after any great lapse of time.

The average daily expenditure per capita for all expenses, exclusive of rent, we found to be, for Class I. fourteen and one-half cents, and for Class II. twenty-five and one-tenth cents. (See Table.) With this small sum for fuel, light, clothing, and food, how is it possible to secure enough nourishment to keep the tone of the tissues and organs in proper condition to resist disease when exposed, or to cure it when contracted?

The ventilation was in general inadequate. Three reported windows open wide; one hundred and forty-two, open one to two inches, and ninety-eight windows kept closed. The rooms were, as a rule, dark, and not exposed to sunlight, accommodating about two people to a room.

The most significant facts of all, the statistics show that 110 of these cases had resided within infected dwellings where pulmonary patients had lived. Eighty-six had been exposed within the family, through either a member of their own immediate family or a boarder, and had come in personal contact with these. This gives us forty-five per cent. who lived in infected dwellings and thirty-five per cent. who came in direct contact with those suffering from pulmonary tuberculosis. Thus, we have a combined percentage of eighty, but sixteen per cent. of these were exposed in both ways, which gives us finally sixty-four per cent. of the two hundred and forty-three cases with a history of exposure.

The bathing was insufficient. Eighty-eight were bathed twice a week, sixty-nine weekly, and eighty-six irregularly, and not oftener than once in two weeks.

As the Department of Health disinfects after tuberculosis only in the event of death or removal of the patient, their records show that only seventeen of the one hundred and ten places have been disinfected.

Cornet of Berlin reported in 1890 that in twenty-eight homes visited in which pulmonary patients were dwelling, the dust of sixty-seven per cent. contained inoculable tuberculous bacilli, and Harold Coates of Manchester, England, in 1901 found that of thirty-one homes in which pulmonary cases resided, sixty-one per cent. contained dust laden with the tuberculous microorganism.

It is our belief that two strong factors are instrumental in the acquiring of bone tuberculosis, viz., inherited tendency and unsanitary and otherwise unfavorable environment. The first we cannot remove; the second we can remove, and thus render latent the effect of the former.

In closing, let me add a plea for a better education of sufferers from tuberculosis that they may guard against infecting the little ones, for thorough disinfection of rooms occupied by pulmonary cases, for the removal of those children afflicted with bone tuberculosis to the country or seaside. Use your influence to awaken the public to the need of seaside and country hospitals for the little sufferers of this saddest and most painful form of the white plague. Save the children from the folly and ignorance of their elders whenever it is within your power.

TABLE SHOWING EARNING CAPACITY AND EXPENSES OF FAMILIES IN WHICH BONE TUBERCULOSIS OCCURRED, TOGETHER WITH PERSONAL STATISTICS.

The cases are [illegible] according to the [illegible] capacity of the entire family below or above $45.00 per month.

Number of cases ... 243

Class I. [illegible]

Total Earnings, $3,404.50 per month for 566 persons.

[illegible]

.145 per capita per day for food, clothing, etc.

Class II. [illegible]

Total Earnings, $8,450.50 per month for 906 persons.

[illegible]

clothing, etc.

[illegible] room, 1.69.

Ventilation: Full, 3; little, 142; none, 98.

[illegible]

Bathing: Daily or semi-weekly, 88 (36%); weekly, 69 (28%); irregu-

[illegible]

Disinfected: By the Department of Health, 17.

[illegible]

SARCOMA OF THE NASAL FOSSA.

By RICHARD H. JOHNSTON, M.D.,

BALTIMORE, MD.

Some years ago I saw a case of sarcoma of the nasal septum with involvement of the cervical and axillary glands. A detailed description of the case appeared in the *Laryngoscope*. Recently I have seen another such case with a different point of origin which may prove of interest.

Mrs. P. H. M., sixty-five years old, consulted me March 8 of the present year for right nasal obstruction and neuralgic pains in the same side of the face. She was positive in the statement that her first symptoms of "cold in the head" and neuralgia had come on three weeks before. There was a decided, hard, nonpainful prominence of the nose externally, which she said had been present for years. On looking into the nose a grayish white mass, hard to the touch, could be seen above. Below, on a level with the inferior turbinate body, was a pink growth, which bled easily. There was no doubt as to the malignancy of the tumor. The septum was pushed over to the opposite side, making respiration through that nostril impossible. The family of the patient was informed of the seriousness of the case and the improbability of removing all of the growth by an external operation. An operation was insisted upon, however.

On the following Tuesday, March 14, the nose was opened by an incision in the nasolabial fold and the soft tissues turned to the opposite side. The nasal bone was removed with cutting forceps and a free view obtained. The hard, rounded mass revealed itself as a bony cyst of the middle turbinate which had no connection with the tumor proper. Hemorrhage was free. The fossa was filled with large masses of the growth which was attached to the middle and inferior turbinates, the floor of the nose, and the walls of the antrum. The origin seemed to be from the antrum with a breaking through into the nose and an infiltration of its structures. The septum was not involved. It was seen at once that there was no possibility of removing the entire mass. With the curette an effort was made to clear a passage through the

nostril to make the patient more comfortable. This was only partially successful—a large mass was found extending into the nasopharynx, all of which could not be removed. The nostril was packed and the patient put to bed. She recovered from the operation, but the tumor recurred promptly. In a short time the external swelling again appeared and the growth was seen at the anterior naris. The operation seemed to stimulate the growth of the tumor and in a few weeks a large, red, vascular mass was hanging out of the nostril. A second operation was declined by the patient. She sank gradually, and died May 16, of exhaustion. The patient was made more comfortable by the operation, in that the severe pain which she suffered before was relieved. The examination of sections of the growth showed a very malignant, mixed cell sarcoma. Blood-vessels were numerous, and no connective tissue could be made out. Such cases show how helpless we are against malignant growths about the head, and especially about the nose. Unless we can see such patients in the beginning and make an early diagnosis, we may be sure that any operation will be followed by early recurrence. Unfortunately, patients do not consult rhinologists until it is practically impossible to remove all the diseased tissue. Experience teaches that unless we are reasonably sure of removing the entire growth, it is, perhaps, better not to operate, since what is left increases rapidly in size.

919 N. Charles Street.

Physiological Albuminuria.—G. Saccone has made a study of the frequency of albuminuria among the men of the Italian Navy, who are carefuly examined before they enter the service, and are not accepted until it has been proven that they are perfectly healthy. In the service they are subjected to severe strain from the nature of the service, and the necessary exposure to cold and heat with severe exertion. At the same time they live hygienically, and are constantly in the open air while the diet is carefully supervised. Albuminuria occurring in these men may fairly be considered as physiological and not pathological. The author made systematic urinary examinations of the urine of 400 men, part of them sailors, others firemen. Some were at sea, while others were working on land. As a result of these examinations he tells us that he found albuminuria in seventy-six to eighty-five per cent. of these men. It was essentially transitory, and was always in small amount, from .04 to .20 milligrams per thousand. He concludes that there is good evidence of the existence of physiological albuminuria in robust men when undergoing fatigue. Those men employed on the sea showed more frequent albuminuria than those employed on shore, and it was larger in amount. The life at sea has evidently an influence on the production of physiological albuminuria.—*Annali di Medicina Navale.*

The Question of the Mode of Infection in Malta Fever.—Edward H. Ross states that up to the present time the *Micrococcus melitensis* has been found constantly in the blood of patients suffering with Malta fever, even in such a small quantity as five milligrams of the peripheral blood, and it has been found to be excreted intermittently in the urine; consequently, as in other analogous diseases, the possible modes of infection in Malta fever are: (a) By direct contact with Malta fever patients. (b) By the clothing which has been worn by Malta fever patients. (c) By urine-infected dust. (d) By urine-infected water or food. (e) By biting insects. (f) By transmission in some way from some intermediate host. In order to test the first mode of infection, a man suffering from Malta fever contracted in a Malta hospital was nursed in the ordinary sick-berth of a warship for a month by some non-immunes, who were in daily contact with the ship's company, but none of them contracted Malta fever. This was repeated in another ship with negative results. The ordinary experiments with clothing which had been worn by the patients were tried. The results in these cases were negative. Urine, obtained from a Malta fever patient, mixed with some dust, was sniffed up the nostrils by two non-immunes. The experiment was repeated several times, but none of the men contracted the disease. Urine from a fever patient was mixed with water, which was drunk by six non-immunes, none of whom contracted Malta fever. Four non-immunes drank goat's milk which contained diluted urine in which the micrococcus was present. These men all remained well. The opinion is held that the common and specific mode of infection in Malta fever is by biting insects. Many kinds of biting insects have been experimented with, but, owing to the fact that the investigators were living on board ship, they often had the greatest difficulty in keeping the insects alive and making them bite regularly. Apparently the right insect has not yet been hit upon, for none of those conducting the experiments contracted the disease. Zammit found goats to be susceptible to Malta fever. The *Micrococcus melitensis* was found in the milk of these animals. Later it was discovered that cows also were susceptible to Malta fever. Non-immunes who drank goat's milk in which living cultures of the micrococcus were put remained well. Unfortunately, naturally infected milk was not to be obtained. The blood of thirty-eight horses in Malta has been examined and four of these animals reacted to Malta fever. The writer concludes that, as horses do not eat offal or drink goat's milk, the micrococcus of Malta fever in all probability is not conveyed by the drinking of milk or the eating of offal, but by an insect, as yet undiscovered, which transmits it from person to person, goat to goat, cow to cow, and horse to horse, and possibly from one of these animals to the others.—*The Journal of Tropical Medicine.*

The Surgical Treatment of Tuberculous Glands in the Mesentery.—Edred M. Corner cites cases which show that the removal of tuberculous glands from the mesentery of the intestine can be followed by complete success. The writer also shows the danger of delay, describing one patient who was submitted to operation too late, as the glands had led to a general infection of the body—miliary tuberculosis. Tuberculosis of the mesenteric glands most often in adults affects the lymphatic glands which drain the appendix or the ileocecal region. Suppuration is very uncommon in the mesenteric glands. One of the patients described in this article was a boy six years old. Palpation revealed a well-defined, somewhat rounded mass about the size of a cricket ball in the region of the cecum. The swelling was movable. There was some tenderness on palpation. Small nodules were felt on its anterior surface. The liver extended one finger's breadth below the costal margin; the spleen was not enlarged. The other systems were normal. At operation the peritoneal cavity was opened. Incision was made into the abscess cavity, the walls of which were very thick. The greater part of the sac was cut away and the remainder was curetted. The cavity was closed with two rows of silk sutures after being thoroughly irrigated with salt solution. The abdominal wound was closed in layers. The wound healed by first intention. It is now about two years and three months since the operation. The patient has grown strong, has put on flesh, and has maintained the improvement in every way. The writer believes that there is a stage in cases of abdominal tuberculosis which is amenable to surgical treatment alone.—*Treatment.*

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THE OPEN-AIR TREATMENT IN HOSPITALS.

IT has long been recognized that a plentiful supply of fresh air, particularly if this can be obtained in the open, is of signal value in the treatment of a great variety of diseased conditions, both medical and surgical. One of the most familiar examples of this is in the treatment of tuberculous affections in which an abundance of fresh air is universally accepted as the *sine qua non* of a successful outcome. Not only in the more medical aspects of the condition is this admitted, but also in those instances which were formerly believed to be curable by extensive operative interference only, where a continuous outdoor life in a suitable climate has resulted in a complete and permanent recovery. It is not always possible, however, to provide the climatic change desired, and recourse must be had to procedures entailing less inconvenience and expense. In cities the house roof naturally suggests itself as the most desirable substitute by which the necessary modicum of fresh air may be provided for a patient. Northrup of this city has proposed the utilization of the roofs not only as an essential in the treatment of certain diseases, but also as a means of providing a healthful playground for children.

Some of the larger hospitals of New York City have in recent years also made arrangements to send their convalescent patients to the roofs of the buildings, and at the New York Lying-in Hospital special provisions were made for this purpose in the planning of the structure. J. W. Markoe calls attention, in an article in the *Bulletin of the Lying-in Hospital*, September, 1906, to the good results obtained by a sojourn on the roof by the pale, anemic women from the tenements waiting to be confined and also by those suffering from some of the complications of pregnancy. By the aid of a regular ward organization patients can be kept on the open roof or in an adjoining enclosed solarium both day and night, if necessary, and in this way given the benefit of continuous exposure to the air. The writer cites a number of specific cases in which the patients' general and local condition improved under this régime. A particularly good effect was evident in those women suffering from the effects of the toxemia of pregnancy and also in the complicated postpartum septic cases in which the almost exhausted vitality of the women offers but little resistance to the progress of the infection.

Dr. Markoe's article constitutes an effective plea for a more extensive employment of the roofs of hospitals in the treatment, particularly of such patients whom the stimulation afforded to the bodily functions by a plentiful supply of good, fresh air may serve to tide over debilitating effects of a disease process. In the ordinary house the roof could be employed for similar purposes with very little trouble. It could be made to serve not only as a part of the sick chamber but also as a healthful playground and retreat for the family in general, where the wind and sun have free access, and the dust, so prevalent in the streets, is largely excluded. The Orientals have long regarded the roof as something more than a protection for the chambers underneath, and their custom in this respect is one we can well adopt with advantage.

THE QUESTION OF PURE MILK.

IN almost every part of the civilized world the problem of how best to secure as pure a milk supply as possible is exercising the minds of medical men and sanitarians. The problem has been partially solved in some countries, notably in Denmark, but in most other lands a contaminated milk supply constitutes a grave menace to the public health. Great Britain, especially, is very backward in this respect, and although the municipalities of certain of its large cities have taken up the matter, only the fringe of the evil has been touched, and the situation generally is bad.

Victoria, in Australia, has recently enacted legislation by which the government of that commonwealth will exercise a fairly rigid control over the milk supply. Such laws will undoubtedly do good. In some parts of this country the public milk supply is fairly satisfactory, but in other parts it is very much the reverse. Where the supply is good, the result has been brought about chiefly by private effort. Certain municipalities have taken the matter in hand, with a favorable outcome, but State legislation is needed throughout the whole country in order that the entire milk supply may be of a healthful character.

The Milk Commission of the Medical Society of the County of New York has done excellent work, but its field of operation is limited, and the milk having its certification is of a price which puts it beyond the reach of any but the rich or the extravagant. The chief value of the work of this Commission is by way of demonstration of what can be done by cleanliness in the dairy. Its inspectors cannot reach the main sources of supply, which are the small farms in New York State and Connecticut, some in this State being as far from the city as the shores of Lake Ontario, yet this individual inspection is the only way to insure purity in the milk supply of this or any other city. The Health Commissioner of New York has recently adopted the plan of inspection of the dairies and farms from which the milk supply of the city is derived, at the same time watching the dealers who handle the milk after it comes here. If this inspection is thorough, and includes all the one-cow to five-cow farms contributing to the flood of milk pouring into the city every day of the year, if the milk can be watched on the way, and if the dealers can be prevented from tampering with the milk in their shops, the city will be fortunate indeed.

That our supply is not yet what it should be every consumer of noncertified milk has daily demonstration, but the conditions are better than they were a few years ago, and Dr. Darlington is deserving of all praise for what he has accomplished. It is too much to hope, however, that his example will be followed by all the other health officers of the country, and one naturally turns to the federal government to protect the country at large from the dangers of milk poisoning. In a letter recently published in the MEDICAL RECORD, Mr. Cristadoro of Point Loma, Cal., suggested federal inspection of milk as the only means of insuring a pure supply, but we fear this is hardly possible. State supervision would be possible and more practicable, but even this would be difficult.

The problem of a pure milk supply is a large one, larger even than that of a pure water supply, and it is worthy of the study of the greatest of our sanitarians. We do not say it is neglected, for it is engaging the earnest thought of many in and out of the medical profession, but it does not receive the attention it deserves from the community at large. We are concerned about our canned meat, but meat is cooked before it is eaten, and however disgusting the thought of its preparation may be, the actual harm it does is as nothing compared to that from the drinking of raw milk, an ideal culture fluid for bacteria of all kinds.

MALARIA IN GREECE.

UNDER this title an interesting address was recently delivered by Ronald Ross before the Oxford Medical Society (*Journal of Tropical Medicine*, November 15, 1906). His attention was called to the subject by an invitation extended by a British company owning extensive tracts of land in Greece, and which endeavored to reduce the amount of malaria affecting its employees. The address is of particular interest, not because it adduces anything new in the medical line, but because it gives incidentally a well-considered plan of procedure for any one taking up the question of exterminating malaria anywhere. The first thing determined was the actual amount of the disease present among the company's people, and next the amount among the surrounding population. Finally a search was made for the insects which were the carriers of the poison. These were found in the customary shallow pools, and proved to be the larvæ of *Myzomyia maculipennis*, a known carrier of malaria. Ross also found that a local society had been formed and was taking the matter up in a practical way. Perhaps the most interesting part of the address refers to the possible connection of the disease with the decadence of Greece. After calling attention to her triumphs in art, philosophy, and other similar directions, Ross notes that suddenly a blight fell over all. "Was it due to internecine conflict or foreign conquests? Scarcely, for history shows that war burns and ravages, but does not annihilate. Or was it due to some cause entering furtively and gradually sapping away the energies of the race by attacking the rural population?" It is suggested that malaria may have been introduced into Greece about the time of Hippocrates by the numerous Asiatic and African tribes brought in as slaves by their Grecian conquerors. Supposing, continues Ross, "that, as is probable, the anophelines were already present, all that was required to light the conflagration was the entry of infected persons. Once started, the disease would spread by internal intercourse from valley to valley; would smoulder here and blaze there, and would gradually eat out the high strain of the northern blood. "Ross is confident that causes such as malaria, dysentery, and intestinal entozoa must have modified history to a much greater extent than we conceive." Our historians and economists do not seem even to have considered the matter. It is true that they speak of epidemic diseases, but the endemic diseases are really of greater importance. The same cause works the same evil in modern Greece. Though the country has been freed from the Turks for seventy years, yet its population has not increased very much. The inns are comparatively small and shabby and not likely to be frequented by many modern tourists, and the methods of communication are primitive. This is very surprising, because one would think that such a country would be the Mecca of all the tourists of Europe and America who would pour their millions of pounds into it just as they do into Switzerland. But, of course, the reputation of unhealthiness possessed by many of the rural tracts is fatal; the tourist thinks twice about going to them, and the innkeeper hesitates about spending his capital in a locality where he and his children may expect to be frequently ill." Fortunately, the remedy is one of easy application. Persistence of effort along lines already established will rid Greece of malaria. A return to its former glory, however, is hardly to be looked for in the immediate future, other factors conspiring to prevent such a resurrection.

THE COURSE OF THE TRAUMATIC NEUROSES.

THE uncertainty in regard to the prognosis in cases of neurosis consequent on bodily injuries is notorious, and attention has often been called to the prompt improvement in the patients' condition that frequently occurs after the award of pecuniary damages after a legal contest. In these cases the customary inference is that the plaintiff, on reaping the reward of what, to some extent at least, was malingering, drops the now no longer necessary pretense of incapacity and enjoys a much greater recompense than his actual condition warrants. Neurologists have pointed out that this is by no means always the case, and that these sudden cures are often not the result of the financial salve, but depend on the freedom from the feeling of uncertainty and constant introspection that a pending lawsuit for nervous injury always entails. This question, as it is constantly occurring in Germany in connection with the accident insurance laws, is discussed by Gaupp in the *Münchener medizinische Wochenschrift* of November 13, 1906. He attributes the steadily increasing frequency of cases of traumatic neuroses in no small measure to the manner in which these laws are framed and carried out. The long delays in making awards, and the frequently repeated examinations for the purpose of determining whether the patient's pension can be cut down, he considers do much to encourage the development of nervous incapacity and to retard recovery. As now executed, he says, these laws defeat the beneficent object for which they were enacted, and instead of serving to aid the indigent workman through a period of temporary incapacity, they tend to make of him a permanent nervous invalid unfit to work, or even to derive any satisfaction from the help he receives. He suggests among other things that the award to the patient, instead of taking the form of a regular stipend or pension, be made in the payment of a single lump sum, whose amount shall be determined by a

jury of three physicians, who shall make their final examination three years after the date of the injury. While the problem does not present itself in just this form to legislators and physicians in this country, another point made by Gaupp is of universal applicability, and that is that physicians, in examining patients after injuries, particularly if nervous symptoms are already present, should avoid any statements in regard to the possible course or outcome of the trouble which may serve to react upon the mentality of the patient in the nature of a suggestion. On the other hand, it is equally wrong to assume a manner which shall, as it were, force the patient to exaggeration of his ills in order, as he thinks, to make an impression on his medical adviser.

Pleurisy in Association with Cardiac Disease.

Pleurisy in association with cardiac disease has long been of interest to the physician. A suggestive paper on this subject is given by Ch. Roubier and Thévenet in the *Revue Française de Médecine et de Chirurgie* of October 25, 1906. The association of these two affections is not rare. The pleurisy may be either dry or there may be effusion. The dry pleurisy is frequent, but gives no marked symptoms. Pleurisy with effusion is of far more interest to the clinician than the other form. When the physician discovers a pleural effusion in a cardiac patient he should make up his mind whether he is dealing with a pleurisy or a simple hydrothorax. For a long time these two affections were not clearly differentiated. Pleurisy is encountered both in acute affections of the heart, such as acute pericarditis and acute endocarditis, and in chronic affections, such as myocarditis and valvular lesions. According to Huchard and Robert arterial cardiopathies are a more frequent cause of pleurisy than are valvular lesions. Barié, however, thinks that they occur more often in patients suffering from mitral lesions. They are also observed in lesions of the right side of the heart. All cases of pleurisy in cardiac patients are not due to the same cause. In some cases it appears that pericarditis plays a part in the development of the pleurisy; pleurisy consecutive to a pericarditis is noted almost always on the left. Likewise, the lesions of pericarditis, so frequent in the arteriosclerotic, may in some cases bring about a neighboring pleurisy. Most often, however, pleurisy is consecutive to an alteration in the subjacent pulmonary parenchyma. This alteration in the tissues varies. It may be in the form of passive congestion, active hyperemia, or spots of bronchopneumonia in the inferior lobes, and so on. But by far the most frequent form is the pulmonary infarct. In some rare cases there exists a latent pleurisy like that which is observed in certain cachectic conditions and in Bright's disease, or, more rarely still, a tuberculous pleurisy which may develop in patients weakened by cardiac disease. The diagnosis of pleurisy in the course of cardiac disease is easy or difficult, according to the case. The prognosis of such a pleurisy must be considered as very serious. Treatment consists in the evacuation of the liquid by a thoracentesis and in treating the cardiac affection by methods habitually employed.

The Etiology of Eclampsia.

It is a far cry from hay fever to eclampsia, yet these two apparently widely separated conditions are linked together by Weichardt in a discussion of the latter condition which he and Piltz have published in the *Deutsche medizinische Wochenschrift* of November 15, 1906. These authors state that a study of the mechanism of production of eclampsia and hay fever leads to the conclusion that each disease is the result of the formation of specific poisons from albumins, in the one case derived from placental albumin and in the other from the albumin of pollen. The serum obtained by injecting into rabbits placental cells or pollen grains, in each instance is not antitoxic but cytolytic, and cytolysins are formed which can break up homologous albumin molecules and liberate toxic groups or so-called endotoxins. It is Weichardt's belief that eclampsia is the result of the formation in the body of toxic substances resulting from the cytolysis of placental cells that enter the circulation, it being assumed that in these cases there is a deficiency in antiendotoxins or inhibiting bodies. By injecting into rabbits a specially prepared trituration of placental tissue the authors were able to satisfy themselves of the existence of such an endotoxin that appeared to present toxic components of two different types. The first of these was a hydrogel forming body which is therefore active in causing coagulation of blood, whereas the other more deleterious component has a specific affinity for the respiratory center, and when injected into animals promptly causes death through failure of this function. The authors also speak of their attempts to produce an artificial inhibitory body to be used as a prophylatic, in which they have been partially successful, though it does not appear that there is any immediate possibility of its being practically useful.

Diabetes and Mental Troubles.

The mere discovery of sugar in the urine of an insane patient does not offer sufficient ground for concluding that the insanity has been caused by the glycosuria. L. Marchand and Olivier, in an interesting paper on this subject in the *Gazette des Hôpitaux*, September 6, 1906, state that sugar is frequently found in the urine of the insane. Glycosuria, often intermittent, occurs temporarily as the result of various factors. It is necessary, then, before declaring that the mental troubles are due to glycosuria, to determine whether the glycosuria is intermittent or, on the contrary, continuous. Persistent glycosuria is rather rare in the insane. Lailler nevertheless thinks that this condition is found more frequently in the insane than it is in sane patients. The relations between diabetes and mental troubles may be arranged in several groups, which represent theories advanced by different authorities: Diabetes is of nervous origin; it is symptomatic of the cerebral affection, which is the cause of mental troubles; diabetes is the cause of insanity; diabetes and insanity are both under the influence of the same general disturbance of nutrition, and are simply concomitant; there is an alternation between the diabetes and mental troubles; insanity occurs in a diabetic without any relation between the two affections. It can be seen from these diverse theories how complex is the question of the relation between diabetes and mental troubles. The mental troubles which develop in diabetics are of the most varied character, and do not differ at all from those which are observed in the course of the various intoxications.

Chronic Icterus.

The persistence of jaundice during a period of years without impairment of the general health is a condition that has received but little attention outside of France. Nearly all of twenty-seven cases of this

sort of which the records have been collected by Claus and Kalberlah (*Berliner klinische Wochenschrift*, November 12, 1906), have been reported by French physicians, but the authors contribute to the number two additional cases of their own. These patients were brothers still in the twenties, with a family history of jaundice, who during a period of years had manifested continuous jaundice unaccompanied by serious general symptoms. As a result of their study of the reported cases of this condition the authors come to the conclusion that the affection does not occur under typical conditions, and that no general etiological factor exists. Some of the cases are congenital, and in these it appears that there is a primary change in the spleen, accompanied by deficiency in its function of the metamorphosis of blood pigment, perhaps also a congenital communication between the lymph channels and the bile passages. In those cases that appear later in life there is probably a primary lesion of the liver cells, possibly the result of infection or of toxin action. This view is substantiated by the frequency with which swelling of the spleen is noted, the rarity of hepatic enlargement, and the mildness or absence of subjective disturbances in the congenital cases, in contrast to the evidences of hepatic involvement that are common in the acquired form. It is not yet certain whether chronic icterus of this general type is actually commoner in France than in other countries, or whether French physicians merely have been more industrious than those of other nationalities in studying such cases, but it is not unlikely that if attention is directed to this subject many more similar observations will be reported.

The Use of Oil in Gastroduodenal Disease.

The favorable effects of oil in the presence of gastric hyperacidity has long been recognized. The sedative and anodyne action of oil on inflamed tissues is well known, and in the case of olive oil there is also a high nutritive value to be considered, so that it should prove of great use in gastric ulcerations. In a recent report by Merkel (*Deutsches Archiv für klinische Medizin*, Vol. 84, No. 1) we find that it may be given about half an hour before meals through a sound or by spoonful doses, and the administration kept up for from six to eight days together with lavage and an appropriate diet. In this manner the oil has been used with good success in cases of pyloric stenosis after gastric ulcer, chronic ulcerations with hyperacidity, pyrosis, and simple ulcer of the stomach. In the latter case it was possible to prevent entirely the occurrence of pain after eating.

News of the Week.

Health Conditions in the Canal Zone.—The great efficiency of the Isthmian health department is shown by the fact that according to a report the Isthmian Canal Commission has just received from Col. W. C. Gorgas, the chief sanitary officer on the Zone, not one American has died in the Canal Zone from disease during the last three months. The decrease in the death rate among the employees is due almost entirely to the decrease in pneumonia. In October the deaths among the canal employees included 86 negroes and 2 whites.

The Health of New York City.—The lowest death rate for the greater city since consolidation is that of the week just ended. It is 15.63, as against 17.82 for the corresponding week of 1905, a reduction in the number of deaths of 175, or 2.19 per cent. The death rate was especially low in Brooklyn, where the rate for last week was 15.34, as against 18.42 for the corresponding week of last year.

Coroner's Report of Cook County (Ill.) for November.—The 349 deaths investigated during the month show no causes which are not normal to a city like Chicago, and are seven less than those for October. Of this number of deaths, 110 were natural deaths, 25 were suicides, 28 were due to railroad accidents, 17 to asphyxiation, 14 to street cars, and 10 to homicide. Of the 25 suicide cases, 13 were the result of despondency. Four of the 25 suicide cases developed from temporary insanity, while 8 have not been accounted for. Shooting was the prevailing method of self-destruction. Fourteen used guns for suicide, 4 resorted to asphyxiation, 5 to poisoning, 1 to hanging, and 1 victim cut his throat. Among the homicides, 6 were murdered, 2 were victims of murder and suicide, while 2 were classed as justifiable murders.

A New Type of Influenza.—Press dispatches report that a typical form of influenza is very prevalent in Oxford and some other large towns in England. The chief symptoms are gastrointestinal, nausea and diarrhea being very severe, and as the health officials declare that the water and milk supplies are above suspicion, the physicians of Oxford are inclined to consider the affection as a variety of influenza. Students and townspeople have been equally affected, and hundreds have already been infected. The semifinal football match for the intercollegiate cup had to be postponed on account of the illness of a number of the players.

Fatal Cholera Inoculations.—The very promising experiments in the production of an anticholera serum that have been conducted in Manila under the supervision of Dr. Strong, chief of the Government laboratories, and carried on under the authorization of the Philippine Commission, have met with an unexpected check in the death of ten of the twenty-four native prisoners in the Bilibid jail, who were being experimentally inoculated. It is reported that the serum used may have become contaminated with plague germs during its preparation. Much protest was aroused in the Filipino press over the affair, and Governor-General Smith has appointed a special committee to investigate the deaths, and for the time being has revoked the authorization to perform experimental inoculations.

Yellow Fever in Cuba.—While new cases of yellow fever are still appearing in and about Havana, the situation is not regarded as serious. It is expected that the results of the mosquito-killing campaign instituted a month ago will soon be evident, for it has been found that thirty days is about the minimum of time in which the effects of the prophylactic measures become apparent. The sum of $30,000 is to be spent for the construction of three new wards for Las Animas Hospital.

International Tuberculosis Society.—At the meeting of this society held in Paris on November 6 under the presidency of Professor Lancereaux, among other matters the subject of the compulsory notification of tuberculosis was discussed by Drs. Samuel Bernheim and Louis Dienpart. These speakers strongly advocated the enforcement of legislation to this effect, and considered that prophylaxis could not be effectively carried out without such measures. Dr. Bernheim also pointed out the value of the phosphates and of creosote in the treatment of tuberculosis.

Child Labor Bill to be Introduced.—Senator Beveridge of Indiana has announced that he has prepared a bill to prevent the employment of children in factories, mines, and other establishments, and intends to push it vigorously. The bill prohibits carriers engaged in interstate commerce from transporting or accepting for transportation the product of any mine or factory in which children under the age of fourteen are employed, and concerns affected by it will be required to make affidavit every six months to the effect that they have no children under the prescribed age in their employ, and have not had during the preceding six months.

Longevity in Europe.—According to the investigations of German statisticians in regard to longevity in Europe, the German Empire, with a population of 55,000,000, has but 78 persons who are more than 100 years old. France, with a population of fewer than 40,000,000, has 213 who have passed their hundredth birthday. England has 146, Scotland 46, Denmark 2, Belgium 5, Sweden 10, and Norway, with 2,300,000 inhabitants, 23. Switzerland does not boast a single centenarian, but Spain, with about 18,000,000 population, has 410. The most amazing figures come from the troublesome, turbulent region of the Balkan peninsula. Servia has 573 persons who are more than 100 years old, Roumania has 1,084, and Bulgaria 3,883. In other words, Bulgaria has a centenarian for every hundred of its inhabitants, and thus holds the international record for old people. In 1892 there died in Bulgaria 350 persons who had lived for more than a century. The death of Jean Mignot of Montpont, who was probably the oldest Frenchman, has recently been reported as occurring at the age of 107 years.

Artificial Biogenesis.—At a recent meeting of the Academy of Sciences of Paris, Prof. d'Arsonval exhibited what appeared to be forms of vegetable life artificially produced by Prof. Leduc of the Nantes Medical Faculty. These were said to have been produced as the result of the inoculation of bouillon containing ferrocyanide of potassium and seasalt with a combination of glucose and a copper salt.

A Scholarship in Honor of the Curies.—Andrew Carnegie has informed the authorities of the University of Paris that he will present to the University a fund sufficient to yield $2,500 annually, to be used to pay for scholarships for research in the natural philosophy laboratory, which was recently created for the late Prof. Curie. In accordance with Mr. Carnegie's wishes, the scholarships will be named Bourses des Curie. They will be open to students of all nationalities. Mme. Curie was recently appointed Professor of Sciences at the University of Paris, the chair previously held by her husband, and commenced her lectures at the Sorbonne on November 5.

The Nobel Prize in Medicine.—It has been announced that the Nobel prize in medicine for the present year, amounting in value to about $40,000, is to be divided between Camille Golgi of Italy and Santiago Ramon y Cajal of Spain. The award is to be made in consideration of Golgi's work in perfecting the silver impregnation method for studying nervous tissues, and of Cajal's labors in applying the method to the investigation of the axis cylinder of the nerve cell.

Patent Medicines in Switzerland.—In spite of the opposition of the chemical manufacturers of Switzerland and Germany, the Swiss legislative committee appointed to consider this question has decided that in drafting the new Swiss patent laws, medicinal preparations shall not be included, and will therefore be unpatentable.

Opening of the Woman's Hospital.—The formal opening ceremonies of the new Woman's Hospital in the State of New York, at One Hundred and Ninth street and Amsterdam avenue, were held on Wednesday afternoon, December 5. The hospital was open for inspection all day on Wednesday and Thursday.

Dr. E. L. Hunt has been appointed attending neurologist to the City Home for the Aged on Blackwell's Island.

Dr. George Thomas Palmer, Assistant Secretary of the Illinois State Board of Health, has tendered his resignation as a member of that body, for the purpose of devoting all his time to journalism.

St. Luke's Hospital.—At a recent meeting of the Board of Managers of St. Luke's Hospital, Dr. S. W. Lambert was appointed attending physician to the hospital to succeed the late Dr. G. A. Spalding.

Examining Physicians for Bellevue.—At last week's meeting of the Trustees of Bellevue Hospital it was decided to appoint four examining physicians, at a salary of $1,000 a year, to take charge of the reception room of the hospital in six-hour shifts. Dr. Walter C. Cramp, Dr. H. L. Hobker, Dr. Leroy J. Smith, and Dr. A. J. Heitlinger, all recent graduates of the hospital, received the appointments.

American Society of Sanitary and Moral Prophylaxis.—A regular meeting of this society will be held at the Academy of Medicine on Thursday, December 13, 1906, at 8:30 P.M. The meeting will be under the auspices of the Committee on Education, and the general subject for discussion will be the matter of public school instruction in the physiology and hygiene of sex. Addresses will be made by Dr. Thomas M. Balliet, Dean of the School of Pedagogy, New York University, Dr. Burt G. Wilder, Professor of Physiology, Cornell University, and Dr. Helen C. Putnam, chairman of the Committee to Investigate the Teaching of Hygiene in Public Schools, of the Academy of Medicine. Dr. Prince A. Morrow will preside, and the secretary of the society is Dr. Edward L. Keyes, Jr.

Presbyterian Alumni Meeting.—At a meeting of this society to be held on December 8 at the residence of Dr. Linsly R. Williams, Dr. Richard C. Cabot of Boston will read the paper of the evening, entitled "Some Suggestions for the Reorganization of Out-Patient Medical Work." Drs. S. W. Lambert, W. Gilman Thompson, Theodore C. Janeway, hospital superintendents, and others interested in hospital work will take part in the discussions.

Northwest Texas Medical Association.—At the annual election of officers of this society held in Texarkana, November 22, the following were elected: *President,* Dr. Preston Hunt, Texarkana; *First Vice-President,* Dr. W. L. Baber, Winnsboro; *Second Vice-President,* Dr. H. Taylor, Marshall; *Secretary,* Dr. R. H. T. Mann, Texarkana; *Treasurer,* Dr. C. A. Smith, Texarkana.

International Medical Association.—At the second annual meeting of this society, held in the city of Mexico, November 15 to 18, it was decided to hold next year's meeting in Monterey. The following officers were elected for the ensuing year: *President,* Dr. H. V. Jackson, Durango; *First Vice-President,* Dr. Sidney Ulfelder, Mexico City; *Second Vice-President,* Dr. G. B. Hyde, Silao, Guanajuato; *Secretary and Treasurer,* Dr. J. S. Steele, Monterey.

Medical Council of Ontario.—The following candidates have been elected by acclamation to the Medical Council of Ontario from the territorial divisions named: Division No. 1, Dr. J. L. Bray, Chatham; 3, Dr. J. McArthur, London; 4, Dr. J. A. Robertson, Stratford; 6, Dr. Henry, Orangeville; 7, Dr. P. Stuart, Milton; 8, Dr. S. H. Glasgow, Welland; 10, Dr. E. E. King, Toronto; Dr. H. Bascom, Uxbridge; 13, Dr. S. C. Hillier, Bowmanville; 14, Dr. A. E. MacColl, Belleville; 15, Dr. W. Spankie, Wolfe Island; 16, Dr. J. Lane, Mallorytown; 17, Dr. M. O. Klotz, Ottawa.

Obituary Notes.—Dr. Peter W. Ray, a colored physician of Williamsburg, died on November 27 of heart disease, at the age of eighty-two years. He began his medical training in Bowdoin College, Me., and was graduated from Castleton College, Vt., in 1850. He was one of the founders of the Brooklyn College of Pharmacy and of the King's County Pharmaceutical Society, of which organization he was treasurer for twenty-three years.

Dr. Florence G. Emerson, the wife of Dr. Frank S. Emerson of Williamsburg, died of pneumonia on November 26. She was graduated from the Women's College of the New York Infirmary for Women and Children twelve years ago, and for the past ten years had been medical inspector for the Health Department in Brooklyn.

Dr. Percy Linwood Tantum of this city died on November 26, at the age of forty-five years. He was a son of the late Dr. John Roslyn Tantum of Bordentown, N. J. He was a graduate of the University of Pennsylvania, and received his medical degree from the Jefferson Medical College.

Dr. Glover Crane Arnold of this city died on November 29, at the age of fifty-seven years. Dr. Arnold was born in Charleston, S. C., and was graduated from the Bellevue Medical College in the class of 1873. He had for years been instructor of anatomy in Bellevue Medical College, and retired from active practice about four years ago.

Dr. Edward J. McDonough of this city died on November 29, at the age of forty-four years. He was graduated from the New York University Medical College in the class of 1887.

Dr. J. M. Miller of Springfield, O., died on November 26 as the result of septicemia from a carbuncle, at the age of seventy years. He was born in Nuremberg, Germany, but came to this country at the age of nineteen years, and received his medical degree from the New York Homeopathic College in 1873. Two years later he went to Springfield, where he had practised ever since. Dr. Harry T. Miller of Springfield is his son.

Dr. S. E. Solly of Colorado Springs, Col., died of tuberculosis at Asheville, N. C., on November 20, at the age of sixty-two years. Dr. Solly went to Manitou in 1875, but shortly afterward removed to Colorado Springs, where he devoted himself especially to the treatment of tuberculosis and to the study of climatology, on which latter subject he had written a book. Dr. Solly was an ex-president of the American Climatological Association, ex-president of the American Laryngological, Rhinological, and Otological Association, director of the National Association for the Study and Prevention of Tuberculosis, ex-president of the Colorado State Medical Society, and twice president of the El Paso County Medical Society.

Dr. James William Claiborne of Petersburg, Va., died suddenly on November 22 at the age of eighty-one years. He was born in Richmond, and after studying medicine at the Richmond College of Medicine, received his degree from the University of Pennsylvania. In 1849 he went to California, but returned at the time of the Civil War and served as division surgeon in Mahon's brigade. At the close of the war he resumed practice in Petersburg, and had been engaged in active work up to the time of his death.

Dr. R. W. Southgate of South Weymouth, died suddenly of heart failure on November 22, at the age of forty-six years. He was a native of Dedham and had practised for six years in Rockland. Two years ago he removed to South Weymouth.

THE THIRD HARVEY SOCIETY LECTURE.

The third regular lecture in the course given under the auspices of the Harvey Society was held at the Academy of Medicine on Saturday, November 17. The speaker, Professor W. T. Porter, of Harvard University, took for his subject "Vasomotor Reflexes." He began by saying that the physiological demonstration of a vasomotor mechanism inaugurated the really modern study of the physiology of the circulation innervation. Prior to 1851 it had been known that the blood-vessels possessed contractile walls and that they contracted when mechanically stimulated as by scraping. Furthermore the sympathetic nerves had been traced to the blood-vessels until lost in their finest ramifications.

Prof. Porter then discussed the landmarks of this physiological demonstration, beginning with the decisive demonstration in 1851 by Claude Bernard of the relation between the sympathetic nerves and the circulation. As all know, this was done by cutting the cervical sympathetic and finding that there was a more active circulation on the corresponding side of the face and the ear, with also an increased local temperature. In 1852 Brown-Séquard had found that, if the superior portion of the cut sympathetic was stimulated, the dilated vessels of the face and ear contracted, the parts supplied becoming paler and cooler. Bernard had obtained similar results independently. In 1856 Schiff had shown that destruction of parts of the spinal cord caused the same vascular dilatation and rise of temperature following section of the vasomotor nerves outside of the cord. Certain vasomotor nerves therefore take their origin in the cord. Subsequently it had been shown that these nerves left the cord by way of the anterior roots. Schiff had suggested the existence of vasodilator nerves and this had been demonstrated as a fact by Bernard's classic experiments on the chorda tympani. In 1876 Goltz, in Leipzig, had shown that the vasodilators were found in many special nerves; by cooling the tissues supplied and stimulating the peripheral end of a mixed nerve a vasodilatation was obtained, while on warming the tissues a constriction of the vessels resulted. In 1877 Bernstein had differentiated the two types of nerves by their rate of degeneration after section. Bowditch and Warren then showed that weak electric currents affected the dilators; stronger stimulation brought about constriction. The effect of stimulation had been shown to be prolonged on the dilators.

Continuing the historic development the speaker pointed out that the demonstration of vasoconstrictor and vasodilator fibers in the nerves had led to study of the centers controlling these. Goltz had shown that constrictor impulses proceeded from the spinal cord. Other investigators

then demonstrated the existence of reflex points, stimulation of which produced localized vasomotor changes in other tissues of the body. These were the well known experiments with various erectile organs. Owsjannikow and later Dittmar had worked to determine the position of the constrictor centers. The former had introduced the method of successive sections, dividing the bulb transversely at various levels, separating the medulla from the pons and sectioning downward. In this way he approached almost the calamus scriptorius without influencing blood pressure. When, however, the section fell nearer the cord a considerable and permanent fall in the blood pressure resulted. Sectioning from below and stimulating caudally gave similar results. These observations had established that the vasomotor area in the rabbit extends over about 4 millimeters of the bulb. It maintained the general vascular tone of the body. Dittmar had shown that the constrictor center was bilateral, lying in the columns on both sides of the median line.

There were vasomotor centers in the spinal cord also, the speaker continued. Goltz had shown that after division of the spinal nerves the vasoconstrictor impulses were only temporarily cut off. Constriction of the vessels gradually occurred. After some days the circulation had apparently returned to the normal condition. The same observer as well as others had also demonstrated the exercise of vasomotor centers in the dorsal and lumbar region.

Much less was known with regard to the dilator centers. As early as 1874 Goltz had shown the existence of such a center in the lower cord. It had also been found that stimulation of the central end of the sciatic nerve, after section of the spinal cord, might cause reflexly a dilatation of the vessels of the opposite limb. There was additional evidence pointing to the existence of a vasodilator center. Certainly it had been clearly established that vasomotor cells are present in the spinal cord.

The speaker next discussed the experiments of Goltz and Ewald, which showed that the vasomotor tonus maintained in the hind limbs by the spinal cord may be regained some days after destruction of the lower portion of the cord. Even after destruction of both bulbar and spinal centers the tonus of the blood-vessels could still be maintained. The same results had been arrived at by Gley and Sherrington. The sympathetic ganglia were therefore probably centers of reflex motor activity and could compensate in case of injury to the higher seats in the cord and bulb. Golz had also shown that removal of a section of the sciatic nerve is followed by a gradual return of the tonus of the vessels. This suggested that in the blood-vessels themselves there was a mechanism that regulated the tonus. With this résumé of the important epochs in the history of vasomotor reflexes the speaker came to the "modern period" of the past few years.

The work of Langley was cited as having enriched our present knowledge. This observer had found that the injection of nicotine into the circulation prevented, for a time, the passage of nerve impulses through the sympathetic cells. The fibers peripheral to the cells were not injured. Efferent stimulation of the lumbar cord (proximal to the sympathetic ganglia) resulted in no change in the tonus of the vessels ordinarily affected. The end result of these and the earlier studies had been the demonstration of three neurons as the connecting paths of the vasoconstrictor system: (1) The center near the calamus scriptorius with the axis cylinders running in lateral areas of the cord and communicating with (2) cells lying in the cord; the axis cylinders of the latter pass through the anterior roots to the sympathetic ganglia and end in contact with (3) the neurons whose axes extend to the muscle-endings in the walls of the blood-vessels.

The speaker referred to the attempts which had been made to find centers in the cortex of the brain for vasomotor regulation. Results of experiments on blood changes originated by cortical stimuli or injury were probably not associated with a localized center, but with reflexes afferent to the lower centers. The brain should be considered as a multiple organ or as a collection of numerous individual organs; the irritation of one part could reflexly excite another part, and thus give rise to a manifestation of function by the latter. Upon removal of the brain the vasomotor system no longer operated with the normal restraint. It had been shown, for example, that the blood pressure rose on removal of the cerebral hemispheres. In the Harvard laboratory it had been found that vasomotor effects were more easily produced by stimuli after the brain had been removed; the centers were mroe irritable. It was possible, the speaker said, that the remarkable reflexes (syncope, shock, etc.) resulting from ether administration were due to the excluding effect of the ether on these higher centers.

In asphyxia after the separation of the cord from the brain it had been noted that vasoconstriction was produced reflexly through the spinal centers, though the reaction time was slower in the case of the spinal cells than it was with the bulbar cells. Asher and Arnold had shown that when the spinal cord was destroyed, this constriction could not be reflexly effected through the cells in the sympathetic ganglia. This constituted a fundamental difference from the vasomotor neurons of the two larger centers.

The condition of the blood pressure could also be influenced independently of the vasomotor centers. This was illustrated by noting the effect of changes in the tonus of certain vessels with and without splanchnic section.

According to the speaker one of the problems at present yet unsolved was whether the vasomotor centers were truly automatic or whether the impulse discharges were regulated reflexly or perhaps by a summation of afferent stimuli. Another problem lay in the probability that afferent impulses reach a relatively small number of cells collected into groups. There was some evidence that the vasoconstrictor nerves supplying large areas were so divided that certain associated cells in the centers presided over local vascular areas. It was a further question whether or not a portion of the neurons in the vasomotor centers were set aside for the purpose of regulating blood pressure in the locality controlled by that group of cells. Another field of research, the speaker pointed out, was the relation of the vasomotor system to neuroses. Lapinski had recently, in *Virchow's Archiv* described researches from which he concluded that these disturbances were associated with changes in the neurons.

In conclusion, Prof. Porter gave some original considerations on the nature and cause of shock. The definition of shock was varied. There was a confusion of changes in the nervous system

with profound changes in the circulation. The speaker referred to the marked lowering of the blood pressure and weakening of the heart's action with pallor, etc., without actual mechanical injury to the nervous system; the anemia produced through lowering of the pressure was the immediate cause; no other fundamental functions were directly involved. Was shock due to the exhaustion of nerve cells or to some other cause? If due to exhaustion, afferent stimulation of the depressor nerve should give no further fall in the blood pressure. Experiments had shown that the same effect was produced if this were done; therefore there was no exhaustion. The speaker believed that shock depended upon an increased irritability. Afferent impulses under these circumstances were more effective than ordinarily. Strychnine produced a marked tendency to shock, while morphine, by depressing the irritability, exerted an antishock action.

Correspondence.

PANCREATIC FERMENTS IN THE TREATMENT OF CANCER AND THEIR ROLE IN PROPHYLAXIS.

To the Editor of the Medical Record:

Sir:—In the interests of medical science as well as in those of suffering humanity the following brief report of facts is made. A full and detailed report of cases with technique will be presented, later on, to the Academy of Medicine or directly in the pages of the Medical Record.

Two illustrative cases will be briefly mentioned: one a postoperative (two operations), and now inoperable cancer of the tongue; only a stump left. Recurrence characterized by all the distressing and loathsome symptoms of the disease. Treatment instituted in February, 1906. No treatment has been given since June, save ferment mouth washes. The patient is now living in good physical condition and keeping appointments with her dentist to have teeth, lost by ravages of the disease, replaced.

The second illustrative case is one of postoperative and inoperable cancer of the rectum, artificial anus. There were three operations, the last nine months since. At that time the mesenteric glands were found enlarged and indurated. Pain, which had persisted for two years necessitating the use of opiates, increased, and when the patient was first seen, six months since, the characteristics of progressive malignant disease were present. There were obstinate constipation, loss of appetite, strength, and flesh, pain, discharge, odor, sense of weight, bearing down, and a sinking feeling in the pelvis, with inability to stand or walk save for a few moments only, and very short distances. Length of life was estimated by the surgeon at one year, but the patient grew rapidly worse, leading the family physician to put it at from two to three months. From my own clinical experience in similar cases I felt that at least six months and possibly a year of life remained. The feeling in the rectum had varied during the interval between the first and last operation from that of a soft, flexible condition to at the last that of a pelvis in which there was old chronic induration. Masses began to develop in the rectum soon after the last operation. At the time of beginning treatment by pancreatic extract (Fairchild's), as originated by Dr. Beard of Edinburgh, rectal examination gave to the finger the sensation of passing through a narrow canal surrounded by hardened plaster-of Paris, save at the site of the original lesion, one and a half inches from the internal sphincter, where the tissues were, in addition, in a condition of cauliflower excrescence. The examining finger and the irrigating catheter penetrated at that time to a depth of about four inches.

Treatment has been thorough and vigorous. No clinical detail will be given until the cases are reported fully. Suffice it to say that at the present time a No. 12 catheter can be passed for purposes of irrigation, almost its entire length. Masses have been absorbed and eliminated; the rectal tissues are soft and flexible; the cauliflower condition has undergone tumefaction, degeneration, and elimination—in part, by its being thrown off per rectum, and indirectly by absorption. The patient walks, drives, does some professional work, eats most heartily, functions well, and has gained in physical strength and mental vigor.

While I do not report the case as cured, I must, in justice to Dr. Beard and his claims, state that the patient presents no clinical symptoms, objective evidence, or pathological findings of malignant disease.

The pathological findings of the discharges thrown off by rectum as the result of the treatment are reported as follows by Dr. W. M. Higgins:

"Specimen No. 6792. Examined for Dr. Cleaves. About ten c.c. of yellowish brown semifluid matter. Contains a number of flakes of mucopurulent material.

"Microscopical examination: Degenerated pus and epithelial cells mixed with red blood cells and mucus. Most of the cellular matter is degenerated leucocytes. The epithelial cells are few. Many of the cells are so broken down that it is impossible to classify them exactly. The red blood cells are quite numerous, many more than in the preceding specimen. Bacteria are negative. No tubercle bacilli.

"Diagnosis: Mucopurulent matter mixed with blood."

"Specimen No. 6793. Tissue. Dr. Cleaves. Gross appearance: Small piece of dark-gray tissue about three-eighths of an inch in diameter, moderately firm and friable. Received in formalin.

"Microscopical examination: The specimen shows a mass of glands similar to the glands of the rectal mucosa supported by strands of connective tissue. There is a large number of polynuclear leucocytes mixed with red blood cells scattered through the sections, especially in the fibrous trabeculæ. The tissue is somewhat degenerated, being stained with difficulty, but the outline of the glands and cell structure are quite distinct. There is no appearance of active proliferation of the epithelium, the acini being intact.

"Diagnosis: Adenoma with simple inflammation."

Summary.—This patient had adenocarcinoma of the rectum—a section made at the time of the original operation was examined microscopically, Massachusetts General Hospital—and is at present passing per rectum a discharge which has been repeatedly examined with the results above given. These, as will be seen, are absolutely negative so far as any cancerous condition is concerned. On the contrary, specimen 6793 is shown to be an absolutely benign adenoma.

Prophylaxis.—Adenoma of the intestinal canal calls at once for a bad prognosis. There are two theories as to adenomata: (1) That they are malignant *per se, i.e.* never originating as a benign tumor; (2) that they are benign from the first and take on malignancy as a result of some exciting cause—a breast injury, for example. The first theory fits in with Dr. Beard's theory of the trophoblastic or asexual nature of cancer.

From the character of the tissue thrown off in this rectal case it may be inferred that in the pancreatic ferments there is to be had an agent capable of keeping an adenoma from merging into an adenocarcinoma, and therefore they are to be regarded at least as prophylactic against the development of malignant disease. In any event, it behooves us, as physicians, to test this measure fully, and that speedily. Could the patients in these two illustrative cases have achieved the same results without mutilation what a blessing to them.

In conclusion I can do no better than to quote from a letter written to me by Dr. Beard: "In development all asexual structures, ganglion-cells, trophoblasts, etc., go on flourishing for a certain time, and then, *quite suddenly,* they commence to fade and degenerate. The death is a sudden one. There is no standing on the order of their going; they are *told to go—at once!*" He also authorizes the statement that "in neither case will the tumor ever recur." Upon that he will stake his scientific reputation.

Margaret A. Cleaves, M.D.

616 Madison Avenue, New York.

TWO CASES OF CANCER TREATED BY THE INJECTION OF PANCREATIC EXTRACT.

To the Editor of the Medical Record:

Sir:—I have been very much interested in Prof. Beard's studies and experiments along this line, though not having access to the full literature of the subject. The paper of Dr. Clarence C. Rice in the Medical Record of November 24, 1906, has prompted me to give two experiences in cases of undoubted cancer in which examination of particles and masses of the growths made the diagnosis certain. It is a fascinating field to cultivate—the possible treatment of malignant growths in this manner. In relating the following cases my object is simply to place the facts before

the reader, he to judge for himself of the remedial action of the injection on its merits:

Case I.—Mrs. B.; widow; aged 58 years. She has two children, 36 and 40 years of age, respectively. She is a strong, powerful woman, weighing from 150 to 160 pounds when in health. Two years ago she suffered from hemorrhoids and went to a specialist and had them injected, but without much, if any, relief. A year and a half later she went again to have the piles treated, but was sent back, as nothing could be done. She was examined by several competent surgeons, all pronouncing the growth cancer, and inoperable. On March 10 of this year she came to me for examination. I found a mass four inches wide, and of considerable length in the bowel extending from about three inches above the sphincter, up into the sigmoid portion of the gut. The growth was irregular, easily broken down, and of the usual cancerous odor. Masses passed with the stools, and at intervals with mucous and watery discharge. The patient had heard of the trypsin treatment and wished it used. The next day I began the treatment, injecting every other day first five, then ten, and finally twenty minims at a sitting, into the buttock. The injections were continued for six weeks, then at intervals of a week. The general health, which was very poor, improved remarkably; the flesh increased, the mucous discharges were augmented for about two weeks, while at the same time large masses of the diseased tissue sloughed off, pieces coming away nearly every day, and occasionally several times a day. The discharges then practically ceased (there having been none whatever for two weeks), and her health was so much improved that she took a trip to the Pacific Coast, staying most of the summer. She declared she felt better than she had in five years. She returned one week ago for further treatment, as some of the discharges were again troubling her. The growth is still there, but of reduced size.

Case II.—Mrs. R.; 36 years of age; married; no children; school teacher by profession. She has always been a frail, sallow, flabby, weakly woman. She suffers from excessive flooding at each monthly period and has pains to such an extent that she is forced to take morphine. She had been examined and a diagnosis was made of uterine cancer; this involved so much tissue, and was bound to the pelvic walls to such an extent as to preclude the thought of operation. The patient came to me three months ago for examination, and I found the condition as stated above, with an everted, raw, bleeding os. I used the injection direct into the growth and lower uterine tissue. Patient is irregular in attendance at treatment, coming as it happens. The present condition of the os is to all appearances healthy; at any rate; it is down to normal size, and the ulcerated surface has healed perfectly. Her condition generally has improved, though there is a hardened and apparently an agglutinated condition of the pelvic contents. This patient received but ten minims as the maximum dose, beginning as in the first case with five. The first patient took holadin capsules for a time, but thought they disturbed the stomach, and stopped. The second patient did not use them. The general health of this woman did not improve so markedly as that of the first, but the disease was influenced fully as well. F. B. Golley, M.D.

116 Grand Avenue, Milwaukee, Wis.

SURGICAL OPERATIONS IN TWO STAGES.

To the Editor of the Medical Record:

Sir:—Your comments on Professor Chetwood's suggestion that prostatectomy may in certain instances be done in two stages with greater safety than where a long and more radical operation is completed in a single séance, may well apply to other surgical procedures.

It is especially applicable to operations upon the brain, where a large area is to be exposed. The extensive horseshoe-shaped incision through the scalp and cutting through the skull always require very considerable time. In fully 50 per cent. of the operations of this character that I have performed within the last twenty years I have stopped the first procedures as soon as I had completed the cutting through the bone, packing the wound with sterilized gauze, and using moderate compression by bandage to arrest bleeding. Twenty-four or forty-eight hours later the operation is completed.

The results after this method have been much more satisfactory than in the early operations done in a single séance. With the modern methods of anesthesia, where ether narcosis is preceded by the inhalation of nitrous oxide gas, the majority of patients will not object to a repetition of the narcosis.

May I add here that the employment of Professor Dawbarn's method, confining a portion of the blood in the lower extremities by an Esmarch bandage thrown around the thigh at the groin, is of inestimable value in decreasing the hemorrhage from the head and neck.

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PRIORITY IN THE TWO-STAGE OPERATION FOR THE REMOVAL OF THE HYPERTROPHIED PROSTATE.

To the Editor of the Medical Record:

Sir:—In the Medical Record of November 24 there is an interesting editorial on the subject of "Prostatectomy in Two Stages," based upon a recent paper by Dr. Charles H. Chetwood. In calling attention to the great value of this procedure you give Dr. Chetwood credit for having originated the method. Kindly permit me to state a few facts in regard to this matter.

On the first day of February, 1905, before the New York State Medical Society, at its meeting in Albany, I read a paper on the enucleation of the prostate through a suprapubic incision. The paper was subsequently published in the *Annals of Surgery* for April of the same year. Two-stage prostatectomy is spoken of in this paper, and its advantages discussed for the reason that I had for a number of years given this operation preference in cases complicated by severe cystitis or by hemorrhage, and in exceptionally feeble individuals. I believed at the time that the method was original with me, and, while I have not fully examined the literature, I have not in casual reading come across any reference bearing upon the subject. Dr. Chetwood was present at the Albany meeting and read a paper there. One week later he performed the first step of the operation in the first case recorded in the paper which inspired your editorial.

This letter is not written with the idea of calling Dr. Chetwood to account, but merely to state facts. Dr. Chetwood may not have heard my paper, or, having heard it, he may have made subconscious note of the point in question. My first two-stage prostatectomy was performed at Mount Sinai Hospital in the autumn of 1896.

New York. Howard Lilienthal, M.D.

OUR LONDON LETTER.

(From Our Special Correspondent.)

RECTAL ALIMENTATION—[illegible] MICE—NOTES AND HEALTH—HYGIENE AND DISEASE TEACHING—COLLEGE OF SURGEONS' MEETING—OBITUARY NOTES.

London, November 17, 1906.

Rectal alimentation is a subject on which very diverse opinions are met with. Many doctors, influenced by the records of physiological research, have lost much of their faith in its value, though they continue to resort to it in certain cases. Others, basing their opinions on clinical observation, regard it as an invaluable resource. Seeing that it has kept its place for many generations, it is time that these divergencies disappeared. A step in this direction was taken by Dr. Seymour J. Sharkey in the Bradshaw lecture which he delivered at the Royal College of Physicians on the 6th inst. To show the extraordinary divergencies in the views of those who have investigated the subject, he quoted freely from French and German literature. Englishmen have not contributed much to it. While it is denied that proteids, starches, sugars, and fats can be supplied to the circulation by way of the bowel, everyone knows that water and certain salts may be absorbed. Many assert the enema owes its virtue to these alone, for they cannot deny its beneficial influence in certain cases—indeed, patients have been fed per rectum for a period of three weeks without losing much weight. It is generally agreed that the large intestine has little, if any, digestive power, but absorption certainly goes on in it. The colon receives the contents of the small intestine in a fluid form, and normally they become solid. With the water absorbed to produce this effect it is probable, if not certain, that some relics of earlier digestion are taken up. Clinically, pints of fluid are injected in the twenty-four hours and totally disappear. But though some food may thus pass in, it is not proved that sufficient can thus be introduced for the nourishment of the body. Peptones might be expected to be absorbed most easily, and it has been shown that peptones and albumoses can replace albumin in nutrition. They are taken up by the bowel, and most experimenters agree that they are not excreted unchanged by the kidney when thus given, though they are if injected into the blood. The peptonizing may be carried on in the bowel, but if one could rely on ready prepared pep-

tones they would be more convenient. Leube's injections (meat or fat with pancreas) demand much care in preparing. The extent to which fat can be utilized is not settled, and the same may be said as to milk. On the other hand, carbohydrates are generally acknowledged to be most valuable. Pure grape sugar is next to water the most easily absorbed.

Having considered these and other points, Dr. Sharkey referred to the confusion that results from not distinguishing between the clinical and experimental side. In the latter we read about the possibility of completely nourishing persons per rectum, but clinically that is not what is wanted. Rectal feeding generally is needed only for a time, and surgical progress tends to shorten the time and decrease the number of patients who formerly had to depend on it. Gastric ulcer is the most important, and Dr. Sharkey has found the treatment proposed by Dr. W. Pasteur most effectual, that is, perfect rest to the stomach for seven or ten days, or even more, the necessary water being given per rectum, ten ounces every four to six hours at a temperature of 100° F. Patients are comfortable and do not suffer from hunger or thirst, and the advantages over nutrient enemata are considerable. In some cases treated with nutrient injections, Dr. Sharkey gave water between them so as to make up the total fluid to about three pints. Analyses of matter returned from the bowel when washed out after nutrient enemata for twenty-four hours were made by Dr. Le Sueur, chemical lecturer at St. Thomas' Hospital, and the results compared with those of other observers. On the whole, Dr. Sharkey concludes that peptones, sugar, and powdered casein are the best constituents for use in rectal feeding.

We have heard a good deal of late about mice in connection with cancer, for the subject has been taken up by the ubiquitous reporter in the interest of certain newspapers. It is well, therefore, that the view commonly, perhaps too hastily, accepted concerning Jensen's mouse tumor should be subjected to searching criticism, and this it received in a paper by Mr. Roger Williams, read at the Pathological Society. He denied that this growth is a carcinoma, or even malignant, and was supported by Dr. Lazarus-Barlow. The tumor was first discovered by Morau in 1891, and subjected by him to experimental tests. Jensen followed him ten years later, repeated the tests, and popularized Morau's discoveries. Mr. Williams says the mistake of those who identified Jensen's tumor with cancer arose from trusting altogether to histological appearances—so often fallacious. Among previous errors thus arising, he named the contagious venereal tumors of dogs and coccidial disease of rabbit's liver. Of the former, specimens were shown at the Society a few years ago and accepted as cancer. Now that that fallacy was exploded it was disappointing to find experimentalists lapsing into the same error. A typical epithelial ingrowth and other quasimalignant appearances were common in many noncancerous conditions, *e.g.*, erosion of os uteri, blastomycetic dermatitis, etc. Jensen's tumor differs from cancer in being highly contagious, prone to set up epidemics, inoculable to other mice, and often spontaneously disappearing. In artificial transmission it will often change its type and lose its contagious property; it is circumscribed and can be enucleated; it does not impart cancerous properties to its host, nor does it cause cachexia. In all these crucial diagnostic points it differs from human cancer, and regarded as such it is a myth, a series of myths indicative only of the prepossession of the moment. Just now experimental cancer research was a medley of chaos, clouds, and tongues, giving neither light nor learning. Dr. Lazarus-Barlow agreed with the paper as to the nature of Jensen's tumor, and said the imitation of the carcinoma to sarcoma under transplantation by Ehrlich proved this. He had, however, not found it so easy as stated to infect mice with the growth.

On Monday there was a conference at the Medical Society of London to consider the noise problem of the metropolis. Sir Theodore Martin presided and made a bitter complaint as to the apathy of the authorities. He described himself as a victim to the misery inflicted by those "awful machines," motor omnibuses. A letter which he had written about them in July drew from the Chief Police Commissioner the most extraordinary admission for a public official. He admitted that he had the power to stop the juggernauts, but he had not stopped them, because he wanted, he said, an experiment made in the new method of locomotion. Sir Theodore said he could not open a window in his house owing to the stench of these vehicles; in bed he was badly shaken; double windows were no use; his ceilings were all cracking; many of his friends with long leases were being tortured and slowly killed by the Chief Commissioner's experiment. Sir Dyce Duckworth moved that the present excess of noise in the public thoroughfares is such as to cause disastrous consequences to the health and vitality of the people, and legislation is urgently needed. He was of opinion that no language could exaggerate the nuisance of the noise and stench which were grievously affecting the health of the community. Dr. John Anderson and Dr. Parkinson spoke to the same effect, and also of the terrible injury to property in the streets through which the cars ran. A second resolution carried unanimously, as was the first, called for legislation to prevent street shouting and music; to control all vehicles as to speed, and prohibit noisy traffic in residential streets from midnight to 5 A.M. Dr. Hyslop, in proposing this, said motor 'buses should run in underground drains, like other nuisances. Dr. A. Luff said he was sure many motor drivers were suffering from carbonic oxide poisoning. Dr. Radcliff Crocker urged that there should be a separate body charged with traffic regulation. The Chairman hoped that a carefully drawn bill would be submitted to Parliament dealing with every kind of noise nuisance.

A deputation headed by Sir T. Barlow and Sir V. Horsley, and containing a number of eminent doctors, waited on the Minister of Education on Monday in favor of teaching temperance and hygiene in elementary schools. Mr. Birrell professed sympathy, but gave little other encouragement. He said there was not a parent in the country who did not think he knew as much as most doctors about health and temperance, and, he added, they had some support in their opinion in the differences of doctors. If the bill before Parliament became law there would be medical inspection, and he expected benefit from the visits and advice of these inspectors. They must educate the public, and to do so must avoid technicalities and physiological jargon.

Yesterday the annual play at the College of Surgeons was duly performed for the twenty-second time. The president, Mr. H. T. Morris, placed the report before the meeting and made a brief statement as to some matters which had come before the Council. Then a resolution was proposed and carried unanimously affirming once more that members ought to be represented on the Council, which does not, as now constituted, represent the whole corporation. Other resolutions were passed, but what matters? The Council has persistently ignored the claim of members, and shows no sign of relenting.

Deputy-Surgeon-General Julius Wiles, late Rifle Brigade, died in the West London Hospital on Saturday as the result of a street accident. He was in his seventy-ninth year. He served with distinction in the Crimea, the China war of 1860, and the Ashantee war of 1874.

Department-Surgeon-General Sampson Roch, late of the Army Medical Staff, died on Friday, aged seventy-seven. He entered the service in 1854 and served through the Crimean campaign; received Turkish medal, clasps, etc. He retired in 1881, and afterwards acted as Medical Officer of Health for Cheltenham.

Dr. Lindsay Maclean died October 19, aged seventy-six. He retired from practice a few years ago. He edited *Echoes of Service* from the time he started it, thirty-five years ago, up to his death. It was devoted to medical missions in which Dr. Maclean was deeply interested. He was M.D. Edin. 1861.

Dr. Spencer T. Smyth, F.R.C.S., many years surgeon to Yarmouth Hospital, died October 26, aged eighty-six. In 1849 he was surgeon to the Cholera Hospital, and he held various appointments until his retirement some ten or eleven years ago.

Dr. R. Hamilton Bell, M.B. Cantab, etc., Physician to the Samaritan Free Hospital, the British Lying-in Hospital, etc., died on the 29th ult. of pneumonia, cut off at the age of thirty-five, after by his learning, talent, and energy he had established a position as one of the most rising obstetric authorities.

The following deaths are also announced: Dr. Lewis Smythe, on 29th ult., in his eighty-eighth year, M.D. of Glasgow 1840; Lieut.-Col. Robert Collins, late A.M.S., on the 31st ult., aged sixty-nine; Dr. John Roberts, on the 31st, at Salisbury, aged eighty-five; Dr. Douglas Kerr, at Bath, on November 14, aged forty-nine.

Remote Results of Conservative Operations on the Genital Organs of Women.—Loumeau, after making a careful study of this subject, has written a thesis in which he gives the opinions of the majority of surgeons of recent times. He concludes that when the adnexa of the two sides are removed, the uterus should be removed at the same time, since its presence is accountable for pain and bloody and leucorrheal discharges, and since its presence necessitates sometimes a secondary intervention. Partial resection and ignipuncture of the ovaries may be practised in cases of sclerocystic ovaritis, providing the tubes are healthy and permeable. When, during the course of an operation on the adnexa of one side, the tube and ovary of the opposite side are found to be affected, even if only slightly, it is not of advantage to preserve them. For a hypothetical pregnancy, one will often expose the patient to a bad therapeutic result and even to a second intervention. —*Journal de Médicine de Paris.*

Progress of Medical Science.

Boston Medical and Surgical Journal, November 22, 1906.

The Cause of So-called Habitual Lateral Curvature of the Spine.—This question is discussed in an elaborately illustrated paper by Max Böhm. The main thesis of the author is thus expressed: That developmental error of the human body in embryonic life which has its morphological expression in the so-called "numerical variation" of the spine, causes under certain circumstances those idiopathic lateral deformities of the spine which manifest themselves in the first half of the second decade of life, and which hitherto have been considered as affections acquired in postnatal life owing to purely functional or functional-osteopathic conditions. It seems to be the etiological factor of habitual lateral sclerosis, which may more rightfully be called delayed congenital sclerosis or sclerosis congenitalis tarda. The author goes on to show that congenital deformities need not show directly after birth. Deviations from the normal numerical divisions of the vertebræ may vary in a cranial or caudal direction. The female spine has a marked tendency to vary in a cranial, while the male spine has a marked tendency to vary in a caudal direction. In general the left side of the spine has a strong inclination to vary in a cranial and the right side in a caudal direction. Cranial and caudal variations in this sense refer to the fact that the regional boundaries of the spine are placed respectively higher or lower than normal.

Exploratory Puncture of the Pericardium.—Three cases are reported by G. C. Seare. In all the needle was first introduced in either the fifth or sixth left space in the neighborhood of the anterior axillary line, and then pushed inward toward the heart until fluid was obtained. In the first this site was chosen because a soft friction sound could be distinctly heard over the whole precordium, as if the heart was close to the anterior chest wall and therefore in danger of being wounded if the needle were inserted near the sternum. The selection of the same route in the second was chiefly determined by the success of the previous day. In the third there was added reason for adopting it, yet the author confesses to a feeling of greater confidence when introducing the needle at this point than when it is plunged in directly over the heart, which the experience of surgeons, who have found that the heart not infrequently lies close to the anterior chest wall, when the pericardium is opened to secure permanent drainage, has shown to be reasonable. Indications for operation are large pericardial effusions in spite of treatment, the failing strength of the patient in consequence of the effusion, and danger to life from extreme dyspnea. Pathologically the condition is analogous to that of pleural effusion, but not therapeutically, for we can limit pleural adhesions by restricting chest movement, but we cannot regulate the movements of the heart. The author claims that pericardial aspiration has been shown to be a reasonably safe procedure and in desperate cases it is less dangerous than to submit the patient to a much longer and severer operation, while the relief furnished, even if temporary, may place him in better condition to undergo more radical treatment. Even under the restricted use which has thus far been made of it, it has proved itself a valuable means of diagnosis, of palliation, and often of cure, but where aspiration fails or where the fluid repeatedly reaccumulates and the underlying condition is not incurable, or where there is a strong probability of pus, a permanent opening should be favorably considered.

New York Medical Journal, November 24, 1906.

The Prevention of Epididymitis.—W. T. Belfield reviews the various attempts which have been made to prevent the spread of gonorrheal infections to the epididymis and reports six successful personal cases. He thus describes his operative procedure. The vas deferens is held by the fingers against the skin of the scrotum near the median line, while a half curved needle is passed through the skin under the vas. A half-inch incision exposes the vas; a transverse or longitudinal incision into the vas opens its canal. The blunted needle (curved) of a hypodermic syringe can be passed into this minute canal, and a watery solution of any chosen agent injected; this liquid traverses the vas and ampulla, and enters the seminal vesicle. A fine silkworm gut suture is passed into the lumen of the canal at each extremity of the incision and out through the wall of the vas a quarter inch or more distant; one suture end is then passed through the skin and the two ends tied loosely outside. This suture, entering the lumen of the proximal end, serves to guide the needle when daily injections are to be made. When complete transverse section of the vas is made, the suture arrangement is identical with that described for the fistula formation. When the incision into the vas is longitudinal an additional suture (catgut) is passed through the edges and tied loosely above the skin. This operation is done under local anesthesia in the office, the patient walking away at its conclusion and losing no time from his vocation. When restoration of the canal is desired, the silkworm suture is tightened so as to appose the cut ends; when the wound is healed the suture is removed. Restoration of the lumen of an occluded vas is accomplished by excising the occluded portion and suturing the divided ends in the same way; the lumen of the vas is maintained during healing by the thread within it.

Etiology of Gastric Ulcer.—M. R. Baker does not believe that the etiological basis in this condition can be logically founded on the theories either of blood stasis or infection. The real etiology may be classified as remote and immediate. The former comprises all those influences which cause an oversecretion of hydrochloric acid by the cells in the gastric glands. These influences are numerous and varied, and perhaps cannot be definitely determined in a given case. The latter comprises the following elements: An excess in the amount of free HCl for an indefinite time in the gastric juice with resulting faulty digestion in the stomach and trauma of the pyloric mucosa due to the forcing of undigested masses through the narrow outlet for a long period of time. This combination of forces overcomes nature in a certain percentage of cases, and ulcer results. Anemic patients are particularly susceptible to those influences which produce oversecretion of hydrochloric acid in the gastric cells. Hyperchlorhydria often complicates this condition, and frequently terminates in gastric ulcer on account of the devitalized condition of the general system.

The Insanity of Adolescence.—An elaborate paper on this topic is presented by C. C. Beling, who appends statistics taken from the Morris Plains (N. J.) Asylum. He discusses the question under the headings of etiology, premonitory symptoms, clinical forms, and characteristics, prognosis, diagnosis, pathology, and treatment. Under the head of diagnosis he enumerates as the invariable and fundamental features of the disease, a loss of mental activity and of interest in general, the failure of every impulse to energy, and a weakness of judgment. All other symptoms are merely transitory features, though they may be prominent in individual cases. This statement refers particularly to delusions, hallucinations, and fluctuation of spirits. Definite recognition must be given to the factors of age, heredity, and the premonitory symptoms. One of the most important of these is a weakening of the power of attention, or it may be a disinclination or indifference on the part of the patient resulting in the nonexercise of attention. There may be more or less marked mental fatigue induced, which has the effect of producing a failure to accomplish work undertaken. This condition often leads sooner or later to an abandonment of all mental efforts, and a feeling of apathy which is often mistaken for depression. These symptoms are scarcely noticed by parents and friends, or even by the family physician, as being the precursors of mental disease. They are often obscured by superadded symptoms of a more or less neurasthenic character. Headaches are complained of, sleeplessness is frequently developed, and irritable and capricious moods are often manifested. Along with these symptoms there may be a degree of conduct and behavior so sensible and properly directed as to further mislead one as to the developing mental derangement. In discussing the matter of treatment the author says that all such cases should be sent to insane hospitals and kept under constant supervision. A certain amount of liberty may be allowed. Bone and fat should be built up by diet and the proper medicinal foods. Too much flesh and nitrogenous food should be avoided during growth and adolescence. A strict ban should be placed on alcohol and nervine stimulants. Orderliness and method must be insisted on in all things. The author feels that a particularly urgent duty rests on the family physician who gets to know all the foibles of the various members of the family; he is told collateral history of the family diseases, weaknesses, and habits. In fact, he learns much about the hereditary defects of all its branches; he observes the various tendencies of the

children, some of them exhibiting precocious proclivities, and others manifesting a retiring disposition. The matter of their schooling is often referred to him, and at various times he has the opportunity of learning as to the progress they have made in their studies. To him, therefore, must we look for interest and cooperation in our study of the insanities of adolescence.

A Hemolytic Agent Obtained from the Urine in Pernicious Anemia.—G. W. McCaskey reports one case occurring in a man of thirty-five years with a progressive debility and anemia of unknown origin and an indefinite beginning. The blood examination showed hemoglobin 25 per cent., red cells 950,000 per c.m., giving a color index of about 1.25. Megaloblasts were found and poikilocytosis was well marked. The white cells were 5,000 per c.m., and were histologically normal in the stained slide. The analysis of the urine gave the following results: Total quantity for twenty-four hours, 1,800 c.c., no albumin or sugar; total urea excretion, 20 grams; chlorides, 2 grams; no bile pigments, a trace of indican, a large amount of phenol, and a [illegible] demonstrated after distillation. Microscopical examination entirely negative. Purin bodies, 378 milligrams. This amount of purin bodies, exclusive of uric acid, was many times larger than the author had ever found before and suggested to him a possible relationship to the anemia. He made elaborate analyses to isolate these bodies, and his tests showed a slow destructive action on the blood cells of some body or bodies of the purin group. The precise nature of the chemical substance producing this effect cannot at the present time be demonstrated. All the author claims is that in the present case of typical pernicious anemia there was, first, an extraordinarily large amount of the xanthin bases, or at least of bodies resembling them by being precipitable by silver nitrate; and second, that these bodies removed from the urine of that case, and held in a one-twentieth of one per cent. solution made isotonic for blood exerted a positive but slow destructive effect *in vitro* on normal erythrocytes.

Journal of the American Medical Association, December 1, 1906.

Excision of Cancer of Head and Neck.—G. Crile says that cancer of the head and neck is fatal only by direct extension and not by secondary foci in distant organs, and points out the essentials of the surgical treatment in this region, especially the necessity of complete and thorough operation. He urges the necessity of guarding against infection by isolating the mouth and air passages and controlling hemorrhage by temporary closure of the external carotid, following the details as described by him in former articles, and which are here repeated. He calls attention to the fact that in his own operative cases, 132 in number, out of forty-eight traced patients operated on by him over three years ago and in which the radical block dissection was not made, nine are living, while of the twelve in whom this method was practised, also nine are still living, thus showing that the radical block method is four times as life saving as the less radical one. His general conclusions are "that, since the head and neck present an exposed field, cancer here, unlike that of the stomach, the intestines, or even the breast, may be recognized at its very beginning; that every case is at some time curable by complete excision; that the field of regional metastasis is exceptionally accessible; that cancer rarely penetrates the extraordinary lymphatic collar of the neck; that the growth tends here to remain localized; that by applying the same comprehensive block dissection as in the radical cure of breast cancer and by freely utilizing the modern researches of surgery the final outcome in cases of cancer of the neck and head should yield better results than that of almost any other portion of the body."

The Role of Nuclein.—G. W. McCaskey gives the results of the examination of 129 cases, with special reference to the uric acid and phosphorus excretion, both derivatives of the nucleins of the tissues, and discusses the part played by the latter in the animal economy. He mentions their resistance to the gastric fluids and remarks that if they are finally proved to be indigestible the only possible source of nucleoproteids would be a synthesis from other proteids, which is strongly suggested by certain facts, such as the increase in size of the salmon's ovary during its migration, apparently at the expense of its muscular tissues. It is also probable that the nucleoproteids of the blood serum aid in bacteriolysis, and that phagocytosis itself may be a phenomenon of the leucocyte. Thus their bactericidal effect may be a protective. The toxic character of some of the products of nuclein disintegration is fairly well established, and it is suspected on clinical grounds that some of these may be the cause of certain types of aseptic fever. Uric acid is not included in these toxic products, and the purin bodies are much more important from a clinical point of view than the uric-acid excretion itself. We should recollect as regards these points, too, he says, that there are individual as well as specific and generic variations in the output, in which the uric-acid output may be taken as an imperfect index. McCaskey notices especially the peculiarities of his findings in Bright's disease, the average excretion of uric acid being large, something over one gram, and the small amount in diabetes, a condition which is not readily explainable.

Lactic Acid in Metabolism.—A. R. Mandel and G. Lusk have studied the part played by lactic acid in general metabolism, experiments having been made on dogs. They find that dilactic acid given to a phlorizinized dog may be completely converted into dextrose, while l-lactic acid may be in part so converted, and may in part burn within the organism. As dextrose is the sugar of the blood, so d-lactic acid is the acid found, and is present in all normal tissues, and in increased quantities in arsenic and phosphorus poisoning. That lactic acid is produced from dextrose in metabolism is shown by the experiments of Embden, and it is evident that the sequence may be given as follows: Lactic acid, dextrose, glycogen, dextrose, lactic acid. The metabolic conditions of phosphorus poisoning as regards the part played by lactic acid are discussed. The paper is decidedly a technical one.

Multiple Neuromata of the Skin.—W. E. Darnall reports three cases in men aged nineteen, twenty-two, and thirty-three respectively. One was a clerk in an office, one a clothing cutter, and the third a farmer. In the first case two of the tumors were excised under cocaine anesthesia, and microscopical examination showed them to be neurofibromata. In the second case the patient died from exhaustion caused by a large and painful sarcoma in the course of the sciatic nerve. A hip-joint amputation was considered, but the patient succumbed before any radical treatment could be instituted. In the third case the tumors were present on the front of the left elbow, between the first and second toes of the right foot and on the legs. There was muscular weakness of arms and legs. In this case a diagnosis was made of neurofibromatosis, probably with pressure on the cord by tumor of the nerve roots.

Aperients and Peristalsis.—F. Pfaff and L. Nelson have observed the effects of drugs on the phenomena of peristalsis in the stomach and intestines, exposed in salt solution in such a way that respiration of the animals was not embarrassed. Well-fed cats and rabbits were used. In their preliminary observations of the normal action of the viscera under the stimulus of food, the most striking feature was complete irregularity in the action of the intestines; the so-called segmentation of intestinal contents, which in the last eight years has been described as a normal function of the intestinal peristalsis, was not once observed. They also repeated Cannon's experiments with the *x*-ray, in which, however, only the coarser movement could be followed, and not the finer working of the intestines. Both methods, they think, affected the normal condition of the animal to some extent; the saline solution may act as a stimulant to peristalsis, but the factor which produced the same results in the case of the *x*-ray could not be stated *a priori*. It is certain that some drugs used in both methods acted as aperients, whereas the same drugs were without effect in the control animals. Of the drugs used, croton oil, aloes, and podyophyllin increased markedly the peristalsis of the whole gastrointestinal tract. The stomach peristalsis was much intensified. With aloes, the peristaltic waves began high in the fundus of the stomach and made very deep constrictions. Their number was decreased, but in spite of this the organ emptied itself with great rapidity. Scammony, gamboge, elaterium, jalap, euonymin, and frangula increased very slightly the gastric peristalsis, but markedly that of the large and small intestines both in the salt solution and the *x*-ray experiments. With scammony and gamboge there was, besides increased peristalsis, diarrheic defecation, most marked in the *x*-ray experiments, which was lacking in the control animals. Cascara increased intestinal peristalsis, and also caused defecation under the *x*-ray. Tincture of rhubarb gave negative results, but the infusion increased peristalsis and caused nondiarrheic defecation. Strong solutions of senna increased peristalsis and

caused defecation with both *x*-ray and saline bath. Purgation gave no results, even when the dose was increased, so far as to cause nephritis. Of the salts, sodium sulphate increased peristalsis and caused watery discharges in all the animals experimented on, including the controls. Sodium phosphate acted similarly, but did not increase the gastric peristalsis so much. Sodium chloride was negative in small doses; in larger ones it caused a toxic gastritis. Nux vomica did not increase peristalsis in either rabbits or cats under the *x*-ray or in the saline solution, and control animals also gave negative results as regards defecation. The authors suggest a hope from these experiments that aloes, podophyllin, and the salts may be of value in atonic conditions of the stomach.

Insomnia.—J. T. Fisher discusses the treatment of insomnia by mental suggestion and reports three cases thus treated. Drugs and physical treatment, he thinks, are unreliable for a permanent cure; they may give temporary relief, but continued dependence on them has a bad effect, and tends to render the condition chronic. Even such simple matters as a hot foot bath or a warm drink on retiring, if continued, produce a bad habit and a dependence on them by the patient, which in a measure seems to lessen the effect of direct suggestion. In two of his cases this last was all that was used. The patients were told that they would sleep, and relieved of needless fears about their condition. In the third case posthypnotic suggestion was employed. Any treatment that leaves out this suggestive factor must be a failure. Most insomnias are distinctly of mental origin, and their successful treatment must be through avenues directed to overcoming false ideas and replacing fear with healthful quieting thought, together with the removal of irritants which directly or indirectly affect the minds of the patients.

The Journal of Nervous and Mental Disease, November, 1906.

Chronic Intussusception with Complete Inversion of the Appendix.—Case report by Jas. Struthers. The patient was a poorly-developed girl of five years, with attacks of abdominal pain and diarrhea dating back two months. Later vomiting was added, and protrusion of bowel from the anus. When admitted to the hospital immediate operation was considered advisable. Abdominal incision was made through the left rectus muscle near the middle line. The descending colon at once presented moderately distended by the intussusceptum but not apparently otherwise affected. Two fingers of one hand were passed into the pelvis and reached below the apex of the intussusceptum in the rectum without difficulty. By moderate pressure the intussusceptum was gradually made to travel back along the descending, transverse, and ascending colon, which were successively brought out at the wound, an unusually long ascending and descending mesocolon making this easy. No adhesions had formed between the opposing peritoneal surfaces, and the wall of the intestine was only slightly thickened in the region of the cecum and ascending colon. Reduction was consequently easy, and when the ileocecal junction and the cecum finally appeared it was thought that reduction was complete. On inspecting the cecum, however, it was found that there was apparently no appendix and the site where it should have arisen was marked by a dimple in the cecal wall. Palpation then revealed the fact that the appendix was projecting into the cecum. After one or two ineffectual attempts to express it, the cecum was packed round with gauze, [illegible] aspect, and the appendix at once found projecting into its interior and completely inverted. It was amputated at the base, the edges of the mucous membrane at its origin were united by a silk stitch, and the incision in the cecum was closed by a double row of stitches in the usual way. The abdominal wound was then closed, no drainage being employed. The child's condition at the end of the operation appeared little worse than at the beginning. There was no vomiting after the operation and the child made an excellent recovery. She was discharged from hospital in good health five weeks after admission.

Delayed Chloroform Poisoning.—Three fatal cases are reported by E. D. Telford and J. L. Falconer, who make a clinical study of the subject and find that there are more than seventy cases on record. Of this number but thirty cases are recorded with sufficient detail to permit of careful analysis. In the majority of these the symptoms have developed within thirty-six hours. The symptoms common to all of them are the following: Vomiting often severe and continuous is present, the vomitus resembling "beef tea" or "coffee grounds." The patient may be drowsy, listless, and apathetic, and this condition may deepen into coma before death. In some instances a preliminary stage of restless excitement or of delirium is seen. The pulse rate is quickened and toward the end is running and beyond count. The temperature is sometimes normal, sometimes very high just before death. Air hunger, acetone in the breath and urine, and some degree of cyanosis are usually present. In the majority of cases the symptoms terminate within three or four days from the administration of the anesthetic. On post-mortem examination the most striking and constant feature is the fatty degeneration of the liver. This degeneration of the liver is usually so marked that some writers have described the color of the organ as "canary yellow." Fatty degeneration is also seen in the heart, the kidneys, and often in the gastric mucosa, while in other cases these organs are the seat of cloudy degenerative changes. These represent the constant and essential lesions. Analysis of the entire group of cases suggests that the cause of death is analagous to that acting in acid intoxication. The authors formulate the following propositions: (1) Chloroform, ether, and ethyl chloride may produce a temporary aciduria; (2) so far as is shown by the ordinary routine clinical tests this aciduria occurs not invariably, but in the vast majority of cases; (3) ethyl chloride, either when given alone or when used as an introduction to chloroform, does not appear to differ from other anesthetics as regards the post-anesthetic aciduria; (4) there is no relation between the duration of the aciduria and the length of time during which the anesthetic is administered; (5) the acid bodies occur frequently in the urine of patients in apparently normal health and general anesthesia appears to have no special prejudicial action in these cases; and (6) the change of diet involved in preparation for a surgical procedure does not appear to produce aciduria.

British Medical Journal, November 17, 1906.

Abortion Following the Use of Diachylon.—F. W. Hope Robeson reports the case of a married woman who, believing herself pregnant, took some pills recommended by a neighbor. Two were taken night and morning for three days, with a three-days interval. She took the pills for about a fortnight, but on a few occasions increased the dose, taking three pills night and morning. When she began to take the pills she had amenorrhea; but after a fortnight had a miscarriage. This cleared up in a few days, and she remained regular for about six months, when she had a second miscarriage, the fetus in this instance being about two months old. When seen three months later she was found to be suffering from pelvic peritonitis. She stated that though she took diachylon pills as above [illegible] count of having seen her periods regularly, she was not aware that she was pregnant when the second miscarriage occurred. The typical blue line on the gums was still quite distinctly visible. The interest of the case is that the patient, after having taken diachylon for a fortnight, aborted twice, the second abortion occurring five months after having taken the pills.

Suprapubic Lithotomy with Enucleation of the Prostate in an Aged Patient: Recovery.—H. Littlewood's patient was ninety years of age. The case presented no unusual features. Chloroform was used and the bladder was opened without the employment of any distending fluid. The prostate was enucleated in one mass and with it a portion of the urethra; the resulting cavity and bladder were packed with long strips of gauze. The urine drained freely through the latter without any collecting on the bladder. Packing was removed in three days. The man made a good recovery from the operation. He lived two years, and finally died of uremic coma.

Self-Restraint in Surgery.—Basil Hall deplores the prevailing tendency to hasty operation. It arises from two widely different impulses. On the one hand the timid surgeon is driven to premature and perhaps unnecessary interference by his fears of the possibilities present or to come. He argues with much plausibility that it is "better to be on the safe side," and that the consequences of unnecessary operation are as nothing when compared with the possible dangers of delay. "When in doubt, operate," is the modern surgical axiom; and, while we must all agree that it is sound as a general rule, its influence insidiously extends beyond reasonable limits, and cannot, therefore, be too carefully guarded against. On the other hand, to the

surgeon of large experience, resort to operation comes easily, especially in hospital practice, where the possibility of catastrophe is reduced to a minimum by the facilities afforded for perfect technique. Probably he has arrived at that stage of his career when he has little opportunity to study ultimate results, and consequently he only infrequently realizes that immediate success has been obtained at the cost of more or less permanent disability. The present tendency is doubtless a reaction from the consequences of too long delay in operating in time past, but the pendulum has swung too far. One of the worst effects of this hasty resort to operation is the tendency to neglect clinical observation and shirk accurate diagnosis. The consequence is that the modern surgeon while shining brilliantly in the environment of an operative major case is often "stumped" in the presence of a nonoperative surgical lesion, and really does not know what to do. The case bores him and he hints that it ought to be transferred to a physician. He can operate so well that he is not properly careful in the saving of injured parts and their restoration to proper function. He forgets the old maxim that "amputation is the reproach of surgery." Operations are done because it is the fashion to do them. In the days—not so long past—when almost every wound suppurated, and when the rate of mortality after operation was high, the knife was often more, or more immediately, dangerous than the malady against which it might be directed. But now it has become so efficient and so safe a remedy that the temptation is strong to resort to it, to the neglect of other means which are slower, even if equally efficient, and even to facilitate diagnosis. To much of this no objection can be made. The objection is in the careless, hasty, inconsiderate or self-interested application.

Operative Treatment of Ulcer of the Stomach and Its Chief Complications.—This topic receives a thorough though condensed consideration by Mayo Robson. He advances the following arguments in favor of gastroenterostomy in the condition referred to: (1) Other ulcers present at the time of perforation will probably be cured by the operation. (2) If a second ulcer is on the point of perforation such perforation will probably be prevented, as tension and pressure on the stomach walls will be avoided. (3) After gastroenterostomy more secure healing of the sutured ulcer is likely to occur, and there will be less likelihood of the stitches giving way. (4) It diminishes the risk of hematemesis occurring after operation. (5) It enables saline aperients to be given shortly after operation, and so secures more efficient drainage of the peritoneal cavity. (6) It permits earlier feeding than would otherwise be the case had no gastroenterostomy been done. On all these accounts, therefore, it is important that, where the patient's condition will permit of it, the question of the performance of a gastroenterostomy should be seriously considered at the same time that the perforating gastric ulcer is closed. Concerning hemorrhage at the time of operation Robson notes that he has operated on four cases of acute hematemesis during the continuance of the bleeding. All the patients recovered and remain well. He has also operated between the attacks on twenty-two patients suffering from hematemesis due to ulcer; in all a gastroenterostomy was performed, with recovery from operation in twenty-one. In one case death occurred at the end of a week from exhaustion. He lays down the following propositions for guidance in case of this particular complication: (1) In a case of acute hematemesis from ulcer or erosion when the onset of bleeding is sudden and the previous history of ulcer is absent, medical and general means should be very thoroughly tried, and if the bleeding ceases as the result of rest and general treatment, there will be no cause to interfere surgically, though treatment should be carried out thoroughly and persistently until the ulcer has healed. (2) In case of recurrence of bleeding, or if the bleeding persists despite treatment, surgical measures are called for. (3) In case of bleeding from a chronic ulcer, whether the bleeding be slight or severe, surgical treatment is demanded, not only for the arrest of hemorrhage, but also for the curative treatment of the ulcer itself.

Berliner klinische Wochenschrift, November 12, 1906.

Plastic Induration of the Penis and Dupuytren's Contraction.—Neumark says that it has been frequently asserted that there is a connection between plastic induration of the penis and gout. He reports a case in which the penile affection was associated with contraction of the palmar fascia and considers that this combination affords corroboration of the view that Dupuytren's contraction is also a gouty manifestation. This patient had previously suffered from gouty attacks, although when seen by the author no gouty lesions were present.

The Value of Sahli's Desmoid Reaction.—Aldor reviews the work of those observers who have tested Sahli's desmoid method for determining the functional efficiency of the gastric juice, and then describes experiments of his own made with artificial gastric juice, and in twenty-five cases of different sorts of gastric disorders. He concludes that the desmoid reaction is not a reliable test for free hydrochloric acid, but that it is to be regarded as an index of the general proteolytic power of the stomach, and that it gives only very general information in regard to the digestive power of the gastric secretion. If the reaction is negative it is permissible only to draw the conclusion that there is something amiss with the gastric digestion, but it is not possible to particularize in regard to the details of the disorder. He also expresses the opinion that the universal resort to Sahli's method would in time lead to neglect of the macroscopical and microscopical examination of the gastric contents, which in view of the recent work on occult hemorrhage would be a decided step backward. He believes that Ewald's method will continue to be the most satisfactory for ordinary use, and that Sahli's procedure should be reserved for those cases in which it is undesirable to pass the stomach tube.

Munchener medizinische Wochenschrift, November 13, 1906.

The Aërobic Cultivation of So-called Obligate Anaërobes.—Harrass says that since Tarozzi and Wrzosek have shown that it is possible to cultivate in the presence of oxygen a number of organisms which have heretofore been considered as being strictly anaërobic, he has occupied himself with the question of devising a suitable medium for the routine cultivation of such bacteria. The before-mentioned authors obtained their results by adding to broth a small piece of a sterile animal organ, such as the liver, kidney, spleen, lymph gland, etc., the mere presence of these tissues appearing to be sufficient to enable growth to take place. The author describes the following as being a medium that is not difficult to prepare and which can be kept on hand indefinitely without impairment of its peculiar properties. One pound of fresh calf's liver or calf's brain is chopped up in a sausage machine and is added to a liter of water (sometimes together with 1 per cent. of peptone or glucose, though this is not necessary) is neutralized and is then, after shaking thoroughly, put into sterilized Erlenmeyer's flasks. These are plugged with cotton and sterilized in live steam for one and one-half to two hours. For use, about ten c.c. of the fluid and sediment are poured into a test tube and inoculated. In every case the author obtained by the use of this medium a vigorous growth of the anaërobic organisms. The effort to devise a solid culture medium to facilitate the identification of aërobes in mixtures has so far been unsuccessful, but the author hopes to be able to discover such a medium also.

Deutsche medizinische Wochenschrift, November 15, 1906.

Studies on the Permeability for Bacteria of the Gastrointestinal Canal.—Uffenheimer believes that it has not yet been demonstrated beyond all cavil that tubercle bacilli pass through the wall of the gastrointestinal tract and reach the lungs through the blood or lymphatic stream. The experiments of Schlossmann and Engel appeared to be conclusive, for in order to avoid any possibility of having the organisms travel directly to the lung from the pharynx these observers injected the tubercle bacilli into the stomach through a laparotomy wound instead of introducing them into the body through the mouth and esophagus. The author describes an extensive series of experiments by means of which he was able to show that a test organism such as *Bacillus prodigiosus* injected into the rectum very promptly makes its way into the stomach and into the lungs. If, however, the esophagus is divided between two ligatures before the bacterial enema is given the bacilli do not reach the lungs, and the author considers that this fact that minute particles can travel rapidly over mucous surfaces in a direction opposite to the peristaltic motion must be considered in all experiments of this sort. He therefore concludes that Schlossmann and Engel's results are fallacious since this possibility was not taken into account in their work.

Book Reviews.

KLINIK DER BRUSTKRANKHEITEN. Von Dr. med. ALFRED v. SOKOLOWSKI. In two volumes. Berlin: August Hirschwald, 1906.

THE present work originally appeared in Polish and has been translated by Fabian into German, thus presenting this excellent treatise to a larger audience. Sokolowski was for many years associated with the celebrated Dr. Brehmer at his sanatorium in Görbersdorf and then achieved prominence as a clinician in one of the largest hospitals in Warsaw. The book is intended to serve as a practical manual, and theoretical discussion is entirely omitted from the text except in so far as it is needed to illustrate the subject. Considerable space has therefore been given to etiology and clinical history, as well as to therapeutics and prophylaxis, while pathological anatomy, histology, bacteriology, and similar subjects are treated only [illegible].

The four parts of the book deal with diseases of the trachea and bronchi, the lungs, the diaphragm, and tuberculosis, and as the writer's clinical experience has been enormous, a large amount of original work and ideas are presented which cannot be reviewed within the limits of this note. Polish literature, which has thus far been largely inaccessible, is freely drawn upon and thus becomes available for the general reader; but the writer's bibliography also includes references to the medical literature of all other nations. An enormous amount of material is presented and no affections of the thorax, no matter how rare and infrequent, have been omitted. A word of commendation must also be said for the translator who has done his work, usually a thankless task, in a most worthy manner, and the text reads as if it had been originally written in German. The book is well printed, but contains no illustrations whatever, which in some respects is a relief. Monumental is the term which will best describe the work.

THE PHYSICIAN'S VISITING LIST (Lindsay & Blakiston's) for 1907. Fifty-sixth Year of Its Publication. Philadelphia: P. Blakiston's Son & Co.

THIS well-known visiting list makes its appearance promptly, so that those who have always used it may secure a new copy on hand when the new year begins, and those who are beginning and have to decide what visiting list to adopt may have time to examine the different lists in the market before making their choice. In addition to the blank leaves for the visiting list, memoranda, addresses, obstetric engagements, cash account, etc., there are the usual tables of doses, incompatibility, signs, poisoning, a complete table for calculating the period of uterogestation. The paper, printing, and binding are all excellent.

ATLAS OF CUTANEOUS MORBID HISTOLOGY. Consisting of Fifty-three Colored Figures on Twenty-four Plates, and Text. By Dr. MAX JOSEPH, Physician for Skin Diseases in Berlin, and J. B. VAN DEVENTER, Oberstabsarzt of the Netherlands East Indian Army in Batavia, Java. Chicago: W. T. Keener & Co., 1906.

THE interesting and important field of the minute pathology of skin lesions is usually treated in somewhat stepmotherly fashion, both in works on pathology and in those on skin diseases. The present collection of plates comprises a very instructive series of depictions of microscopical sections of most of the common disorders of the integument and should do much to compensate for this omission. The text is concise but adequate, and the drawings have been carefully drawn and well reproduced, so that the atlas should prove of much interest and practical value to any medical man who is ever called upon to treat cutaneous disorders—and what practitioner is not?

APPLIED BACTERIOLOGY. An Elementary Handbook for the Use of Students of Hygiene, Medical Officers of Health, and Analysts. Revised and Edited by CRESACRE G. MOOR, M.A., Cantab., F.I.C. Formerly Public Analyst for Exeter and Senior Demonstrator in Public Health, King's College, London. With the Cooperation of RICHARD TANNER HEWLETT, M.D., F.R.C.P., D.P.H., Professor of Bacteriology, King's College, London, Formerly Bacteriologist to the Lister Institute. Third Edition. New York: William Wood & Co., 1906.

BACTERIOLOGY is so progressive a science that it is difficult for the ordinary reader to keep pace with its advances. Almost each month sees some discovery or new point of view put forward that sometimes is only of academic interest, but more often has such far-reaching practical application that it behooves the practitioner who would do his duty by himself and his patients to let no opportunity pass by for keeping his knowledge abreast of the times. The present volume is well adapted to serve the purpose of restoring to the memory details once known, but since forgotten, and of providing a complete, well-written summary of the newer knowledge that is the fruit of the investigations of recent years. The text is succinct but clear and thoroughly modern, as is shown by the inclusion of topics of such recent development as the ultramicroscope of Siedentopf and the *Spirochæta pallida* in syphilis. The recent theories of immunity are concisely set forth, though the section on Ehrlich's complex hypothesis suffers somewhat through the absence of explanatory diagrams. The latter portion of the volume is devoted to the practically important subjects of disinfection and disinfectants, particularly as applied to the disinfection of houses, and the examination of milk and water. For all but the most advanced workers the volume may warmly be commended as a thoroughly satisfactory exposition of the bacteriology of to-day, particularly as it concerns the practitioner.

A TEXTBOOK OF GENITOURINARY DISEASES, Including Functional Sexual Disorders in Man. By Dr. LEOPOLD CASPER, Professor in the University of Berlin. Translated and Edited with Additions by CHARLES W. BONNEY, B.L., M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College, etc. Philadelphia: P. Blakiston's Son & Co., 1906.

THE translator and the publishers of this volume have rendered a commendable service to English-speaking readers in presenting an English version of Casper's textbook, which represents the technique of one who for some years has been regarded as an authority of the greatest eminence in his field. The German edition of this work is now several years old, and the translation has had the benefit of a revision by Dr. Casper, as well as of editorial annotations in brackets by Dr. Bonney.

The book deals purely with genitourinary diseases in man, and does not include a consideration of syphilis, nor of the genitourinary diseases of women. The arrangement of the subject-matter is practically the same as that which we are accustomed to find in the average American textbook on genitourinary diseases. The translation has been done accurately, yet with commendable freedom from Teutonic reminiscences, such as are but too frequently met with in modern medical translations.

The reviewer's test for a practical and up-to-date textbook on genitourinary diseases is: Does the book present a thorough, detailed, practical account of the modern treatment of gonorrhea and its complications, and does it deal in a practical, systematized, lucid, and well-illustrated manner with the treatment of stricture and with the minor operations which are performed by the general practitioner: meatotomy, circumcision, incision for paraphimosis, varicocele and hydrocele operations, and operations for bubo. A knowledge of the functional examination of the kidney is less essential to the general practitioner than the subjects enumerated. He who seeks the corresponding chapters in Casper's volume will be but partly satisfied. Very little is said of the newer silver salts in gonorrhea; the technique of injections and irrigations is but scantily covered. Under the heading of internal urethrotomy the Otis urethrotome, which almost everybody in this country uses, in strictures which permit its use, is not even mentioned; nor are the methods of urethrotomy with divulsion (Otis, Oberlaender, Kollmann *et al.* mentioned. The direct division of strictures in the anterior urethra with Kollmann's knife through the urethroscope is not described. The surgical treatment of hydrocele is fairly well covered, but in discussing operation for varicocele a paragraph is devoted to the subject (page 433) and but scant practical information given. The author is very saving with his words when speaking of circumcision (page 179), but the treatment of bubo is adequately covered (page 191). The chapters on functional disorders will be found very useful.

It has always puzzled the reviewer what such urethroscopic pictures as appear on pages 21-23 are supposed to convey to a reader who is unfamiliar with the appearance of the interior of the urethra, yet similar cuts are printed in many books. The cystoscopic photographs are reproduced after Nitze's beautiful plates, but have been much damaged by the reproduction. Many misprints have crept into the text, *e.g.*: "phosphorous (the drug) three times on pages 588-589; "Kraft-Ebing," page 551; bouillion, page 47; "loose their smoothness," page 47, etc.

A second edition of this translation will, no doubt, give an opportunity for the correction of these minor faults and for fuller editorial annotation. The authority of Casper is such that anything from his pen is bound to be popular; hence attention to these points is all the more desirable. The book as a whole is to be recommended to those who are not able to read German, and who want to have Casper's teachings in accessible form.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Two Hundred and Fourth Regular Meeting, held October 12, 1906.

THE PRESIDENT, DR. T. MITCHELL PRUDDEN, IN THE CHAIR.

The Effects of Radium Upon a Dark, Hairy Mole of the Face.—Dr. Robert Abbe presented a young girl with a congenital hairy mole of the left cheek. The lesion originally measured one inch by one and three-quarters. The lower half had been removed by four applications of radium, each lasting one hour, made at intervals of a few days last June. Under the applications of the radium, the long, soft mousy hair rapidly fell out, leaving an atrophic and comparatively insignificant scar. Dr. Abbe said he had shown the patient at this stage to demonstrate both the effects of the treatment and the original appearance of the lesion. In reply to a question, the speaker said that the effects of radium seemed to be most pronounced upon lesions of a hypertrophic character. Thus, he had seen a black, hairy mole, the size of an adult thumb nail, disappear after two applications. He had never tried it in simple hypertrichosis.

Dr. WALTER B. JAMES asked if any ultimate injurious effects had ever resulted from the use of radium? He referred to the observations of Dr. J. Nevins Hyde on the influence of sunlight on superficial epitheliomata, and as the relation between sunlight and radium was moderately close, he inquired whether any tendency to the development of such skin lesions had been shown after applications of the latter agent. He also asked what Dr. Abbe's further experience had been in the treatment of exophthalmic goiter by incision and the insertion of the radium tube.

Dr. ABBE said he had never seen the slightest tendency toward the formation of epitheliomata or other ill-effects from the applications of radium. For the past three years he had carried on his own arm a perfectly healthy radium scar. In reply to Dr. James' question as to his further experience with radium in exophthalmic goiter, Dr. Abbe said that in the first case in which he had resorted to the method, in which the tumor had been an enormous one, the patient had remained perfectly well. The other cases had acted variously. Out of nine in which the method had been employed three had been relieved of their symptoms. The others had improved to some extent. The method should not be regarded as a cure-all in these cases, and the improvement in the symptoms could only be attributed to the diminution in the size of the goiter, which in turn was due to the retrograde effect of the radium upon hypertrophic structures. In one instance this destruction of the tissues was so active and extensive that the patient developed a temperature of 106°. Extensive sloughing of the gland occurred, but the final outcome of the case was favorable.

The Attempt to Use Fresh Air in the Treatment of Other Diseases than Tuberculosis, and Its Physiological Foundation.—Dr. WALTER B. JAMES said he was convinced of the fact that an abundance of fresh air, or, better still, the outdoor treatment, was beneficial not only in pulmonary tuberculosis, tuberculosis of the joints, etc., but also in many other conditions, both acute and chronic. The question of what constituted good and bad air, he said, had been under discussion for a long time, and was still unsettled. The temperature, humidity, and stillness of the air had to be taken into consideration. Among various diseases in which Dr. James had found the outdoor treatment beneficial were puerperal fever, typhoid fever, in which to a certain extent it had taken the place of cold baths, and cerebrospinal meningitis, in which it had a markedly beneficial effect upon the nervous symptoms. This quieting effect of the outdoor treatment had also been noted by the late Dr. Dent and others in the treatment of various forms of insanity. Furthermore, it had come to be regarded as a valuable adjunct in neurasthenia and in many chronic disorders of nutrition, particularly in chronic gastric derangements and in rachitis.

Dr. BEVERLEY ROBINSON said that while he had always endeavored to give his patients as much fresh air as was agreeable and practicable under the conditions in which they lived, he thought the question should be considered from an individual standpoint. There were some patients to whom an unlimited supply of fresh air was disagreeable; there were others who regretted that the windows of the sick chamber were not larger and more numerous. The practical conclusion that he had drawn from his experience and observations was that the quantity of fresh air should be regulated, to a certain extent, according to the susceptibility of the individual, and that a superabundance of fresh air should not be regarded as a cure-all, or even a necessity in the treatment of disease. Of course all agreed that the sick room should be thoroughly ventilated, especially in febrile and pulmonary conditions. Certain patients apparently required an extraordinary amount of covering; others seemed to be comfortable without any covering at all. No hard and fast rule could be laid down in this respect. The pendulum seemed to swing to one extreme, and then to the other. The question was analogous to that of feeding in typhoid fever. It was not very long ago that milk was considered the only form of nourishment that a typhoid fever patient should receive, and the Brand method of reducing the temperature was almost universally in vogue. To-day, in Bellevue Hospital and other institutions, the typhoid fever patients enjoyed the benefit of a considerably more elaborate diet list, and were subjected to fewer cold baths.

Dr. JOSEPH D. BRYANT, after referring to the reluctance he had met with on the part of the house staff to get hospital patients out on the veranda for a certain number of hours each day, said he had become firmly convinced of the fact that surgical as well as medical conditions were improved by fresh air, freely bestowed and properly regulated. He recalled in this connection cases of long-delayed union of the femur in which the fractured ends promptly united under the outdoor treatment. In cases of wounds of the soft parts that were doing badly he had also observed the healing accelerated by exposing the patients to a plentiful supply of fresh air, which unfavorable state might not have happened if anticipated by out-of-door treatment from the outset. The same observation had been made by Halsted and others, and the outdoor treatment of surgical cases in all sorts of weather was long ago in vogue at the Johns Hopkins Hospital. Dr. Bryant said he was scarcely inclined to agree with Dr. James, that a draught was desirable, even in the sick room, and he personally had very distinct recollections of suffering from an incautious exposure to unchecked currents of air.

Dr. EDWARD G. JANEWAY said there was no doubt of the fact that the outdoor treatment of insane patients had reduced the necessity for restraint and drugs. There was also no doubt of the fact that many sick persons were undoubtedly benefited by the outdoor treatment, and there were even many well persons who preferred to sleep out of doors. Personally, Dr. Janeway said he preferred the comforts of a room and bed. The advocacy of a superabundance of fresh air in the treatment of disease, the speaker said, was by no means of recent origin, and he recalled that many years ago, during an epidemic of typhus fever in Bellevue Hospital, many of the patients improved rapidly under the influence of fresh air. In speaking of draughts, Dr. Janeway said there was a popular prejudice against them which it would be difficult to overcome.

Dr. SAMUEL W. LAMBERT, in speaking of the outdoor treatment of puerperal septicemia, to which Dr. James had alluded, said that when the present Lying-in Hospital was located in the old Hamilton Fish house many of the patients were kept out on the veranda and in the garden in

all kinds of weather, and under those conditions an improvement was usually observed even in the severest forms of the disease. In the new building which the society had erected the patients were kept on the roof, and an equal, though no greater, improvement in their condition had been noted. It was the fresh air, apparently, rather than the elevation or the environment, to which the improvement was to be attributed. The speaker agreed with Dr. Janeway that there was a very strong popular prejudice against draughts, and if a sick person was exposed to a draught and experienced a relapse the patient's friends would be fairly certain to attribute it to that cause. The same was true of a rather free diet in typhoid fever. It was very difficult to overcome popular prejudice against both of these agents in cases that turned out badly.

Dr. Robert Abbe thought the outdoor treatment of patients involved two principles: one was the refrigeration of the body, and the other was the free supply of fresh air. By placing a fever patient in the open air we exposed an enormous capillary circulation and drove the blood into the internal organs, where the disease was presumably producing its ravages. The blood stasis of the internal organs thus caused was somewhat analogous to the Bier treatment of tuberculous joints by producing a hyperemic condition of the diseased parts. The increased blood supply undoubtedly gave rise to a more active leucocytosis, and the phagocytic action that followed hastened the normal processes of regeneration. If that theory was true, then it was reasonable to suppose that diverting the circulation from the capillaries into the internal parts would be followed by beneficial results. On the other hand, the benefit resulting from the open-air treatment might be attributable to the increased supply of oxygen.

Dr. John Winters Brannan said that while he would not attempt any scientific explanation of the good effects of a plentiful supply of fresh air, he entertained no doubt of the value of this method of treatment. His own enthusiasm regarding it, which began some years ago, had been much increased by his observations of the cases of tuberculous bone and joint diseases among the children at Sea Breeze, Long Island. Arguing from that standpoint, he had come to the conclusion that if the open-air treatment increased the vital resistance of patients who were suffering from tuberculosis, it was also indicated in other conditions where the vitality of the patient was impaired. At the new Harlem Hospital balcony accommodations had been provided for every patient, and according to the plans of the new Bellevue Hospital each bed had been assigned thirty-four square feet of balcony surface, in addition to the roof garden. In order to provide these outdoor accommodations, Dr. Brannan said, he had some difficulty in overcoming the objections of the architects, who feared that the large balconies would interfere with the architectural beauty of the buildings. At the Gouverneur Hospital, where new balconies had been provided, patients in the acute stage of typhoid fever were kept by Dr. Francis Huber on the balcony all day long. On one balcony he had seen four bed patients with temperatures as high as 103° lying with the sun upon their faces, they having asked to have the awnings raised. On the grounds of the old Fordham Hospital they all said they liked it; a cottage tent had been used for the treatment of the pneumonia patients, and, according to Dr. Dunn, the attending physician, thirty cases had been treated there with much better results than had previously been obtained in the wards. During the following autumn the tent was used for typhoid fever patients, again with excellent results. The attending physicians reported that the patients did not complain of draughts, and never took "cold." In addition to the pneumonia and typhoid fever patients, the tent was also used for the treatment of some cases of influenza, heart disease, and bronchitis.

In speaking of the benefit of the outdoor treatment in surgical conditions, Dr. Brannan said he had recently visited the Corey Hill Hospital, at Brookline, Mass., and the Massachusetts General Hospital, and at both of these institutions the value of an abundance of fresh air as an adjunct in the healing of wounds was fully appreciated. In the latter hospital he was told that surgical patients were moved out on to the open balconies on the fourth day after operation.

Dr. W. Gilman Thompson said the subject brought up for discussion by Dr. James was extremely timely, as so many large hospital projects were under way at the present time. He called attention to the importance of keeping the heating and ventilating systems of hospitals separate, and he referred to one hospital where the chief aim had been to keep the temperature of the wards at 70° F. irrespective of freshness of the air. In order to accomplish this the windows were constructed with lock and key, so that the nurses could not open them, and the air in the rooms was never adequately changed. Not long ago, Dr. Thompson said, we thought all was known about the composition of the air. Since then, however, we had learned that it possessed certain additional chemical and physical properties which influenced the human organism, and which could not be safely disregarded in studying the question of ventilation. In the particular hospital to which he had referred, for example, the only consideration seemed to be the uniform temperature, without regard to the number of patients or attendants or students in the wards, who were polluting the air. The old Bellevue Hospital was probably the most rationally constructed institution of its kind in the city from the standpoint of our present knowledge of the subject. The wards were all provided with good-sized balconies and grounds surrounding them, and it was the only properly ventilated hospital, because it had no so-called "system" of ventilation, and had an independent heating apparatus. Dr. Thompson said that during the past summer he had visited a number of the large modern hospitals in Europe, and had become impressed with the extent with which the fresh air idea had taken hold of our confrères abroad. Most of the new hospitals were built on the pavilion plan, not over two stories high, with plenty of ground surrounding them. The wards were ventilated and heated by systems independent of each other. Many of the windows were of the double casement type, so that they could be opened from the top.

Dr. William M. Polk said he could add his testimony to what had already been said in regard to the efficacy of the fresh-air treatment in patients who had just undergone an operation. During the past year he had been in the habit of placing his post-surgical cases in a room with two large windows, which were kept widely open all the time, irrespective of the weather. The effects of this innovation in the after-treatment of these cases had been excellent.

Dr. James, in closing the discussion, said he fully agreed with Dr. Robinson in regard to the inadvisability of following a uniform method of treatment, and he did not wish to be understood as advocating the rather extreme measures that he had referred to in his paper. They were to a certain extent experimental in his efforts to ascertain whether extreme changes in environment would do good or harm. The speaker said he had for some time urgently advocated the abolition of many of the routine or uniform measures that had been so long in vogue in the treatment of hospital cases, and which he regarded as a great blot on our hospital system. A good many years ago, when a man was taken ill, nothing made any difference, providing he had the right doctor and the right drug. Now we thought everything else made a difference, and the choice of a doctor was comparatively unimportant, providing the latter did his patient no harm. In the hospital we still went on using exactly the same environment for the various kinds of diseases, without reference to the individual indications of each case. In no hospital, so far as he knew, had any rational

or scientific attempt been made to adjust the environment to the needs of the individual patient.

Two Hundred and Fifth Regular Meeting, Held on Friday, November 2, 1906.

The President, Dr. Robert Abbe, in the Chair.

Some Notes on Aix les Bains.—Dr. John Winters Brannan read this paper.

Infection by Tænia Nana, with Specimens.—By Dr. Samuel W. Lambert. The patient was a carpenter, twenty-five years old, a native of Germany, and a resident of Brooklyn for several years. His father died of tuberculosis; otherwise, his family history was negative. His previous history was unimportant. He denied venereal infection; was moderately alcoholic. About two years ago he began to suffer with heaviness in the stomach, which was a constant symptom and apparently had no relation to the taking of food. There was belching of gas after meals, with dizziness, and occasional pain in the back. He was very nervous, and complained of general weakness. There was no history of vomiting. About a year ago he developed a cough, with yellowish-white expectoration; no hemoptysis; no night sweats. His appetite was good; bowels regular. He felt worse in the morning. His heart and lungs were normal. The patient first came under observation at the Vanderbilt Clinic on September 20, 1906. An examination of the stomach contents after a test meal showed hyperacidity, but the physical examination was otherwise negative. Various remedies to control the gastric condition were tried, but on October 2 the patient reported that he was no better, he complained of great hunger, and said that he had observed "white flakes" in his stools. Microscopical examination of his feces showed a large number of ova which were identified as those of tænia nana. He was given a two-drachm dose of male fern, and a subsequent cathartic brought away several stools from which several hundred specimens of tænia nana with numerous ova were recovered. Dr. Lambert said that infection by the tænia nana was comparatively rare. In Bulletin No. 18 of the Hygienic Laboratory, issued by Dr. B. H. Ransom in 1904, one hundred cases in man were collected; of these about twenty-five occurred in the United States, all in the South. The infection was first observed in rats, by Dujardin, in 1845, and six years later in man. It is believed that this tænia is comparatively common in children, especially in Italy. The principal symptoms are diarrhea, gastrointestinal pain, headache, nervousness, and even epileptiform seizures. The symptoms are usually slight, and the diagnosis must usually be made by finding the eggs in the feces. The cure consists in the usual tæniacide male fern, though repeated treatments are sometimes necessary to insure a cure. The prophylaxis consists in excluding the excreta of rats and mice from the food. The infection with these parasites is usually direct without an intermediate host, although it is not certain that some insect may not serve in this capacity. In the regular course of events the egg hatches and forms a cercocyst in the intestinal villi which later breaks through and enters the gut to become an adult worm. The habitat of the tænia nana is the ileum and several thousand such worms may inhabit the same intestinal tract. The worm and the egg are quite characteristic; the egg has circumferential striations in its outer zone, while the ova of the usual tape worms have radial striations. The adult worm is about three-eighths of an inch long and its head has a central group of hooklets and four surrounding suckers. In reply to a question, Dr. Lambert said there was no increase in the proportion of eosinophile cells in the case which he had reported.

A Case of Bronchitis, with Remarks on Cough and the Perforated Zinc Inhaler.—By Dr. Beverley Robinson. (See page 900.)

Dr. Brannan said that a few years ago his attention had been called to the perforated zinc inhaler by Dr. Kinnicutt, and he had given it a trial in a number of cases, with very satisfactory results. The inhaling fluid he employed was a mixture which contained, among other things, the compound tincture of iodine. The speaker said he did not know whether creosote had any specific effect upon the class of cases mentioned by Dr. Robinson, but the inhalations certainly seemed to relieve the cough.

Dr. James said that Dr. Robinson's paper was particularly timely, as the type of acute pulmonary trouble to which he had called attention was unusually frequent at this time. In quite a number of cases that had come under his observation recently it was difficult to decide whether the patient had a bronchopneumonia or a simple bronchitis, and the relief of the symptoms was especially indicated. The speaker said he had an impression that the mixture mentioned by Dr. Robinson was of distinct value in this particular class of cases.

Dr. Charles L. Dana said he could recall the time when the inhaler described by Dr. Robinson was used in the wards of Bellevue Hospital with good results in a symptomatic way.

A Case of Supposed Glioma of the Eyeball.—Reported by Dr. Charles Stedman Bull, with specimen. The patient was a girl two years old, who came under observation on November 20, 1905. She was well developed for her age, but anemic, with a pasty complexion, which was in strong contrast to her black hair and eyes, and well-marked eyebrows. The child had always been well until the latter part of September, 1905, when she had an illness lasting about three weeks, accompanied by high fever, and at times by spasmodic contractions of all four extremities. During her recovery the mother noticed that the left eye was red and inflamed, and that a yellow reflex came from the pupil. On examination there was a marked ciliary injection, and a very shallow anterior chamber, the iris bulging toward the cornea, especially at the periphery. The pupil was moderately dilated, and the iris very sluggish. The tension was T-1. The lens was clear, and the fundus was best seen with a sph. + D.12. There was a distinct yellowish reflex from the fundus, over which vessels could be seen passing without the aid of the ophthalmoscope, by oblique illumination. The ophthalmoscopic picture was not entirely that of glioma, though strongly resembling it. The history of the child's illness during the previous September pointed to a possible spinal meningitis. As the eye was painful and showed all the signs of intraocular inflammation, and as the child was distinctly suffering, the parents were advised to consent to the enucleation of the eye, to which they agreed. The diagnosis was somewhat uncertain, and rested between a glioma in the stage of active progression and a suppurative iridochoroiditis due to spinal meningitis. The operation was done on December 20, 1905, and the eye was handed to Dr. George S. Dixon, the pathologist of the New York Eye and Ear Infirmary, who reported as follows: The globe measured 21x21x21mm.; the clear cornea 10.5x11.5mm. When it was divided no anterior chamber was apparent. The depth of the posterior chamber was increased. A cyclitic membrane was present. Projecting from the posterior surface of the lens into the vitreous was a pinkish-white mass, somewhat pyramidal in form, which measured 3 mm. at the base, and 4 mm. in length. Its base corresponded to the middle of the posterior surface of the lens. A similar mass was seen at the disc, projecting toward the anterior pole for a distance of 3 mm. The base of the mass measured 2.5 mm. There was no apparent detachment of the retina. Sections showed the corneal epithelium intact; excepting in one place, and that was probably eroded mechanically, as no infiltration was present. Bowman's membrane was well marked, and the cornea propria normal, excepting that the corpuscles showed a little more distinctly than usual.

Descemet's membrane was practically intact. The iris was atrophied, but contained a comparatively large number of blood-vessels. A synechia anterior, in close contact with Descemet's membrane, was found throughout its extent, with the exception of a small space near the angle. The canal of Schlemm was closed. The posterior chamber was increased in depth, but contained no exudate. The ciliary body was partially disorganized and hyperemic, particularly toward the pars ciliaris retinæ. There was no edema. Many of the ciliary processes were complete, but some were disorganized and passed toward the lens as dense pigmented masses. In the zonular region quite a number of adventitious fibers similar to the suspensory ligament were found, and these carried a number of blood-vessels. The lens itself was not particularly well preserved, but it presented no disorganization excepting near the zonula posteriorly, immediately beneath the capsule. A few of the fibers here showed numerous small vacuoles. The posterior portion of the capsule, especially near the center, was corrugated and thickened. The mass of tissue which was attached to the posterior surface of the lens appeared to be a portion of the dense cyclitic membrane, but it was peculiar in that, in addition to connective tissue and hyaline material, it presented elements of the retina in well-marked folds about the base next the lens, although there was no indication that the retina had been detached to the extent of allowing it to lodge there. The choroid was in position, but atrophied, and small subchoroidal hemorrhages were noted. The nerve was moderately atrophied, and a few small hemorrhages were found in the arachnoid portion of the sheath. The mass at the disc was composed of naked nerve fibers and connective tissue continued forward from the optic nerve, and it enveloped a prolongation of the arteria centralis retinæ. These fibers were surrounded by a double tubular layer of retina. The general macroscopical appearance of the eye at once suggested an error in development, which Dr. Dixon thought was proven by the microscopical findings, although the findings at the disc pointed somewhat to retinitis proliferans. The tissue behind the lens was of such a character as to lead one to suspect glioma on examination before enucleation, but sections dispelled this at once. Macroscopically, there was little indication of retinal detachment in any portion of the globe, and not sufficient to account for its presence at the base of the growth at the posterior portion of the lens.

Dr. Dixon said he was of the opinion that the condition present was primarily and principally due to faulty development, as there was no indication of a very recent or active inflammation in any part of the eye at the time of enucleation. While the illness of the child of which the mother gave a meager history may have resulted in intraocular changes, he thought it much more probable that intrauterine iridocyclitis occurred, which might have interfered with development on the one hand and proper retrogression on the other.

The Action of Quinine on the Auditory Nerve.—Dundas Grant declares that quinine causes congestion of the labyrinth, and also notes that the tinnitus caused by this drug can be quieted by compression on the vertebral arteries. This has the effect of diminishing the pressure in the basilar artery, its branches in the internal auditories, and thereby in the vessels of the labyrinth. This compression may be made in the suboccipital region, the thumb and finger of one hand being placed in the hollows behind the mastoid process, while counter pressure is made by the other hand on the forehead. As the arteries lie under the complexus muscle the pressure must be rather firm. If such pressure checks pulsating noises or vertiginous feelings the inference is that these are due to congestion in regions supplied by the branches of the basilar artery, probably the internal ear.—*Journal of Laryngology.*

NEW YORK ACADEMY OF MEDICINE.

SECTION ON DERMATOLOGY.

Stated Meeting, Held October 2, 1906.

DR. A. R. ROBINSON IN THE CHAIR.

Lichen Planus Pemphigoides.—Dr. LAPOWSKI reported this case, occurring in the person of a man, 35 years old, well built and well nourished. Personal and family history negative. Duration of present disease at least ten years. There had been intervals of improvement, but since the trouble began the body had never been entirely free from the lesions. No history of how the process began was obtainable. The patient was first seen early in October, 1905, and the following condition observed: The extensor and flexor surface of both legs were covered with pea to quarter-dollar sized patches of violaceous color and soft consistency. The patches were somewhat raised above the level of the normal skin. Their surfaces were smooth and shiny, with thin adherent scales, like those of lupus erythematosus of the face. In the center of some of the smaller patches there was a bloody crust, while others presented an excoriated center, from which a serous fluid oozed. In either case, the border was slightly infiltrated. All other parts of the body, including the mucous membranes, were normal. In all patches, but especially in the larger ones, the redness disappeared on pressure, leaving a distinct brownish border, corresponding with the size of the patch. The patient complained of intense itching, especially at night. He told of a peculiar sensation of localized tingling, and said that when he scratched such an area a vesicle appeared. I had no opportunity of verifying the statement. A plaster mull of mercury and phenol was applied to the patches for twenty-four hours. When this was removed the patches showed generally three distinct zones: (1) an external dark violaceous border, slightly raised and infiltrated; (2) an inner zone of moist, denuded skin, and (3) an atrophied pale brown center. A week later the centers of some of the patches, both large and small, were occupied by tense serous vesicles and bullæ, from the size of a pinhead to that of a pea. On opening a bulla a serous liquid exuded, and on removing the top a moist reddish surface came to view. Bullæ of the same size and larger appeared on the macroscopically normal skin. Similar patches developed on both wrists and on the region around the axillæ, but not in the parts rich in sweat glands, as in Allen's case. On the dorsal aspects of the feet were pinhead-sized, quadrangular, smooth, shiny, slightly elevated, violaceous papules typical of lichen planus. Asiatic pills were given and the leg was securely bandaged, the patient being directed to have none but the family physician touch it. Under this treatment the bullæ became much smaller and more flaccid, but still continued to appear, both on sites of preexisting and existing lesions and on macroscopically normal skin. After several weeks the patient returned in the following condition: All the raised patches were gone, leaving in their places brownish pigmented areas with depressed center. Neither vesicles nor lichen papules could be seen. The patient considered himself well, when, in May, 1906, the disease reappeared on legs and wrists, but in milder form, and then for the first time lichenoid papules were visible on the glans penis. The mucous membranes and the nails were always free. The urine, examined several times, was normal, and showed neither albuminuria nor phosphaturia. Besides warm baths, the patient was given injections of arsenic by the family physician, alternating with Fowler's solution internally. Then for the first time bleeding from the nose appeared, and the arsenic was stopped. The vesicobullæ did not appear in larger numbers than formerly.

Lichen Planus.—Dr. LAPOWSKI reported the case of a woman, 46 years of age. The present disease, of four weeks standing, started on the lower extremities, spread-

ing over the legs, thighs, and forearms. The neck was first involved a few days ago. The eruption presented characteristic lesions of lichen planus, and the patient was presented for the sole purpose of comparing the lichen papules on her body with the papules in the case just reported.

Tuberculide.—Dr. Lapowski reported this case. The patient was a woman, 56 years of age, married. Both family and personal history negative. Good general health. The present eruption started two years ago, and since that time the patient had never been entirely free from it. At present the whole body was involved, from the face down to the soles of the feet, the eruption consisting of pea-sized tubercles imbedded in the skin and movable with it. The tubercle was hard and painless. The central portion was slightly edematous, whitish, having a pinhead-sized vesicle-like point in the center, but no fluid escaped when the point was pricked. Some efflorescences had a very dark red crust in the center; when the crust was removed a punched-out deep hole with sharp borders and dry floor was seen. The surrounding skin was normal. Such tubercles were scattered over the whole body, but mostly on the lower and upper extremities. Besides these tubercles, there were dark brownish pea-sized spots, and superficial scars over the trunk and extremities. On the soles of both feet dark red penny-sized, irregular, slightly scaly patches were seen. The eruption was very itching, but there were no scratch marks on the body except the dry crusts of the tubercles mentioned before. The eruption began with a sensation of burning and itching; when the patient touched the spot she noticed a hard nodule in the skin which itched very much. The nodule got larger from scratching, reaching the size of a tubercle, remained thus for several days, and then disappeared. Some of them disappeared without leaving any marks; others, even if they did not have a crust, had pigmentary spots and scars. Such nodules might appear in various numbers at different times, sometimes three times in one week on various localities. In the past few weeks the speaker had had the opportunity to see the appearance of dollar-sized patches on the breast, with pale, hard center and, red, inflamed area around it. In forty-eight hours the hardness and redness would disappear, leaving a pea-sized tubercle for six to eight days. But such patches appeared seldom, pea-sized nodules being the rule. The mucous membranes were normal.

Two Epitheliomata on One Lip.—Dr. Lapowski reported the case of a man, 35 years of age, no syphilitic history. He came to the Good Samaritan Dispensary a year ago with an ulceration on his lower lip of several months' duration. The right submaxillary glands were palpable, hard, painless. The patient was given a lotion for local use, and was not seen again for a year. During that time he was treated in a hospital in Philadelphia with caustic applications. About two months ago the second ulcer appeared on the lip. On the right side of the lower lip were two penny-sized ulcerations, the older one nearer the middle, the more recent one nearer the corner of the mouth. The clinical appearance corresponded with that of epithelioma. The speaker said he would place the patient under *x*-ray treatment, and hoped to bring him to a future meeting to show the results of treatment.

Tuberculosis of the Tongue.—Dr. Lapowski presented a man, 40 years of age, married for the past twenty years; he had four living and two dead children, but could not give the cause of the children's death. Twenty-one years ago he had a primary lesion on his penis, and was treated for syphilis for several months by means of internal administration of mercury. Since that time he had never seen any manifestation of any kind on his skin. He felt well until two years ago, when he began to cough. When seen for the first time, seven months ago, he had an ulceration on the left side of the back of his tongue of several months' standing, and leucoplakia on both mouth corners. The ulceration was in the shape of a curve with raised, infiltrated edges, the floor was covered with yellowish pus, and raised papillæ and pinhead-sized, punched-out ulcers were scattered over the floor. No glands were perceptible. In the apices of both lungs bronchovesicular breathing was very marked. Tubercle bacilli were found in the sputum. The patient looked pale and tired, but did not complain of any pain. He was given potassium iodide internally and was advised to go to the country for the summer. On his return he presented himself with the lesion on the tongue in the same condition as before. At the same time he complained of pain in swallowing. The speaker purposed treating him first with calomel injections, and then, when a marked improvement showed itself, to continue the treatment with rubbings.

Lichen Spinulosus.—Dr. Dana Hubbard reported this case. The patient, L. D., aged 25 years, was married, but had no children. She was pale and anemic. About two months ago she noticed a small patch of red spots appearing on her right arm, near elbow; this felt rough to the hand, was slightly itchy, seemed to catch in her sleeve, and at night seemed to have a tingling or burning sensation. As it did not disappear she applied at the Dermatological Class of the Vanderbilt Clinic. Dr. G. H. Fox diagnosed as above and gave a mixture of rhubarb and soda, 2 teaspoonfuls three times a day. Locally, soap poultices and hard scrubbing. The patient reappeared at the clinic in ten days with the patch smooth and less colored, but with other patches appearing—one on the forearm, one on the right thigh, and another on the left leg. The treatment continued. The lesion consisted of a pinhead-sized inflamed follicle with a hard, horny point or spine rising from it to a marked height. On passing the palm over the lesion it felt rough and file-like. Under the microscope the horny mass seemed to be nothing but epithelial cells packed close together. These lesions were numerous, very discrete, but in patches more or less irregular in outline and varying in size from one inch in diameter to three inches. On depilating the follicle there was left a distinct crater and adhering to the hair was the horny plug. The rash seemed to be easily controlled, but as soon as one spot was cleared others appeared, sometimes within twenty-four hours.

Late Results of the X-Ray Treatment of Cutaneous Epithelioma.—Dr. Charles Mallory Williams read this paper (see page 907).

Philadelphia County Medical Society.

At a stated meeting held November 14 Dr. Francis X. Dercum read a paper entitled "The Diagnosis and Treatment of Multiple Neuritis." Questions of etiology, symptomatology, diagnosis, and treatment were discussed at considerable length, and a woman of middle age who had largely recovered from an attack of multiple neuritis due to alcoholic intoxication and attended with mental symptoms was exhibited. Dr. Wm. Pickett presented a communication entitled "The Polyneuritic Psychosis (Korsakoff's Disease)." He pointed out that the disorder in question had been previously described by Dr. Mills, although its peculiar features were especially elaborated at a later date by Korsakoff. The disorder differs from other forms of multiple peripheral neuritis in the presence of a peculiar form of mental aberration characterized by fabrication or pseudoreminiscence. Dr. James Hendrie Lloyd read a paper entitled "Peroneal Palsy Following Childbirth." He showed by means of a skeleton that the lumbosacral cord and the branches of the sacral plexus may, under certain conditions, be compressed in the pelvis by the fetal head, particularly if the pelvis be deformed, and especially if forceps be used in delivery. Illustrative cases were reported. Dr. Wm. G. Spiller presented a communication entitled "The Diagnosis of Lesions, Especially Tumors, of the Conus and Cauda Equina." He dwelt upon the great

difficulty that at times attends the diagnosis of the lesions in question, simulating, as their symptoms often do, those of sciatica or peripheral neuritis or paresthetic meralgia or pelvic tumors. Dr. Arnold Lorand of Paris delivered by invitation an address on "Senility." He pointed out the similarity between the symptoms of senility and those of myxedema, and he expressed the view that senility is due to the withdrawal of the action of the thyroid secretion and that of other ductless glands. The factors responsible for the changes characteristic of old age consist especially in the various infections and intoxications, the effects of which in health are largely counteracted by the glandular organs of the body. All kinds of stimulants are harmful in this connection, as is also an excess of meat, and of salt in the diet. An interrelation exists between the various ductless glands. In counteracting the evolution of the phenomena of senility, it is important to stimulate the activity of bowels, kidneys, and skin. Medicinally iodides are of much service, and the therapeutic activity of thyroid extracts is referable to the iodine they contain.

Pathological Society of Philadelphia.

At a stated meeting held November 8 Dr. H. R. Alburger presented a specimen of "Aorta Showing Acute Infectious Thromboarteritis." Dr. C. Y. White exhibited a specimen of "Empyema from an Infant." The left lung was compressed by the accumulation of pus in the pleural cavity, while the heart was displaced to the left, the right lung being little, if at all, affected. Dr. White exhibited also specimens of tuberculosis of various organs from a colored child five years old. The mesenteric glands were enlarged and some bronchial glands were involved in marked degree. Other viscera exhibited the lesions of subacute miliary tuberculosis, and the brain was the seat of tuberculous meningitis. Dr. C. B. Farr read a paper entitled "Bronchial Calculi, with Report of a Case." The patient was a colored woman who had suffered from a cough for eighteen months. In certain positions of the body the breath-sounds were suppressed in portions of the lung, and skiagraphic examination disclosed the presence of shadows referable to enlarged bronchial glands. The calculus was expelled in a paroxysm of cough. The nature of the concretions, their mode of origin, the symptomatology of the condition, the diagnosis, and the treatment were all considered successively. Dr. J. D. Steele read a paper entitled "Some Observations Upon Sahli's Desmoid Test and the Musclenucleus Test." He contended against the view that there is a specific reaction between the digestive ferments and definite kinds of tissue, a principle on which depend many of the tests that have been proposed. For example, there is evidence to show that connective tissue in the form of catgut can be digested at times in the intestine as well as in the stomach, and also that the trypsin of the pancreatic juice is not essential to the digestion of meat-fiber and the destruction of the musclenuclei, while occasionally loss of musclenuclei may fail to take place in the presence of the pancreatic juices. A number of observations indicated that to be efficient large doses of such substances as pepsin and hydrochloric acid must be given in order to aid the digestion of connective tissue. Dr. R. S. Lavenson presented a communication entitled "A Probable Case of Typhoid Meningitis." The patient was a woman who gave a history of having had an attack of typhoid fever several years earlier, but who became ill while nursing a relative suffering from that disease. She presented symptoms of meningitis and lumbar puncture disclosed the presence of bacteria in the cerebrospinal fluid that on culture corresponded to typhoid bacilli. On post-mortem examination no lesion was found beyond a purulent meningitis, but owing to the conditions under which the autopsy was performed cultures from the meningeal exudate were not made, so that a demonstration of the bacteriological nature of the lesion was lacking.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Conferences on the Moral Philosophy of Medicine. Prepared by an American Physician. 12mo, 368 pages, flexible muslin. The Rebman Company, New York. Price, $1.50.

The Treatment of Syphilis. By Alfred Fournier. Second edition. Translated by C. F. Marshall, M.D., F.R.C.S. 8vo, 528 pages, muslin. The Rebman Company, New York. Price, $5.00.

The Diseases of Women, a Handbook for Students and Practitioners. By J. Bland-Sutton, F.R.C.S., and Arthur E. Giles, M.D., B.Sc. (Lond.), F.R.C.S. (Edin.). Fifth edition. 12mo, 536 pages, illustrated, muslin. The Rebman Company, New York. Price, $3.25.

Elementary Manual of Regional Topographical Dermatology. By R. Sabouraud; translated by C. F. Marshall. 4to, 660 pages, illustrated, muslin. The Rebman Company, New York. Price, $5.00.

The Health-care of the Baby. By Louis Fischer, M.D. 12mo, 144 pages, muslin. Funk & Wagnalls Company, New York. Price, 75 cents.

Aids to Gynecology (Students' Aids Series). By Alfred S. Grubb, M.D., M.R.C.S. (Eng.). Fourth edition, tenth thousand. 16mo, 136 pages, illustrated, muslin. William Wood and Company, New York. Price, $1.00.

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Diseases of the Digestive System. Edited by Frank Billings, M.D. 8vo, 824 pages, illustrated, muslin. D. Appleton & Co., New York. Price, $5.00, net.

Intoxications. By P. Carnot, E. Lancereaux, Letulle, Wurtz. 8vo, 352 pages, illustrated, paper. J. B. Ballière et Fils, Paris. 6 fr.

Die Röntgenstrahlen im Dienste der Neurologie. By Dr. Wilhelm Furnrohr. 4to, 375 pages, illustrated, paper. S. Karger, Berlin. Price, M. 10.

De l'Apepsie. By Dr. Henri Français. 8vo, 207 pages, illustrated, paper. G. Steinheil, Paris.

Carl Weigert und Seine Bedeutung für die medizinische Wissenschaft Unserer Zeit. Ein biographische Skizze von Dr. Robert Rieder. 4to, 141 pages, paper. Julius Springer, Berlin. Preis, M. 3.

Transactions of the Twenty-eighth Annual Meeting of the American Laryngological Association Held at Niagara Falls, 1906. 8vo, 347 pages, illustrated, muslin. Published by the Association in New York.

Toxicology, the Nature, Effects, and Detection of Poisons with the Diagnosis and Treatment of Poisoning. By Cassius M. Riley, M.D. Third revised edition. 12mo, 215 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.50.

Stohr's Histology, Arranged upon an Embryological Basis. By Dr. Frederic T. Lewis, from the twelfth German edition, by Dr. Philipp Stohr. Sixth American edition. 8vo, 434 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $3.00.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending December 1, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	319	162
Diphtheria	291	32
Measles	152	7
Scarlet Fever	136	8
Smallpox		—
Varicella	74	—
Typhoid Fever	87	20
Whooping Cough	55	5
Cerebrospinal Meningitis	10	4
Malarial Fever	.	. . . . .
Totals	1124	238

Currents of High Frequency in the Treatment of Ozena.—Tommaso Lucrezio finds in literature the records of eleven cases of ozena that have been treated up to date by the high frequency current. Two of these have been treated by him. The treatment is simple and easy of application when one has a proper apparatus, and the results are excellent. The current is applied by the monopolar method, the electrode being covered with paraffine, and thin enough to pass easily into the nasal passages. The cause of the good results is inherent in the nature of the morbid process, as well as the method of treatment. Ozena is an infective disease due to a specific microorganism of the group of Friedlander, called *Bacillus mucosus ozænæ*. A condition of hypertrophy and hyperplasia is produced, succeeded by one of atrophy. The mucosa becomes thinned and ulcerated, the glands of Bowman atrophy, as does the erectile tissue of the turbinated bones, until a naked bone surface is left to necrose and the nasal cavities are dilated. The process is essentially a diphtheritic one and may extend to the frontal and aural sinuses. A rational therapeutic plan will include removal of all crusts, efficient antisepsis, and excitation of the regenerative functions of the tissues. The rays do all three of these things. They do not act on the general sensibility. They may be used with high potential and an intensity of three ampères. Anesthesia of the nerves is produced, the combustion of the organism is increased, and there is an especial action on the vasomotor system and the blood plasma, as well as its cells. They have electrolytic and antiseptic powers by which they produce effects on ferments, microorganisms, and products of secretion. The muscular fibers contract, and with the aid of the electrostatic action the exudate is removed. Ozone is produced which acts as a disinfectant. At the point of contact of the electrode ischemia is produced, followed by intense and lasting hyperemia, and leucocytes undertake phagocytosis, so that the necrosed detritus is removed. The method gives better results than any other method of treatment, giving immediate relief and a rapid cure of this distressing condition.—*Annali di Elettricita Medica e Terapia Fisica.*

Experimental Atheroma of the Aorta Consecutive to the Action of Tobacco.—M. J. Baylac has experimented with tobacco in order to find out if it can produce atheromatous lesions in animals. He has made use of infusions and macerations. He made intravenous and subcutaneous injections. In all of these cases there were produced aortic lesions, which appeared sometimes in the form of small yellowish patches, making a prominence on the internal surface of the artery; sometimes in the form of hard plaques, calcareous and confluent at certain points; sometimes in the form of small aneurysmal dilatations. These lesions were in some cases limited to certain points, sometimes were desseminated throughout the length of the aorta. In a general manner the walls of the aorta were increased both in thickness and in consistence, and its lumen was enlarged. There was no appreciable lesion of the suprarenal capsules. Tobacco, like adrenalin, though less frequently than the latter drug, has an injurious effect on the arterial walls. This effect is especially marked if the tobacco is introduced by the intravenous method. These experiments confirm the observations of clinicians concerning the cardiovascular affections which are attributed to the abuse of tobacco.—*Le Bulletin Médica.*

Regeneration of the Internal Arterial Tunics After Curetting.—Ettore Vitale has experimented on animals by injuring the arteries in order to find out the method of repair of the walls. He finds that the portion of the internal coat that is injured is regenerated in all its constituent elements. The endothelium begins repair in sixty hours after the injury. After ten days the muscular and elastic tissues show signs of regeneration. The rapidity of regeneration is in relation to the severity of the injury. Simple detachment of the coat is soon repaired, muscular injury is repaired in from thirty-two to forty days, while complete disintegration is repaired in one hundred days. Elastic tissue is repaired more rapidly and more abundantly than muscular.—*Giornale Internazionale delle Scienze Mediche.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 30, 1906:

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
Georgia, Augusta	Nov. 13–19	9	..
Illinois, Galesburg	Nov. 11–17	16	..
Indiana, South Bend	Nov. 11–17	6	..
Missouri, St. Louis	Nov. 11–17	1	..
Louisiana, New Orleans	Nov. 11–17	4	..
New York, New York	Nov. 11–17	1	..
North Carolina, Greensboro	Nov. 11–17	3	..
Oregon, State	Oct 1–31	7	..
South Carolina, Greenville	Nov. 11–17	1	..
Utah, State	Oct. 1–31	33	..
Wisconsin, Appleton	Nov. 11–17	1	..
Milwaukee	Nov. 11–17	2	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Oct. 7–13	4	..
Austria, Bohemia	Oct. 12–18	8	..
Bukowina	Sept. 30–Oct. 6	1	..
Galicia	Sept. 30–Oct. 20	28	..
Brazil, Bahia	Oct. 7–27	15	1
Rio de Janeiro	Oct. 15–21	4	..
Chile, Antofagasta	Oct. 14–24	5	..
Coquimbo	Oct. 11–21	27	2
Egypt—General	June 4–July 1	14	20
Great Britain, Manchester	Oct. 27–Nov. 3	3	..
India, Calcutta	Oct. 14–20	..	1
Madras	Oct. 6–26	..	1
Italy—General	Nov. 2–8	3	..
Peru, Lima	Oct. 21–27	..	Present
Russia, Moscow	Oct. 21–27	3	1
Odessa	Oct. 15–Nov. 3	16	2
St. Petersburg	Oct. 14–27	6	1
Spain, Barcelona	Nov. 1–10	..	8
Cadiz	Oct. 1–31	..	6
Uruguay, Montevideo	Aug. 1–31	..	2

YELLOW FEVER.

Cuba, Habana	Nov. 21–27	7	2
Santa Clara Province	Nov. 18–25	..	..
Rodas		1	..
Mexico, Veracruz	Nov. 11–14	1	1

CHOLERA—INSULAR.

Philippine Islands, Manila	Sept. 29–Oct. 13	16	15
Provinces	Sept. 29–Oct. 13	348	248

CHOLERA—FOREIGN.

China, Hankow	Oct. 8–14	..	24
Shanghai	Oct. 8–14	..	25
India, Bombay	Oct. 24–30	..	4
Calcutta	Oct. 14–20	..	34
Madras	Oct. 20–26	..	2
Rangoon	Oct. 14–20	..	1

PLAGUE.

Australia, Sydney	Oct. 1	1	..
Austria, Trieste	Nov 8	..	1
Brazil, Bahia	Oct. 14–27	4	2
Rio de Janeiro	Oct. 15–21	19	4
Egypt, Alexandria	Oct. 22–28	3	2
Minieh Province	Oct. 26–28	5	..
Garbieh Province, Tanta	Oct. 22–28	1	..
Port Said	Oct. 22–28	1	1
Suez	Oct. 22–28	2	1
India—General	Oct. 14–Oct. 20	6,278	4,760
Bombay	Oct. 24–30	..	27
Rangoon	Oct. 16–20	..	27
Calcutta	Oct. 14–20	..	7

Medical Record

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Original Articles.

LEPROSY AS SEEN IN THE PHILIPPINES.

BY MAJOR CHARLES B. EWING,

SURGEON, U. S. ARMY, JOLO JOLO, P. I.

FORMER PRESIDENT U. S. ARMY BOARD FOR INVESTIGATION OF TROPICAL DISEASES IN THE PHILIPPINES.

WHILE leprosy, as seen in the Philippines, may not differ in many respects from the leprosy of other countries in races of dark skins, the distinctions are important and interesting. Aside from racial characteristics, the general features of this disease are the same, and, having been studied in the Philippines, the disease should be readily recognized in the most widely distributed peoples.

Leprosy is said to have been first introduced into the Philippines in 1633, when, it is related, the Emperor of Japan sent a ship containing 150 lepers to those islands to be cared for by the Catholic priests there. The seed was planted in this way, and as no means were taken to eradicate the disease the Franciscan fathers estimate that at the present time there are not less than 30,000 lepers in the archipelago, the major portion of these being in the Visayas. My own experience, however, would place the number far less than this. If the area of Luzon be placed at 40,000 square miles and this divided by eighty square miles (about the area in which twenty of my cases were found), and this quotient multiplied by twenty (as the average found in eighty square miles), the total would be 10,000 for Luzon alone. I am satisfied, however, that this average is much too high, and that the aggregate would be really much less than 10,000 for the entire Philippine Archipelago. A recent report verifies this view by placing the number of lepers at 3,683. My cases were found in the thickly-settled districts, whereas a very large portion of Luzon, Mindanao, and other islands I might mention are only sparsely settled or entirely uninhabitable, being an intermingling, in most part, of mountain, swamp, and virgin forest, impossible of cultivation.

Those lepers seen by me were Chinese and Filipinos, the latter consisting of Ilocanos and Tagalogs, but the Ilicanos formed four-fifths of the entire number of cases studied. All my cases were inhabitants of Northern Luzon, Manila, and Jolo; the Ilicanos residing in the Barrios of the provinces of Ilocos Sur and Union, the Chinamen in Trinidad, Province of Benguet, Luzon, and Jolo Jolo, P. I. The Tagalogs were citizens of Manila, P. I., isolated in the Lazeretto of that city. While this leprasorium contained, according to report, more than 100 cases, I only examined critically twelve tubercular lepers with a view to separating the bacillus lepræ from the discharges of the nose and the ulcerating lepromata of the face. The outline figure cards, here shown, were obtained in most part at Namapocan, Northern Luzon. As the military authorities were desirous of obtaining all the information possible on the subject of leprosy, I transmitted word to the Presidents of the various barrios in the neighborhood, asking that they send to me at Namapacan all lepers and persons suspected of having leprosy for examination. In this way I examined, through the aid of an interpreter, some fifty persons; finding out of that umber twenty-one lepers, from whom I made outline figure cards, using for this purpose the card issued by the Medical Department of the Army, in connection with the examination of recruits.

My studies are based upon thirty-six cases, and of this number I was able to obtain twenty-six outline figure cards. I procured in a few cases a complete history, as to the factor of heredity in leprosy; while in others data of this character were very meager and in a majority entirely unobtainable. It must not be understood that leprosy is so common in the Philippines that one meets it at every turn in the cities and villages of that country. I can testify that this is not so, for of all the cases observed by me a very small and insignificant number were unlooked for. I am therefore of the belief that the casual observer will fail to find much leprosy in his travels in the Orient, which is perhaps due in part to new sanitary regulations and laws requiring segregation, particularly in the larger cities. I do not recall seeing any leprosy in Zamboanga, Cotabato, Polyok, and Parang, situated in the Island of Mindanao; and at Jolo, in the Sulu Archipelago I saw only two cases in Chinamen, though the disease must certainly exist to a very considerable extent, as I am authentically informed, among Moros. I do not believe that leprosy affects the aboriginal inhabitants of Luzon to any great extent, as I saw only one case, and this in a Chinaman, among the Igorrotes of the mountainous districts of Abra and Benguet. From what I can understand, the Negritos are not much affected with this disease. These two tribes are said to be the original inhabitants of Luzon, and are essentially mountaineers, being seen only occasionally in the lowlands and seaport towns.

Of all the curious customs witnessed by me, associated with the different people of the Orient, those of the Igorrotes excited my curiosity the most. One especially which I may mention here as a "wake" or watch, which partakes of the nature of a ceremonial when a death occurs among them. Immediately upon the occurrence of a death the deceased is placed in a chair and a small fire or "smudge" is built under the chair, so as to correct the odors which may emanate from the body. The body is placed in the sitting position and the deceased's friends and relatives approach him, each making an obeisance begging that a tithing or present be given them. The dead are kept in the sitting posture for seven days with the smudge fire burning all the while. In the meantime the property of the deceased has been so distributed that a continuous banquet of solid and liquid refreshments has been served the relatives and friends, until the seventh

day arrives, upon which the dead is interred, a sufficient quantity of food and drink being placed in the grave for his use in the next world. If any misfortune should occur in the family of the diseased they may disinter the remains for the purpose of conciliating the angry spirits; this being accomplished, the body is again buried, and a renewed supply of food placed in the grave.

Relative Frequency.—Of the twenty-six cases of lepra studied by me, fourteen were males and twelve females. Of the fourteen males four had anesthetic, eight tubercular, and two mixed leprosy. Of the females three had anesthetic, five tubercular, and four mixed leprosy. Out of the total number of twenty-six cases of both male and female seven were anesthetic, thirteen tubercular, and six mixed leprosy. The proportion generally of anesthetic and tubercular cases amongst the males is slightly higher than amongst the females, though in the mixed lepra the female figures are 50 per cent. higher than the male. The proportion found by Impey in South Africa, out of 703 cases, was relatively the same as shown by me—of anesthetic cases 52.48 per cent., of tubercular 33.86 per cent., and of mixed lepra 11.53 per cent.

In cold climates the proportion of tubercular cases is always much higher according to Danielson and Boeck. These authorities found in Norway 51.6 per cent. of the cases to be tubercular, while only 33.3 per cent. were anesthetic, and 15.1 per cent. mixed. This preponderance of the tubercular type in cold countries is not merely a coincidence, but is shown to be due to the peculiar nature of the disease. On the other hand, the prevailing type of lepra in all warm and temperate climates is said to be the anesthetic variety.

Form.—Leprosy occurs in the Philippines in four forms—the anesthetic, the tubercular, the mixed, and the syphilitic. Generally and briefly, it may be stated that in the anesthetic form of this affection the nerves of the extremities and face are diseased, producing atrophy and ulceration of the tissues, paralysis, and contraction, leading finally to partial and complete amputation of digits; in the tubercular type of leprosy the skin of the face, the hands, and the feet become the site for the tubercles or lepromata; in the mixed form the tubercular and anesthetic forms are combined in the same patient, and in syphilitic lepra the leprotic manifestations are modified by the presence in the system of the syphilitic poison.

Cause.—The universally acknowledged cause of leprosy is the *Bacillus lepræ*. If the bacillus attacks the nerves we have anesthetic lepra; if it attacks the skin, tubercular leprosy; if it attacks both nerves and skin, mixed leprosy results, and if the bacillus attacks the patient suffering from syphilis, or if syphilis is contracted by a patient suffering from leprosy, we have syphilitic leprosy. The bacillus possesses a striking resemblance to the bacillus of tuberculosis, both morphologically and as regards staining reactions. Hansen discovered the organism in 1874, and his observations were confirmed by Neisser, working independently in 1879. Its average length is five to six microns; a little longer and somewhat thinner than the tubercle bacillus, although variations in size may occur. The frequent beaded appearance has led some observers to believe that spores were found; this, however, is doubtful. I was able to find the organism in the discharges of ulcerating lepromata located on the face in the tubercular lepers examined by me at the Lazaretto, Manila. I was not successful in finding the bacillus in the dust of the floor or walls of the large and commodious approach to the Lazaretto, which formed the lounging place for the 100 or more lepers confined in this leprasorium. I was able to find the lepra germ in the discharges from the nose in several cases of tubercular leprosy, which location is said by the India-German Leprosy Commission report (truthfully, I think,) to be the primary seat and place where the bacilli are almost invariably found. Stricker verifies this, having found the *Bacillus lepræ* in the nasal mucus in 128 out of 153 lepers examined, and considers the initial lesion of the disease to be a specific ulceration of the cartilaginous septum of the nose which persists and is an active source of infection during life. Related to this condition, he maintains that epistaxis is often an early symptom. Repeated examinations of leprous blood gave me only negative results. In severe cases the anemia was well marked, especially in the old. The hemoglobin is said by some observers to be not relatively high. I was not disappointed, however, in finding no growth from the blood and discharges from the nose and ulcerating lepromata, because this was not expected, as no one has been able to grow the organism on artificial media. Campana of Rome claims to have been successful in growing stale cultures on glucose agar, but this observation has not been verified.

Histologically, leprosy belongs to that group of granulomata which includes syphilis, lupus, tuberculosis, and diseases of this character. The neoplasm is made up largely of connective tissue of a partially reverted type. In this new growth, especially when it forms the tubercular variety of leprosy affecting the skin, the organism is found in extraordinarily large numbers; but in the anesthetic form, however, when the peripheral nerves are first attacked, they are greatly increased, though one observer, Impey, has failed to find them here. Besides the two common locations, the skin and the nerves, the bacillus may be found in the mucous membranes, cartilages, spleen, liver, lymphatic glands, hair follicles, cornea, testicle, spermatic cords, ovaries, walls of blood-vessels, kidneys, and mammary glands. They are not found in the muscles, bones, spinal cord or joints; nor in the bullæ and other secondary lesions, nor in the urine or menstrual discharges. The physiological secretions do not contain them.

Hansen, one of the great leprologists, states that the brain is never affected by leprosy. This has been disproved, however, as the *St. Petersburger medizinische Wochenschrift,* October 17, 1890, contains a report by Dr. C. Brutzer, of ten lepers who had died in the leprosery at Riga, four of these having had adhesions between the dura mater and the brain, and in three of four cases of adherent meningitis he found lepra bacilli around the pituitary gland.

Communicability and the Modes of Infection.—Contagion: Leprosy is now generally believed to be contagious, and the factor of heredity has little, if anything, to do with its spread. Out of twenty-one of my cases where information was obtainable, only one (or 4.7 per cent.) gave a history of leprosy among the parents; in the case of one tubercular leper the father had died of leprosy. Impey states that 266 leprous parents confined in the Robben Island Asylum, Cape Colony, had 951 children, and only twenty-three of these, or less than 3 per cent. of the children, became lepers. He also states that of 520 lepers in the asylum mentioned 475 were born of healthy parents. Of the remaining forty-five cases the father alone was infected in

twenty-five, the mother alone in sixteen, and both father and mother in only four cases. Of the numerous offspring of 160 children of leprous parents that have migrated from Norway to the United States, Hansen says not one has become leprous. Leprologists of wide experience have failed thus far to see a newborn leper, and the youngest cases are rarely under three or four years of age.

In proof of the contagion theory it is known that the bacilli given off from open sores are found in the saliva and nasal secretions. Schaffer was able to collect lepra bacilli on clean slides, placed in close proximity to lepers whom he caused to read aloud.

Inoculation: Experimental evidence is inconclusive in this respect. The Hawaiian convict under sentence of death, inoculated by Arning September 30, 1884, had rheumatoid pains and neuritis of the ulnar and median nerves, but while the neuritis subsided, a small leproma developed at the site of inoculation. Three years after the inoculation the disease was well marked and the man died of leprosy in 1890, six (6) years after inoculation. This case, however, is thought to be inconclusive, as the convict has leprous parents and lived in a country inhabited by lepers. Successful inoculations of the lower animals have not been made, though Melcher and Orthmann inoculated the anterior chamber of the eye of rabbits with leprous material and claimed that the extensive growth of nodules in the internal organs and lungs contained lepra bacilli. This observation has remained unverified.

Conditions that Influence Infection.—Baelz believes that leprosy is very feebly contagious, if at all. He has treated lepers for years in the same wards with his other patients, and during that time none of his nurses or any of his sick who came in contact with them ever contracted the disease, though no special precautions were used. Data of five thousand cases collected by him from Japanese physicians show that in only two instances could it be proven that the disease had been conveyed directly from one person to another. It must be understood that infection implies a morbid process by which pathogenic microorganisms are introduced into the body, and subsequent reproduction there. Infectious diseases may be directly or indirectly communicated from one person to another. Directly infectious diseases are termed contagious, and the infecting agent is known as contagion. Welsh says that "whether or not an infectious disease is contagious in the ordinary sense depends upon the nature of the infectious agents, and especially upon the manner of its elimination from and reception by the body. Most, but not all, contagious diseases are infectious; scabies is a contagious disease, but it is not infectious."

The closest and most intimate contact is necessary, though the disease attacks persons of all ages. Father Boglioli, in New Orleans, and Father Damien, in the Sandwich Islands, fell victims to this disease while in the discharge of their duties as priests. The theory held by Jonathan Hutchinson that the susceptibility to this disease is increased by fish diet, or that the poison is introduced through the medium of fish, remains to be proven. Besnier explains the long incubation period on the ground that, by reason of bad soil, the bacilli lie dormant and are unable to multiply. Thin, while believing that close personal contact is usually necessary, thinks the mosquito or acarus may, possibly, be an intermediary in transmission. Morrow believes that the contagion finds entrance to the body through the mucous membranes of the respiratory and gastrointestinal tracts, the bacillary origin of leprosy being admitted. I am satisfied that in my cases the predisposing causes were bad hygiene, dirt, filth, and careless habits. As is well known, the Filipinos of the lower classes are not cleanly. Filipinos as a rule congregate in villages, though in some instances one may find detached dwellings. This concentration of people is not attended with increased sanitary effort, but, on the contrary, a supine indifference is manifested. While, as a rule, the habitations are raised on piles and the living rooms placed some ten or twelve feet above the ground, in the larger towns and cities, commercial conditions require that business be transacted on the ground floor; hence many of the lower orders eat and sleep in the rooms which hold their wares. The poorer classes are essentially dirty; hence these become afflicted with leprosy, this disease being very rare among the higher classes. The surroundings of Filipino dwellings generally are filthy, and only in the cities does one find anything approaching a privy vault. For the most part, feces are permitted to fall upon the ground immediately under the habitation and instead of a sanitary squad and disinfectants alleviating the nuisance, the lowly pig takes upon himself these functions, by consuming the excrement; hence pork as an article of food is held at a discount by the intelligent American, though the Filipinos still regard it as a delicacy. Again culinary utensils are limited; these for the most part take the various forms of earthen ware which are much in general use. The fingers not infrequently take the place of forks, and the incisor teeth become a substitute for the knife. A single drinking cup may be used by an entire family. While the bedstead is in general use by the middle and higher classes, the lower, from necessity perhaps, takes more kindly to the floor, and it is not unusual to find a whole family sleeping in a single room. The clothing worn by day is used as a sleeping garment by night. Besides the unhygienic conditions noted, the hot, moist climate is doubtless a potent but still an indeterminate factor in the propagation of this disease among Filipinos.

Period of Incubation.—It was impossible to get exact data as to the length of this period in all the cases seen by me. From the statements made by friends and relatives, four months seemed to be the shortest and five years the longest period of incubation. Impey gives the average duration of this period as two years, and authorities are agreed that it may vary from a few weeks to many years. Danielssen, Leloir, and Hoegh report cases in which the periods of incubation lasted ten, fourteen, and twenty-seven years, respectively.

Prodromes.—The prodromal stage follows that of incubation and precedes the eruptive or macular stage. This consists principally of chills, fever, sweats, and unaccountable feeling of weakness, accompanied by drowsiness and a tendency to fall asleep at unusual times. This last was especially marked in several of my cases, and particularly well pronounced in an anesthetic leper named Santiago, a Chinaman, who would fall asleep while in conversation and sleep for hours at a time. Other symptoms were dryness of the nostrils, headache, perversions of sensation; such as hyperesthesia, "pins and needles" in the extremities, also intermittent neuralgic pains in the limbs and face, as well as rheumatic pains in the back, loins, and elsewhere, these lasting months, preceding and leading up to the explosion of leprosy. In all my cases

except four, and in two of these, history was unobtainable; the fever and sweats characterized the prodromal stage of leprosy in all its different forms. Of the anesthetic type there were prodromes in five cases out of seven, no history being obtainable in the remaining two; of the tubercular form prodromes in seven cases out of nine; of the mixed variety, prodromes was present in all six cases. Both the remittent and intermittent forms of fever, of greater or less intensity, were seen in this disease, which may readily be mistaken for malaria in tropical countries. Febrile attacks from a week to a month's duration, alternating with profuse sweats, may occur off and on during one or two years. The curious feature of these sweats is that they generally affect the body or trunk, while the limbs are frequently not involved in the hyperhidrosis. I noted anidrosis in seven cases, and these nonsweating spots became anesthetic later in the disease. The sweats and fever were noted in every case where any history was at all obtainable, and with the lancinating and "pins and needles" pains, formed the most common symptoms of the prodromal stage, which racked the unfortunate sufferer from one to two years. I must also mention particularly the early involvement of the mucous membrane of the nostrils, characterized by a peculiar dryness, which later became almost invariably the seat of ulceration. Care must be exercised, however, in diagnosis; that this should be not confounded with the manifestations of nasal syphilis. The symptoms of peripheral neuritis are as a rule earlier and more pronounced in the anesthetic than in the tubercular variety of leprosy, though neuralgic pains may accompany the formation of lepromata in the tubercular form at a later period. In only two of the twenty cases in which a history was obtainable were constitutional symptoms lacking prior to the appearance of the macular eruptions, this being quite in accord with the findings of others, where a complete absence of constitutional symptoms is noted only in a very small proportion of cases before the eruption.

The Primary Eruptive or Macular Stage.—In most of my cases the common prodromal phenomena preceding the eruption were an unusually severe outburst of fever, or a period of indifferent health. The eruption is distinctively macular as the areas of discoloration are not elevated above the general level of the skin, but may vary in different cases as to size, number, and duration. The spots range from the size of a dime to those that may occupy many inches of surface; they may be few or many in number. The duration extends from a few days to months and even years, as Danielssen quotes a case where the spots remained unchanged for eighteen or twenty years. The color of the maculæ likewise varies, for while the earlier spots in some cases are purely erythematous, darkest in the center, shading off toward the periphery and disappearing on pressure, in other cases the spots seem to be pigmented from the outset or merely vitiliginous patches. I noted quite a number of cases in which all three forms of the erythematous, pigmented, and vitiliginous maculæ occurred in the same individual. The ring form of macula was quite noticeable, where the center of an erythematous patch cleared up, the periphery remaining red, or took on pigment, so that the affected spot presented the appearance of a dark or red ring, sometimes incomplete, however, inclosing a patch of pale anesthetic skin. These rings were sometimes found to be hyperesthetic while the enclosed areas were usually anesthetic. Briefly, then, the primary macular eruption is most frequently seen on the face, the nose, cheeks, ears, and especially the superciliary region, the extensor surfaces of the limbs, the dorsal surfaces of the hands, the buttocks, back, abdomen, and chest. The scalp is never, and the soles of the feet and palms of the hands rarely, if ever, attacked. The absence of leprous eruption in the scalp and leprous alopecia was so general in my cases that it forms to me one of the most striking diagnostic differences between leprosy and syphilis. Another striking circumstance noted by me was that those parts of the face most prone to leprous eruptions, particularly the superciliary region, suffered an early partial or complete loss of the eyebrows. Of twenty-two cases the eyebrows were completely lost in eleven, partially lost in eight, and not noted in three.

In my cases of the anesthetic type the eruption seemed to be more marked and more widely distributed than in the tubercular variety of the disease, and were distinctly symmetrical in many; while in the tubercular form the eruption was not so well marked, of shorter duration, more localized, and frequently asymmetrical.

Stage of Specific Deposit.—Sight and touch failed to disclose during the macular stage any very well-marked changes in the skin as the result of thickening or new growth, but this is followed by a period of tissue development or deposit, showing most strikingly the impress of specific characters. This tissue change or deposit may affect either the skin, peripheral nerves, or both. If in the skin, tubercular or nodular leprosy results; if in the peripheral nerves, anesthetic or nerve lepra ensues; if in both localities, then mixed leprosy is the consequence. Where syphilis has been acquired by a leper, or leprosy has been grafted upon a syphilitic, the clinical features of leprosy are greatly modified. While all three forms of leprosy proper when fully developed have much in common pathologically; clinically, they are fairly distinguishable. A very brief description of them as seen in my cases will suffice.

Anesthetic or Nerve Leprosy.—Here the prodromal and macular stages may be severe, slight, or entirely absent; usually, however, there is a well-marked macular stage of long duration, which is quite exceptionable in tubercular leprosy.

In my anesthetic cases the ring form of eruption is quite common, the red congested, somewhat elevated frequently hyperesthetic border, enclosing a pale area of integument of variable size, anesthetic and nonsweating. The ring form, resembling somewhat the body ringworm so common to natives of tropical climates, may be preceded or associated with large areas of erythematous pigmented or vitiliginous patches covering the extensor surfaces of the limbs, hands, feet, and face. This eruption is generally bilateral and may give place later to a specific infiltration of the skin, which is likewise symmetrical and usually anesthetic, though earlier the needle may show it to be hyperesthetic.

I invite the reader's attention to the outline figure cards of an anesthetic case of leprosy (Fig. 1) which show ulcers, cicatrices, and leucospots of various sizes distributed on the hands, feet, knees, and back of the thighs, caused primarily by ruptured bullæ. These bullæ form suddenly and rupture, exposing reddish surfaces which crust over, turn pale, become anesthetic, and have pigmented borders. If the bullæ form close together they usually ulcerate, producing large, superficial, serpiginous-looking sores, which after a variable period finally heal and become anesthetic. This appearance of bullæ, *pemphigus leprosus*, is

very characteristic and distinctive of this form of leprosy. The bullæ while characteristic of the early skin lesions may also occur later at any stage of the disease.

The most prominent symptoms of nerve leprosy in my cases were skin lesions, but the nervous system becomes profoundly involved as evidenced by increase of neuralgic pains, formication, hyperesthesia, and anesthesia. The lymphatic system likewise becomes affected and the glands of the groin, axilla, neck, and throat are particularly implicated. While in the majority of my cases the lymphatic glands generally were enlarged bilaterally, nine of the twenty-two (three anesthetic, three tubercular, and three mixed), as shown in the outline figure card, gave evidence of marked adenopathy, where the enlargements reached the size of walnuts, particularly in the inguinal region, though the axillary and cervical glands were affected to a less extent. In a number of cases the interference with breathing and swallowing from this cause was marked, and in several instances I noticed fistulous tracts leading from the glands, discharging softened and broken-down material. Pus organisms are thought to be the cause of the glandular enlargement, though lepra bacilli are found in the glands. The nervous system seems to have become chiefly involved at this stage of the trouble, for the peripheral nerves give distinct evidence of disease; the neuralgic pains are increased as a result of nerve destruction, and the dominant elements are well marked hyperesthesia, anesthesia, and paresthesia, associated with trophic changes in skin, muscle, and bone. My attention was particularly directed to thickening and enlargement of the ulnar nerve at the elbow, median at the wrist, and peroneal at the knee, while changes in the tibial, radial, and brachial were noted in a less degree. Some smaller nerves, superficially located, were found by palpation to be hard and cord-like. These thickened nerves in some instances were tender on pressure and the parts supplied by them were hyperesthetic and acutely neuralgic. In the majority of my cases, however, I have found that the hyperesthesia and neuralgia had given place to anesthesia, paresis, muscular atrophy, and other trophic changes, resulting from progressive nerve disturbance. In no instance did the anesthesia come on without the neuralgic pains, hyperesthesia, discoloration of the skin, and constitutional symptoms, though this is said by leprologists to be not uncommon. My notes show that in two cases only were there no prodromes prior to eruption. The anesthesia in nerve leprosy begins commonly in the feet, thighs, hands, arms, forearms, and face, and more rarely the trunk may be involved.

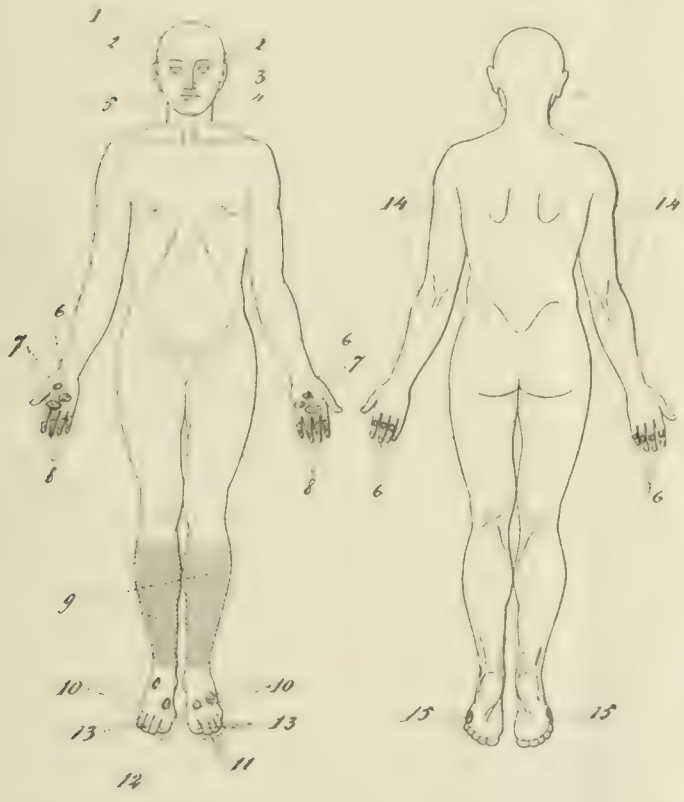

Fig. 1.—Anesthetic (atrophic) leprosy: 1, No loss of hair; 2, no eyebrows or eyelashes; 3, no bridge of nose; 4, blue lines around the gums; 5, gums retracted; 6, 6, leucopatches, sensitive; 7, 7, thenar and hypothenar eminences melted away; 8, 8, flexors contracted, phalanges shortened, distorted, and bent upon palm; 9, surface brawny, indurated, and anesthetic; 10, 10, suppurating sores, 3 in. long; 11, toes lost; 12, great toe much swollen; 13, 13, feet much swollen and disfigured, extensors contracted, and phalanges turned upward; 14, 14, extensor muscles of arms atrophied; 15, 15, leucopatches, sensitive.

The permanent seats of eruption invariably become thickened and anesthetic, this being determined by the use of a sterilized needle. These anesthetic areas were markedly symmetrical and of large extent in nerve leprosy, while less commonly symmetrical, of smaller area, and more localized in nodular leprosy, though in the mixed form these features were governed by the primary type of the disease. Muscular deformity is essentially a characteristic feature of nerve leprosy. The atrophy of the muscles of the extremity and face keep progress with the increased anesthesia, and the result is particularly marked in the extremities, where it is associated with distortion of the hands and feet, and loss of motion. In the face, paralysis and atrophy of muscles, due to involvement of the facial and motor occuli nerves, were seen in a few cases. Deformity of the extremities existed in six out of seven nerve, and three out of six mixed lepers, indicating in the latter nerve leprosy as the dominant type of the associated forms.

Three of the nine tubercular cases showed swollen hands and feet, bulbous fingers and toes, indicating nerve involvement and commencing change to the mixed form of the disease.

The facies in nerve leprosy is almost as characteristic as that of leontiasis in the nodular type, for the paralyzed face, drooping and everted lids, cornified conjunctivæ, paralyzed lips, retracted gums, and dribbling mouth, produce a picture which once seen is never forgotten. Such was the image portrayed in the Chinese leper, Santiago, number fifteen of my series. The deformities in the hands and feet, as seen in nine of my cases, were even more characteristic than those of the face, for there was marked feebleness in the arms, the forearms were wasted, the grasp weakened, the thenar, hypothenar eminences, and interossei melted away, and the *main-en-griffe* or "lepra claw" was produced; like changes occurred in the legs and feet, so that walking was greatly impaired, especially in two cases of nerve leprosy (lepra mutilans) where the toes were amputated by a process of what seemed to be dry gangrene; in a few cases the distortion of fingers and toes seemed due to what I believe to be interstitial absorption, where the shaft of the phalanges wasted more rapidly than the articular surfaces, without destruction, but merely a shrinking of the fleshy

part. A very striking feature is presented here, where the distorted, stump-like finger may be crowned with a talon-like nail, or the nail may be seen to spring directly from the knuckle as seen in Nos. 3, 4, 5, and 6 of my series of anesthetic cases. The course of anesthetic leprosy is much slower than that of the tubercular form and varies in length from ten to thirty, though cases are recorded where the duration extended to forty years. The average duration is thought by many to be eighteen years. The nerve cases up to the time of my seeing them had existed from one to fifteen years. Death usually takes place through marasmus, amyloid degeneration of the kidneys, or exhaustion resulting from enteric complications.

Tubercular or Nodular Leprosy.—This form existed in thirteen of the twenty-six cases studied by me, and it was learned that the preliminary prodromic period, of variable length, usually ushered in a tolerably well-marked macular stage (short, however, in comparison with nerve leprosy) with a smart attack of fever. The essential and most characteristic element in tubercular leprosy is the leproma. (See Fig. 2.) In my cases lepromata were invariably seen on the superciliary and malar regions of the face, chin, nose, lobes of ears, and less frequently upon the extensor surfaces of the arms, wrists, backs of the hands, thighs, and groins. The lobe of the ear seemed in my cases to be an early and favorite site for lepromata, as my outline figure cards show it in every one of the thirteen tubercular lepers studied. This observation is in accord with that made by Unna upon tubercular leprosy. The normal fate of the leproma is to soften in the center and to be absorbed, the usual result being a circular patch of smooth scar tissue, or after softening it may ulcerate and discharge a sticky, yellowish pus. When the discharge dries up the ulcer may heal underneath, leaving an irregular depressed scar. I was able to demonstrate the *Bacillus lepræ* in the ulcerating lepromata of the face in all of the tubercular lepers seen by me at the Lazaretto of Manila. The favorite seat of ulceration semed to be in those lepromata situated upon the malar and adjacent regions of the face, though I know of no particular reason for this, as those located upon the extremities are more prone to ulceration. My method was to use sterilized platinum wire in obtaining secretion from lepromata, and after placing this on a cover glass I followed this routine: (1) Fix by heat (passing through flame); (2) stain with carbolfuchsin solution (Zeihl's) for a few minutes; (3) wash in water; (4) decolorize with 5 per cent. sulphuric acid; (5) wash in water; (6) counterstain with aqueous solution of methylene blue; (7) mount and examine with microscope.

This affection is so terrible and the appearance presented by Filipino lepers is so frightful that, while in the writer's experience it has no counterpart, he can only compare the picture in these respects to cases of variola pustulosa hæmorrhagica as seen in the negro at Namapacan, Luzon.

It is well to note that in my tubercular cases the few cutaneous manifestations consisted of an eruption of erythematous spots or blotches which appeared and disappeared a number of times before the characteristic tuberculation developed. The macules were usually oval or circular in shape, of a reddish brown or coppery color, sometimes fading into a dirty yellow. In some instances the macules presented a purplish or vinous hue resembling Port wine discolorations; were slightly elevated and distinctly demarcated from the sound integument. Usually the skin of the face was thickened and swollen, presenting an appearance of edema. The extensive diffuse infiltration due in my instances to a coalescence of circumscribed patches, may remain permanent and instead of undergoing resolution become elevated into nodular excrescences, or the tubercles without going through a preceding phase of infiltration, may develop upon new surface. The tubercles vary in size from a pea to a walnut, and by aggregation may form elevated masses of considerable extent. While the forehead, nose, lips, chin, cheeks, and ears, the hands and extensor surfaces of forearms, are the sites usually affected, any portion of the body surface may be the seat of tubercular deposit except the scalp. The course of the tubercles and infiltration varies. They remain stationary with but little variation for months and years, the change being in the nature of slightly desquamating surface, or the color changing into a yellow or dark brown. Gradual involution may occur, having pigmented stains or scars. There

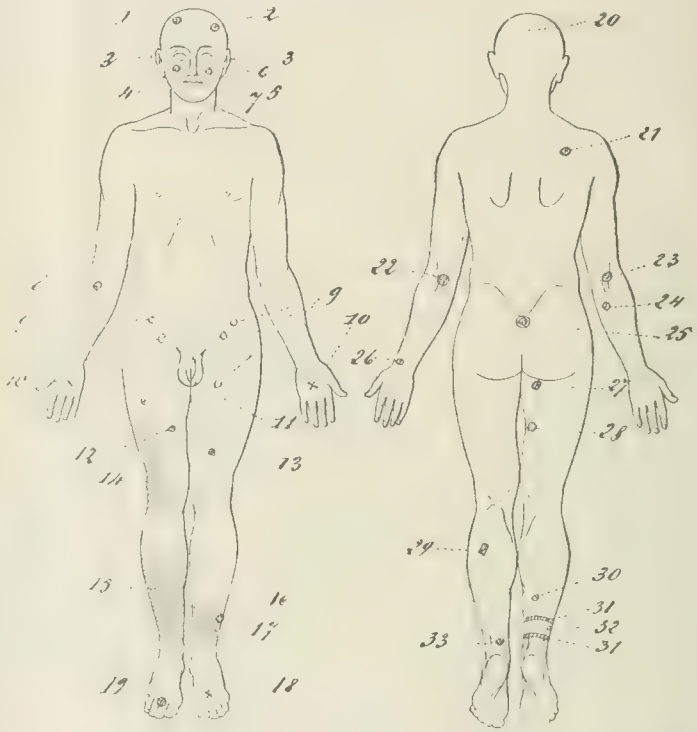

Fig. 2.—Tubercular (hypertrophic) leprosy: 1. Sweat spot, 1½ x 1 in.; 2, sweat spot 1 x ⅝ in.; 3, 3, ears enlarged 3⅜ x 1⅛ in.; there were two hairs on the left eyebrow, eyelashes completely lost; 4, elevated tubercle ⅝ x ⅜ in., with ulcerated spots in center; 5, tubercle ⅞ x ⅝ in., with red spot in center with whitish tip (new tissue felt); 6, bridge of nose sunken, vomer lost; 7, upper lip much swollen; 8, incipient elevation, 1-16 in., with smooth center; 9, 9, enlarged lymphatic glands, each the size of a walnut; 10, 10, palms and fingers of hand purple, as if from blood stasis; 11, numerous small elevations on scrotum, no hair except near thigh on either side; 12, tubercle 3-16 in. diameter; 13, dark ring ¾ x ⅝ in., with white center; 14, insensitive area, 7⅛ x 4 in.; 15, insensitive area 7½ in. long over the entire front of leg, skin splitting, elevations slight at present; 16, dark ring, ⅝ in. diameter, with white-tipped center, insensitive; 17, insensitive area 6½ in. long covering entire front of leg; 18, feet somewhat swollen, evidently from disease; 19, dark spot, 1¼ x ¾ in., with white center; 20, slight loss of hair; 21, black spot 1-3 in. diameter; 22, oval scar ¼ x 1 in., recent skin gone not ulcerated; 23, circular elevation 1⅛ in. diameter, insensitive; 24, dark ring 3⅛ x ⅜ in., with white line running through entire length, insensitive; 25, sweat spot 3 x 2 in.; 26, insensitive area 3⅛ in. diameter, with scab on center; 27, circular elevation 1 in. diameter, black, with white center; 28, black ring 1½ x 1 in., encircling white-tipped elevation; 29, smooth dark patch 1 x ⅞ in., white toward the center; 30, circular spot 9-16 in. diameter, dark blue with whitish center; 31, 31, elevated bands ¼ in. wide, dark blue in color; 32, circular elevation ⅝ in. diameter, reddish scab on top; 33, black circle 1½ x ⅝ in., with three white spots within.

may be a development of successive crops from the same region at more or less prolonged intervals. The tubercles, however, instead of disappearing by a process of resolution, may soften, break down, and disintegrate, forming shallow, indolent ulcers with a yellowish, somewhat offensive discharge.

The face was the seat of the most marked and characteristic development of tubercles, and in the advanced stages of some of my cases the infiltration took the form of prominent bosses or ridges divided by deep furrows; the lepromata ran together and caused much disfigurement due to the bulging out of the frontal and supraorbital skin upon

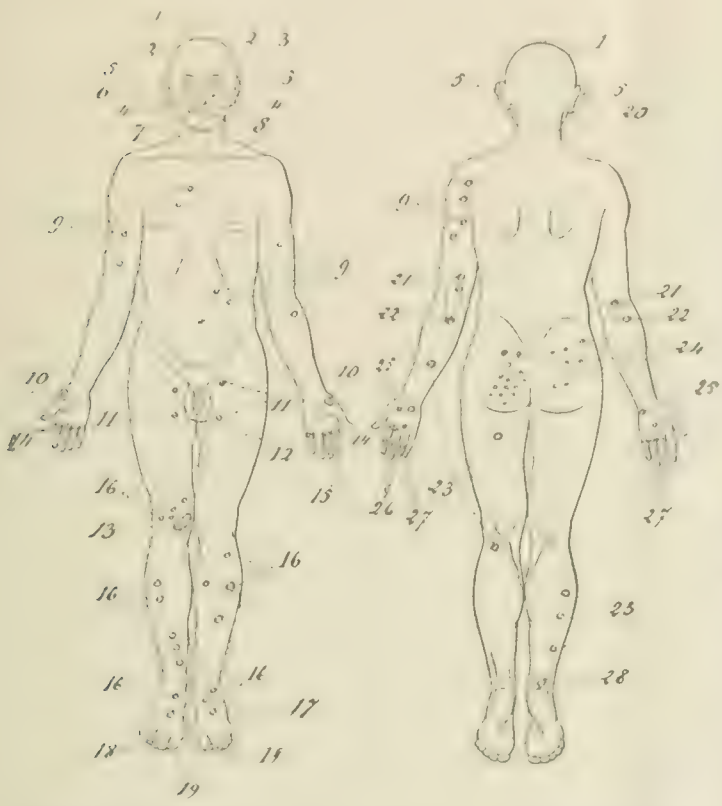

Fig. 3.—Mixed leprosy: 1, No loss of hair; 2, 2, eyebrows absent; 3, primary focus of disease; 4, 4, small nodules on face ¼ in. diameter; 5, 5, ears nodular and enlarged; 6, vomer melting away, process began four years ago; 7, mouth breathing, gums receding; 8, hair of moustache and beard lost; 9, 9, small raised nodules ¼ in. diameter, insensitive; 10, 10, flat nodules 2 in. diameter; 11, 11, lymphatic glands enlarged; 12, scrotum enlarged; 13, scar 2½ in. diameter, insensitive; 14, 14, ulcers ½ in. diameter; 15, second and third fingers of left hand flexed to a right angle, those of right hand partially flexed; 16, 16, 16, 16, tubercles ½ to 1 in. diameter; 17, legs enlarged, toes bulbous, feet swollen, and splay; 18, 18, toenails absent; 19, great toenails broken and shredded; 20, tissues of neck infiltrated on both sides; 21, 21, healed ulcers and leucospots of irregular contour about 1 in. diameter; 22, 22, ulcer over each olecranon 1 in. diameter; 23, 23, insensitive nodules ¼ in. diameter; 24, small, insensitive nodules ⅛ in. diameter; 25, 25, flat, insensitive nodules 1 in. diameter; 26, nodules 1 in. diameter; 27, 27, nails broken and shredded; 28, leucospot of irregular contour 1½ in. diameter.

which was situated superimposed nodular masses thrown into immense folds overhanging the eyes; the skin of malar cheek regions formed large cushion-like tumefied masses. The alæ of the nose broadened out associated with a flattening and sinking in of that organ; the lips were thickened and protruding, the chin swollen and heavy; the external ear greatly enlarged so that the lobes hung down (particularly in one case) in flabby, pendulous masses almost to the shoulders.

This repulsive, dusky, bloated, wrinkled, greasy countenance is very appropriately designated leontiasis.

Another strikingly characteristic feature of tubercular leprosy is the plaque, which is formed by the confluence of individual tubercles. The plaques are usually large in size, dark in color, may desquamate slightly, and are situated most commonly on the extensor surfaces of the limbs where they are said to last for years unchanged, always indicating the utmost chronicity of this type of the disease. The hair covering both tubercles and plaques usually becomes white, downy, or splintered, before falling out. The duration of nine of my cases of tubercular leprosy, where history was obtainable, ranged from one to eighteen years—the average duration being five and two-thirds years up to the time of my seeing them. Morrow places the average duration of this type of leprosy at eight years, Manson at eight to nine years. Death may ensue from pulmonary, renal, or intestinal complications, marasmus, and leprous exhaustion.

The writer has completely failed to observe among Filipinos that remarkable phase of leprosy described by Danielssen and Boeck as an acute form of this disease similar to acute tuberculosis. The manifestations as described by them are a continuous fever of some twelve days' duration, when raised, shiny, bluish spots appear over almost the entire body. The spots increase rapidly in size and firmness, become confluent and progress with such rapidity that in a few weeks they attain a growth which, in the ordinary form, it has required years to reach. The constitutional symptoms abate upon the appearance of the eruption, tubercles soften, and the affection becomes chronic. When the cutaneous eruption fails to appear, the patient usually dies in the course of a few days from pneumonia, pleurisy, or meningitis.

Mixed Leprosy.—Here the lesions do not differ in any way from those mentioned, hence this form of leprosy calls for no detailed description. (See Fig. 3.) This term is meant to imply an association of the anesthetic and tubercular types in the same person. While leprologists of the highest repute are agreed that most tuberculous lepers finally become anesthetic, the contrary is thought to be true to a far less extent, and a combination of both anesthetic and tubercular lesions may coexist in some from the beginning. The marked tendency of some of my old tubercular cases to pass gradually into the anesthetic form is quite in accord with the holding of Hansen and Looft, who think that this is the natural termination of all cases of tubercular leprosy; Impey believes, on the contrary, that every case of mixed leprosy is such from the very outset of the disease.

The physical condition which is the final outcome of the unfortunate victim of tubercular leprosy is so graphically portrayed by Leloir that I quote it here: "If the patient does not die of some intermittent disease or special complication, the unhappy leper becomes a terrible object to look upon. His deformed leonine face is covered with tubercles, ulcers, cicatrices, and crusts. His sunken, disfigured nose is reduced to a stump. His respiration is wheezing and difficult. A sanious, stinking fluid, which thickens into crusts, pours forth from his nostrils. The nasal mucous membrane is completely covered with ulcerations. A part of the cartilaginous and bony framework is carious. The mouth, throat, and larynx are mutilated, deformed, and covered with ulcerated tubercles. The patient breathes with the greatest difficulty and is threat-

ened with frequent fits of suffocation, which interrupt his sleep. His eyes are destroyed, and not only his sight, but his sense of smell and taste are completely gone. Of the five senses, hearing alone is usually preserved. Owing to the thickened and pachydermic state of the skin of the limbs, which gives to them the appearance of elephantiasis, and to the presence of ulcerating tubercles, crusts, and cicatrices, the sense of touch is abolished. Usually at this time the peripheral nerves are involved, so that the symptoms of both the tuberous and the anesthetic type of leprosy are present. The patient suffers excruciating pains in the limbs, and even in the face, while the ravages of the disease in his legs render walking difficult and even impossible. From fistulous openings in the hypertrophied inguinal and cervical glands pus flows abundantly. In certain cases the abdomen is increased in size on account of the involvement of the liver, spleen, and mesenteric glands. With these visceral lesions the appetite is irregular or lost. There are pains in the stomach, diarrhea, bronchial and pulmonary lesions, intermittent febrile attacks, and a hectic state. The peculiar smell, recalling that of the dissecting room, mixed with the odor of goose feathers or of a fresh corpse, was recognized but badly described by authors of the middle ages, who compared it to that of a male goat. This is the complexus of symptoms which the patient presents unless some fatal complication has come to his relief. In this light one can understand how, in the ancient poem of Job, leprosy is called 'the eldest daughter of death.'"

Pathology.—All the lesions of leprosy are now thought to be due, directly or indirectly, to the multiplication of the *Bacillus leprœ* in the tissues. As stated before, in length the bacillus is one-half to two-thirds, and in breadth one-sixteenth the diameter of a red blood corpuscle. The bacillus reacts to certain staining reagents (carbol-fuchsin, after treatment with mineral acids) similar to the *Bacillus tuberculosis* and the smegma bacillus, but stains more readily and is decolorized more quickly than the *Bacillus tuberculosis*. The bacillus is found in all the primary lesions of leprosy as heretofore stated, but is not necessarily present in the secondary trophic lesions of nerve leprosy or in secondary inflammatory effusions. A brief consideration of the pathology of the primary lesions will suffice.

Firstly, the leproma: the young leproma, upon section shows a smooth white glistening surface; when older, the cut surface presents a brown tint and the nodule may become harder, as the result of fibroid change, or softer when due to degeneration. The leproma differs from the granuloma of tuberculosis in being well supplied by blood-vessels, never undergoing caseation and, according to Hansen, contains no giant cells. This change in color to a well-defined brown is due to a number of brown granular bodies called "globi," in which Hansen says the bacilli have perished and become granular. As in other granulomata, the principal changes in the leproma are found in the corium; here the morbid process begins about the vessels, glands, and follicles. The blood-vessels are narrowed by cellular infiltration, and hyperplasia in their external and middle coats. An infiltration of the various layers of the skin may now take place, extending upward to the epidermis and downward to the subcutaneous tissue, which may become diffuse or nodular, and is composed of plasma cells, connective tissue cells, the characteristic lepra cells, and occasionally giant cells. The lepra cells are large ovoid cells, containing bacilli in clumps, held together by mucoid material. Early in the process the glands and follicles of the skin, through infiltration and hyperplasia of the cells, undergo a degeneration, followed by complete destruction and disappearance of these structures. The changes in the epidermis are secondary and the hypertrophy in the rete mucosum, the result of irritation and pressure from below, is followed later by atrophy, ulceration, and complete destruction. All throughout this infiltration the bacilli are very numerous, and a moot question, much discussed, is the relation of the bacillus to the lepra cell. Unna says they lie free in the lymph spaces and are never found in the cells. Leloir holds that some of the bacilli are free, while others lie within the cell. Hansen maintains that the bacilli are almost invariably included within the cell.

In the anesthetic form of leprosy the early pain and hyperesthesia are produced by the formation in the peripheral nerve sheaths of nodules of proliferative connective tissue which contains the bacilli. Later degeneration occurs, followed by anesthesia, as the result of increased pressure. Limited areas of sensation are retained where some of the nerve fibers have escaped pressure. Woit found that the cutaneous filaments of the peripheral nerves were degenerated, while there was little or no degenerative change in those filaments supplying the muscles, that the changes in the branches of the sensory nerves were ascending trophic degeneration, and that the degenerative nerve processes spread over the periphery, excluding entirely a central origin.

Treatment.—A large volume might readily be written upon the treatment of leprosy, but this would serve no useful purpose, except to exploit a long series of failures. So far as known all of the alleged cures have failed, when merely the test of time has been applied to them.

In the annual report of the Bureau of Health of the Philippines, 1904 and 1905, Dr. H. Brookman Wilkinson, physician in charge of the San Lazaro Hospital, reports a cure of one case of leprosy by the application of the *x*-rays in the following words: "There is absolutely no doubt that at least one case, No. 5, of genuine leprosy has been cured by the application of the *x*-rays." Chief Quarantine Officer Heizer, who is likewise the Health Officer of Manila, P. I., in the report of the Public Health and Marine Hospital Service, dated May 18, 1906, states under the heading leprosy the following: "The application of *x*-rays in two cases of leprosy treated at San Lazaro Hospital resulted in a complete disappearance of the leprosy bacilli, as far as could be determined by the microscopical examination of skin scrapings taken from former lesions, for a period of over six months. Examinations made of both patients three weeks ago again showed leprosy bacilli to be present. In view of the fact that these persons were confined with other lepers, it is not known whether they became reinfected or whether they simply had a relapse."

Unna of Hamburg has recently reported cures alleged to be due to the use of some preparation of mercury, but the crucial test of time has not been applied as yet, hence judgment is delayed. It is thought, however, that medical men who seek for success in the treatment of leprosy would do well to give up the attempt of curing a systemic disease of such well known character as this is through the medium of local applications of whatever kind.

The writer doubts exceedingly as to whether a cure will ever be found for leprosy, and certainly not till the biology of the bacillus has been thoroughly worked out, and our knowledge has been

increased relative to its life history. Until this is done segregation of lepers and isolation of children of leprous parents are the preventive measures which will give the best results.

THE SCOPE AND VALUE OF THE SANATORIUM IN THE ANTITUBERCULOSIS MOVEMENT.*

By HERBERT MAXON KING, M.D.,

LIBERTY, N. Y.

The rôle of the sanatorium in the antituberculosis movement may be considered from three more or less distinct viewpoints. First, from that of its relation to the cure of the disease as it exists; second, from that of its educational value in the community at large, and third, from that of its relation to the study of the various phases of the disease and its complications.

Before entering upon a discussion of these three relations in which the sanatorium stands to the crusade against tuberculosis, it may be well to inquire just what the sanatorium is. Notwithstanding the prominence which has been given to the subject in recent years, the most hazy, and often erroneous ideas, still exist, not only among the uninformed laity, but even among a considerable proportion of medical men as well, as to the combination of conditions, which make up the tuberculosis sanatorium. In a broad sense, any health resort is a sanatorium, and in such wise, as applied to tuberculosis, it is of course correct to refer to whole districts as sanatoria, as for instance Davos, Arosa, and St. Moritz in Switzerland, Saranac Lake, Asheville, Colorado Springs, Liberty, etc., in this country. However, the term is now better understood to refer to special institutions devoted to the care, treatment, and education of tuberculous invalids.

Of these there are two classes—the open and the closed sanatorium. The former comprises such institutions, public or private, as open their doors to patients bringing with them their own methods of treatment, or employing as physician whomsoever they will, and, while there is not infrequently in such establishments a resident house physician, he is without authority, and is usually employed to meet emergencies only. Thus it follows that often of two patients occupying adjoining apartments in an institution of this character, one may be found adhering closely and conscientiously to an ideal régime, while the other may be doing quite the contrary. Obviously, therefore, such institutions can scarcely be considered as more than medical boarding houses. They can have no educational value worth mentioning, and can offer no advantages for scientific investigation.

The "closed" sanatorium, on the other hand, is under the absolute government, so far as the treatment of patients is concerned, of its medical officers. It is here, and here only, as I shall have occasion presently to illustrate, that we find that system, discipline, and method essential to the best results. Under such conditions not only is the effect of treatment more certain, but, through constant demonstration of its value and the comparative reliability of its statistics, the sanatorium carries an incomparable educational influence out into the community at large; and finally, as I shall later endeavor to point out, more especially we find in such an institution both the material and the facilities for scientific investigation into the causes, nature, and treatment of the disease.

For the present purpose, therefore, I shall use the term sanatorium in its most restricted sense, as applied to the "closed" institution for the treatment of tuberculosis, under the exclusive medical government of its resident staff of physicians.

The sanatorium must necessarily restrict the admission of patients to such as give fair promise of material improvement, or else it inevitably degenerates into a home for incurables, and utterly destroys its *raison d'être*. Failure to comprehend the necessity for preserving an unsentimental adherence to this principle is the cause of much misunderstanding on the part of outside physicians and an emotional laity. For similar reason the sanatorium is often misunderstood, and more or less bitterly criticised for discharging a patient because after fair trial the latter shows no response to treatment, thus giving rise to the unjustifiable idea that the chief, if not the sole, object of the sanatorium is to make a fine show of statistics.

It must be borne in mind that the sanatorium is an institution whose chief function is to restore health so far as it is possible to do so, but that the possibilities in this direction have their limitations, and that when these limitations have been reached in individual cases, it becomes the duty of those in charge to substitute for such cases others whose condition justifies admission. This is especially true of State and other charitable sanatoria whose applications for admission far exceed the capacity of such institutions, and where the greatest good to the greatest number is the object sought.

In a word, the sanatorium is an institution intended to provide for the tuberculous invalid, who is susceptible of cure or improvement, the most approved means for combating his disease and restoring his health. Such institutions do not necessarily depend upon special climatic advantages, nor upon specific methods of treatment, though both of these may often serve as valuable assets. Their chief advantages and paramount therapeutic value, however, lie in a carefully-studied régime and the superior facilities which they offer to individualize systematically the treatment of a considerable number of consumptive invalids.

Having now, I hope, reached a common ground upon which we can all agree as to just what the sanatorium is, let us consider its scope and value in the present widespread movement against tuberculosis.

I have pointed out that this relationship may be considered from three points of view, of which let us consider, first, that of its therapeutic value. It is no doubt true that many tuberculous invalids recover health outside the precincts of the sanatorium, and it is equally true that failures are not uncommon within those precincts. But I must contend, notwithstanding, that when success attends the struggle in the former case, it is very largely a matter of chance. It must indeed depend upon a no less happy than rare coincidence of superior intelligence on the part of the patient, wise judgment on the part of the physician and friends, and a fortunate choice of environment, a combination which I am sure you will agree is not often found. Whereas failure to succeed under the conditions which prevail in a well-appointed sanatorium may be ascribed to inherent causes beyond our ability to control in the present state of our knowledge, and these failures in no wise weaken the argument in favor of the so-called sanatorium method.

The individual who for the first time learns that he has developed tuberculosis is in the vast majority

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of cases shocked, and to some extent demoralized. He does not necessarily *feel* sick, and is often resentful of the diagnosis. Very naturally he has little or no information on the subject of the disease or its treatment, and the suggestion of a sanatorium arouses a storm of protest. Thus, at a time when he is most in need of special instruction and vigilant skilled supervision, he compromises with the situation, and more often upon the advice of some well-meaning but misguided friend than upon that of his physician, he seeks the open health resort, where upon his own initiative he consults a physician or not.

Of course, he carries with him ideas, more or less fixed, concerning the value of climate, sunshine, open air, and food in the treatment of his disease, and he proceeds to apply these elements of treatment according to his imperfect judgment, usually calling upon the physician whom he has selected more with a view of taking a periodical account of stock, as it were, than with that of studying his mistakes and the means of avoiding them.

In the open health resort one sees innumerable instances of this kind—patients who for any one of a dozen good reasons should be in bed, riding horseback, climbing mountains, playing golf, gambling, drinking, or indulging in what would, under other circumstances, be perfectly innocent and rational amusements, but which under the circumstances can only fall into the category of blunders and vices. Or, what is even more shocking, one is forced to see—usually when it is too late to remedy—instance after instance of the consumptive, whom care would have given fair promise of cure under suitable conditions, falling a victim to the allurements of the patent medicine and the charlatan.

There is a perfectly natural, though none the less fatal, tendency on the part of the afflicted to choose at almost any risk a "short cut" to health in preference to the longer but more rational avenue—a tendency to combine the maximum of pleasure and comfort with what is at best a difficult struggle. It is one of the hardest lessons that the consumptive has to learn that a cure of his disease cannot be attained by way of the primrose path—that it involves sacrifice of much perhaps that he deemed essential to his happiness, or even to his tolerable existence, and that these sacrifices must be made voluntarily, and even enthusiastically, if he hopes to make them bear fruit.

In this summing up of the relative merits of sanatorium treatment of tuberculosis, I am ever reminded of an address delivered by Prof. Clifford Albutt at the British Congress of 1901. In the course of this address, Prof. Albutt, speaking of the sanatorium method, says: "The method was worked out in a sanatorium created for the purpose; it has been tested and perfected in sanatoriums, and, if now it can be carried on outside a sanatorium, which is not too readily to be admitted, this is so only by bringing the skill and the conditions of the sanatorium into the home. I should look with little confidence on the home treatment of a phthisical patient by a physician unversed in the practice of the sanatorium, and by a patient who had not had at least a month's training within its precincts. It is, as it were, to tell a boy at home to read his Cæsar and his Xenophon, a little Euclid and algebra, to pat him on the head, bid him be good and industrious, and promise to call in a week or ten days to see how he has got on."

This, it seems to me, is the whole matter in a nutshell. The youth who studies at home undoubtedly has a better time of it than does he who takes his place in his class at school, and has constantly over him a competent instructor to teach him when, how, and how much to study, hears his recitations, commends his successes, and checks his mistakes. But in the end it is inevitable, except in rare instances of individual devotion, which youth best succeeds. To my mind this analogy is quite to the point.

As for bringing sanatorium conditions into the home, that, of course, can be done, but it means converting the home into a sanatorium. He who is fortunate enough to be unhampered by questions of economy may do this, taking with him to such climate as shall be selected his nurse or his physician, or both. Assuming that the latter have a sufficient acquaintance with, and experience in the method, and that the patient yields obedience and cooperation, the results perhaps *may* be equally good. But the proportion of consumptive invalids so situated as to make such a procedure practicable is so small that this alternative may be left out of present consideration.

There is, however, another phase of the subject which may not be ignored. Tuberculosis, even in its earlier stages, is not susceptible of a cure under the most ideal conditions within a period of a few weeks. It has been demonstrated that an incipient lesion not larger than a few centimeters in diameter, and well circumscribed, requires for its eradication not less than two years, although the patient may to all appearances be perfectly restored to health in a much shorter period, and, as the combined capacity of all of the sanatoria in the country represents but a very small fraction of the number who have the disease, it is obvious that, however desirable it might otherwise be to keep patients in the institution until a cure be effected, as a matter of fact such a course is impossible.

In Germany, conscious of this condition, public sanatoria restrict the term of residence to a few weeks or months at most, and rely upon the educational features of this term of residence to effect a cure after the patient has left the institution. From the standpoint of the individual patient there is no doubt that this plan is relatively less satisfactory. For the tendency to relax that self-control, which is so necessary to success, together with the many temptations which surround the idle individual who is, so to speak, but unconsciously sick, combine against his welfare, and often undo the work so well begun in the sanatorium. Nevertheless, under existing conditions, it is the only practicable recourse left to the charitable and public institutions of this character.

It is obviously more desirable from every point of view to give *all* cases a fair start in the cure, and an education in proper self-care and the protection of others, than it is to carry from two to five per cent. of the tuberculous poor through the whole fight, leaving the other ninety-five or ninety-eight per cent. to "go by the board," so that, while their statistics must necessarily suffer thereby, the broadest scope of usefulness and the highest function of such institutions will be best developed when the term of residence is restricted to a few months. At the same time I am of the opinion that it is safer to err on the side of too long a residence rather than on that of too short a one. As a matter of fact, we are, and for some time shall continue to be, for one reason or another, obliged to care for a considerable proportion of these patients at their own homes. But I still contend that wherever the choice is possible it should be in favor of treatment in the sanatorium.

Let us now examine into the rôle of the sanatorium from the view point of its educational value to the community at large. This relationship presents itself in three phases: (*a*) The educational effect upon the immediate community in which the institution is located; (*b*) The educational influence exerted upon the distant communities, from which patients are recruited, by the latter upon their return to their homes, and (*c*) the educational influence of published statistics of sanatoria.

The establishment of a sanatorium in a locality is in a large sense an indorsement of the advantages of such locality for the treatment of the tuberculous invalid, and many patients, who for various reasons do not come directly into the institution, soon flock to the neighboring hamlets for the purpose of availing themselves of these advantages. Thus the sanatorium becomes an object lesson, the influence of which extends far beyond its own immediate precincts. Its salient features and its methods are observed, studied, and applied as far as possible, and those who directly and indirectly thus benefit by its treatment far outnumber, as a rule, those whom its capacity makes it possible to entertain as resident patients.

It would be comparatively difficult to induce an uninformed patient to put in practice some of the simplest and most necessary features of the sanatorium régime on the strength of the advice of an individual, but when that patient observes that such features are authorized and enforced in the practice of the institution, he acknowledges the authority, and, although he may not at the moment understand the rationale, he will usually lend his cooperation. In this way the sanatorium has a direct influence on the prevention of the spread of the disease among both the native population and the healthy sojourner in its vicinity. It has not, of course, the authority without, which it has within its own precincts. Nevertheless that its teachings extend beyond its boundaries is evidenced by the contrast in hygienic conditions prevailing on the one hand in a popular health resort where there is not a sanatorium, and on the other in a health resort which has grown up around a sanatorium.

As for the influence exerted by cured, arrested, or even improved ex-patients upon the communities in which they live, it is so commonly observed today that it must be conceded by any one whose attention has been drawn to the subject, although it is not always attributed to the sanatorium.

Let me cite an instance to illustrate what I mean. In a certain northern manufacturing town a year or two ago quite the sensation of the winter was created by a young woman who had built an outside sleeping porch and occupied it through the whole winter. The local newspapers took it up, of course, and made it serve for columns of reading matter with illustrations, not only on the subject of sleeping out of doors, but as well upon the whole régime of the sanatorium in which the young woman had been treated and educated. A great deal of interest was manifested in the community, which culminated in a local antituberculosis crusade and the organization of a society to disseminate knowledge along that line. It is too early to predict what the actual effect upon the vital statistics of this community will be as a result of the movement, but it is safe to say that it will be favorable.

Now, I do not say that such a movement might not have otherwise developed in this community, but I do contend that the example of sanatorium methods which this young woman introduced was the greatest possible stimulation to that movement. It not infrequently requires a sensational illustration to give an impetus to the most needed reforms.

Even the patient who has made no improvement in the sanatorium returns to his home possessed of the knowledge which his institutional training has given him, and which enables him to extend the gospel of improved hygiene throughout the community in which he lives. It is a point which, it seems to me, should be brought to the attention of every sanatorium patient before his discharge, that, upon leaving the institution, he carries with him a substantial influence for good which it is his duty to exercise in the cause of prophylaxis.

Finally, in this relation we have to consider the influence of the published statistics and other publications emanating from sanatoria upon the community at large. From the statistics the public learns that a considerable proportion of consumptive invalids recover health more or less completely, and are enabled to return to their homes and become useful members of society. It is also demonstrated beyond peradventure by these statistics that the earlier the disease is recognized and brought under treatment the greater is the chance for getting it under control. One cannot, I think, examine the statistics of the sanatorium without being inspired with a hopefulness of view regarding the future of phthisio-therapeutics.

The annual reports of most large sanatoria are widely distributed, and there is no doubt that in the majority of cases they excite a lively interest among those to whom they are sent. That these reports have a very decided educational value is almost certain. They lead to inquiry and often to investigation, which, by throwing light upon the whole subject of tuberculosis, cannot fail to be advantageous to the antituberculosis movement.

I need hardly more than refer before this audience to the infinite amount of good to the cause which has come from the publication of the *Journal of the Outdoor Life,* and, while this is not, strictly speaking, a sanatorium publication, it emanates from a sanatorium, and the spirit which inspires it is the sanatorium spirit.

In this connection, I must call attention to another instructive and certainly valuable feature of the sanatorium, and that is the demonstration which it affords of the fact that a large number of tuberculous invalids may dwell together as a community without danger of propagating the disease among their healthy coresidents, providing proper precaution be observed. Without being so generally recognized, I think this is one of the greatest and most needful lessons which the public at large can learn from the experience of the sanatorium.

I am sure that a more general emphasis of this very comforting fact would aid in no small degree the present crusade, and would do much to counteract the many deplorable effects of what has been aptly referred to as "phthisiophobia." In a word, then, the sanatorium demonstrates to the community at large that tuberculosis can, in a large measure, be cured; that in many cases not susceptible of a cure a useful life may be indefinitely prolonged, and that under suitable precaution the proximity of diseased individuals is not a menace to public health.

And now I wish to say a word regarding the rôle of the sanatorium in its relation to the study of the disease itself and its complications. This occasion does not permit me to consider this phase of the subject exhaustively, but one or two points there are which, it seems to me, should be brought out. With all that has been brought to light regarding tuberculosis since Koch's great discovery of the tubercle

bacillus, there remains much that is obscure and much that has so far eluded investigation as to the etiology and natural history of the disease, and undoubtedly much yet to be learned as to its treatment.

There are also many questions of metabolism which have a direct bearing upon tuberculous diseases, and which are at present only imperfectly answered. The problems thus suggested must, it is true, be largely worked out in research laboratories which may or may not be associated with sanatoria. But many of these will require for their complete solution a considerable amount of clinical material, which is not, and cannot, be available outside the precincts of the sanatorium. Here is unquestionably a field of usefulness, which so far has been but partially developed, but which must have a very decided value in future investigations along this line.

The sanatorium is not alone a school for the patient, but quite as much a school for the physician. Every year brings forth new suggestions and new discoveries, or old ones dressed up as new, as applied to tuberculosis, and the crucial test of the value of these can be made more authoritatively in the sanatorium than anywhere else.

Both in the laboratory and in the examining room of every sanatorium worthy the name data are constantly accumulating, which must have, and does have, a very decided influence and value in the treatment and prevention of the disease, and this must continue to be the case until such time as our whole conception of tuberculosis shall be revolutionized.

Finally, then, to sum up in a word:

The sanatorium (*a*) offers the tuberculous invalid the most practical, indeed the *only systematic*, method of fighting his disease and acquiring hygienic education in its prevention; (*b*) it is a most valuable educational factor, not only in the immediate community in which it is located, but to a very great extent in the community at large, and (*c*) it has a definite and important place, which can scarcely otherwise be filled in the study and investigation of the disease and its complications.

In these three relationships, then, the sanatorium possesses a scope and value of vital importance in the present great antituberculosis movement, and I can but believe that whatever the future may have in store for it, the sanatorium must always hold a place, and a vitally important one, in this great movement.

PROSTATECTOMY IN DIABETES.*

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THE beneficent results of prostatectomy are to-day too well known to need comment. In a former paper on "Prostatectomy Under Laughing Gas" (*Journal American Medical Association*, May, 1904) I stated that until recently the chief contraindications to the performance of prostatectomy were the dangers resulting from first, the general anesthetic; secondly, hemorrhage; thirdly, shock. "By the use of laughing gas the great objection of a general anesthetic is at once removed. If, in addition, we do rapid work, then all three of the objections are removed. A prostatectomy done under nitrous oxide in from eight to fifteen minutes is not accompanied by any dangers from the anesthetic, the hemorrhage in those few minutes is very moderate, and there is no shock."

So we have gradually been widening the field of prostatectomy under gas, and have been extending the benefits of the operation to very old men, even though they have cystitis and nephritis. We have found that if the operation be performed at two times, the bladder being opened at the primary operation under local anesthesia, then even cases desperately ill with marked general infection can be completely cured. I would refer here in passing to a patient of Dr. H. S. Stark whom I operated on three years ago. Mr. M., a gentleman of seventy-five years, had been catheterizing himself for five years and had had numerous attacks of cystitis and orchitis. He was having daily chills, high fever, irregular pulse, and severe general depression. He had to catheterize himself every two hours, and the urine contained 50 per cent. of pus. In view of the man's desperate condition, I drained the bladder for eleven days through a suprapubic incision and then removed the prostate. He has remained completely cured.

But there is one class of cases that has, by physicians as well as surgeons, been considered a *noli me tangere* for prostatectomy. I refer to the diabetic patient. Frequently have we heard doctors say that they would like to advise certain patients to have their prostates removed, but they had diabetes; and accordingly operation had been advised against. In a similar vein, Tuffier of Paris, at the recent Fifteenth International Medical Congress, said: "Neither old age nor gravity of the patient's general condition contraindicated operative treatment, but diabetes and albuminuria are to be regarded as rendernig operation inadvisable."

The diabetic patient facing a prostatectomy is, like all other patients, exposed to the three dangers above mentioned, to wit, the anesthetic, hemorrhage, and shock. Are there any dangers peculiar to the diabetic? Yes; two; first, the danger of coma, and secondly, the danger of infection to which all diabetic patients with wounds are exposed. We all know that in a certain number of cases, even following minor operations, diabetic patients go into coma and die. Even a prolonged ether or chloroform anesthesia, not accompanied by any operation, may bring about a fatal coma. Coma, then, is a danger rather of the anesthetic than of the operation. It surely is dangerous to give a diabetic patient ether or chloroform for half an hour or longer, in order to remove his prostate. The mortality would certainly be large. But if we can remove the prostate under laughing gas in about ten minutes, need we, then, fear diabetic coma? We can do still better and shorten the time of anesthesia still further by dividing the operation into two stages. At the preliminary operation the bladder is opened through a median suprapubic incision under local anesthesia. We have done this in some cases without using any anesthetic. The simple cystotomy can be done rapidly and is not very painful. After a few days the prostate can be removed through this incision under gas in a very few minutes. In a case of Dr. Dinkelspiel's the operation was done in two sessions on account of active hemorrhage. The removal of the prostate at the secondary operation required less than two minutes. We have on several occasions noticed that the gas anesthesia can be discontinued for a few minutes during the operation. Sometimes we have requested the anesthetist to stop giving the gas as soon as the bladder was opened; that is in from three to five minutes. During the

*Read before the Metropolitan Medical Society of New York, November 27, 1906.

actual shelling out of the prostate it is not necessary for the patient to be fully anesthetized. The retching of the patient when coming out of the anesthetic is often a help at this stage of the operation. As no ligatures or sutres are employed the patient need not be under the anesthetic after the bladder has once been opened. Need we fear diabetic coma under such conditions?

Regarding the danger of wound infection, it can, we think, be reduced to a minimum by the preliminary incision and drainage of the bladder. This can be combined with the administration of urinary antiseptics, both before and after operation, and daily bladder irrigations. In one nondiabetic case we allowed eleven days to intervene between the opening of the bladder and the removal of the prostate. Following the prostatectomy continuous bladder drainage is kept up until the urine becomes clear. Then the tube is removed, and thereafter the bladder is irrigated daily, at first through the wound and later through the urethra.

Regarding the urinary antiseptics, urotropin is probably the best to give before the operation. As soon as the wound has been made, it should be discontinued, as it frequently causes a slough to form even in nondiabetic cases. We have made it a routine practise to give salol and benzoic acid in half gram doses three times a day during the entire after-treatment, and we have been gratified with the results.

A word should be said in regard to antidiabetic diet. When the surgical disease is the result of the diabetes, as in cases of gangrene, a strict diet is probably more indicated than in the class of cases under consideration. Moreover, we must not lose sight of the fact that we are dealing here with men of advanced years, who mostly stand the diabetes very well. Further, these old men generally come to the surgeon after they have had repeated attacks of cystitis. The general condition, at least in the cases we have had, has been none too good. So it would seem to be questionable whether we ought to put these cases on a strict diet before the operation. Their nutrition would suffer, and though we might be able to reduce the percentages of glucose in the urine, we would be dealing with a two-edged sword. There is no objection to a moderate antidiabetic diet during convalescence, but it probably is not necessary. One of our patients was put on a strict diet after operation and the glucose disappeared for two weeks, but later reappeared. In a recent case, on the day of operation the urine contained three and two-tenths per cent. of glucose besides diacetic acid. The old gentleman of seventy was not restricted as to his diet, and the wound healed with surprising rapidity. Regarding the administration of sodium bicarbonate before operation, we can see no objection to its use, although we have not given it in any of our cases.

We have not been able to find any recorded cases of prostatectomy done in the presence of diabetes. Our text books teach that diabetes is an absolute contraindication to the removal of the prostate. The same belief is held by most physicians. And we must confess that we were formerly of the same opinion. It was only the wretched life that these old men, with their infected bladders led, that prompted us to offer them the benefits of the operation. The first one of these patients was told of the dangers of the operation, in fact they were rather exaggerated, but he declared he was not willing to continue living as he had, and was willing to take any chances. He not only made a complete recovery, but has remained cured, as far as bladder and prostate are concerned, for over three years. He still has diabetes, but at sixty-six he is hale and hearty, and a most grateful patient.

Case I.—Mr. S. S., sixty-three years old, was referred to me through the kindness of Dr. S. Breitenfeld. For several years he had had as much as one and a half per cent. of glucose in his urine. Five days before the operation, on arising in the morning, the patient, much to his surprise, was unable to pass any water. Dr. Breitenfeld was compelled to catheterize him regularly thereafter. Catheterization was painful, and was accompanied by some bleeding. The finger in the rectum revealed a large, very tender prostate. The urine was acid, specific gravity 1034, containing a trace of albumin, one per cent. glucose, and many red blood cells. Operation on September 4, 1903, under laughing gas. The bladder was opened through a suprapubic incision and the prostate removed in one piece. On account of the diabetes it was deemed well to shorten the anesthesia to a minimum. Accordingly no sutures were employed. A rubber tube was introduced into the bladder, and the wound was strapped with zinc oxide plaster. The entire operation lasted eight minutes. The prostate was as large as an orange, soft in consistency and the prostatic urethra passed through it near its anterior surface. During the first three weeks as much as eight-tenths of one per cent. of glucose was frequently found in the urine. The man was put on a strict diet, and the glucose disappeared for a time. Sounds were passed at regular intervals. The wound healed slowly but steadily, and the man was able to go home with a small sinus, on October 21, 1903. After leaving the hospital the glucose reappeared in considerable amount, and probably delayed the healing of the sinus. The man was again put on a strict diet, but the glucose persisted, although in smaller amounts. Two months after the man left the hospital his wound was completely healed. He could hold his water two and a half hours in the daytime and six hours at night. There was only a dram of residual urine. It is now over three years, and the man his remained in the same excellent condition. This is, we believe, the first case of prostatectomy done on a diabetic patient. The result was certainly gratifying.

Case II.—This was a patient of Dr. Khodoff's. The doctor had frequently found glucose in the urine. For full particulars of this case the author would refer to his former paper on prostatectomy under nitrous oxide, referred to above.

Case III.—Mr. S. L., seventy years old, was referred to me through the courtesy of Dr. Isadore Cohen. At the age of twenty-five he had an attack of pericarditis, lasting three weeks. At the age of forty-eight he had an attack of dengue. For the past three years the patient had had frequent attacks of malarial fever. For over twenty years he had had some difficulty in urinating. Fifteen years ago he had been told that he had some prostatic hypertrophy. Three years ago the patient began to be troubled with slight incontinence of urine. The urine would begin coming in small drops, with no sensation. This condition gradually became aggravated. During the three weeks prior to the operation there was a constant desire to urinate, accompanied by a burning sensation in the bladder, and dribbling of urine. During this time the patient had to be catheterized at regular intervals, although he was able to pass a little urine voluntarily. His appetite became poor, he suffered from insomnia, and lost weight. There were twelve ounces of residual urine. The urine contained 3.2 per cent.

of glucose, diacetic acid, many pus cells and a few red blood cells. Operation on July 12, 1906, under laughing gas. The bladder was opened through a suprapubic incision and the prostate shelled out in one piece. There was very little hemorrhage. A few sutures were introduced into the fascia and muscles, and a drainage tube left in the bladder. The entire operation took ten minutes. The prostate was the size of a large egg, and the urethra ran through its center. Three days after operation the man sat up in a chair. Eight days after operation the tube was removed from the bladder and a catheter inserted through the urethra and left in place. Three weeks after operation the man began to pass small quantities of urine voluntarily. A few days later he left the hospital. A small abscess in the left testicle was the only complication. The patient recently remarked that he was passing his urine better than he had for twenty years. During the convalescence the urine frequently contained more than three per cent. of glucose, together with diacetic acid. However, we did not restrict the diet, and yet recovery was rapid and continuous.

The cases we have reported are few in number. My apology for presenting them rests in the importance of the subject and in the absence of other reported cases. If we refuse these poor old men the benefits of operation, we are condemning them to an existence, the misery of which can only be appreciated by those who have seen their suffering. There are few more pitiable pictures than that of these old men who catheterize themselves day and night, sometimes as often as every hour in the twenty-four. Sooner or later they infect themselves, and then their misery is complete. The writer had this picture in mind when he decided to publish his cases, in the hope that it would help to awaken interest in a somewhat neglected corner of the brilliant field of modern prostatic surgery.

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THE ROLE OF SUGGESTION IN THERAPEUTICS.

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ASSISTANT PHYSICIAN TO THE SHEPPARD AND ENOCH PRATT HOSPITAL.

Specifically, suggestion or suggestibility, following Dubois' phraseology, indicates that faculty of mind which permits anyone to be persuaded, by no matter what process, of the existence of a fact, of the justice of an idea, or of the excellence of a determination. Suggestibility then is a function of mind, and must be therefore coeval with it, and qualitatively and quantitatively variable with it, in respect to mental development and physical environment. We are dealing with a quantity quite difficult to gauge which enters our daily lives, colors our sensations, shapes our actions, and creates illusions which enter into our mentality consciously or subconsciously, and against the influence of which we have so much difficulty in defending ourselves, try as we may.

The existence of this mental factor, as well as the fact that it could be used to influence the thought and conduct of an individual, was undoubtedly recognized in the earliest times. We trace it in the religious rites of Egyptian priests, it was appreciated and practised by Christ, Mohammed, and other founders of religions, as well as by their apostles and disciples. Objectively we can see the important participation of suggestion in such things as the belief in miracles and the performance of wondrous cures by laying on of hands, etc. In the Middle Ages suggestibility and its correlates, credulity and superstition, reached a high degree of development, due on the one hand to the enthralling influence of the church, and on the other to the repression of learning and its moulding to conform with the existing religious dogma. Consequently most of the evidence demonstrating the extent of popular suggestibility was of a religious nature, for example the crusades and the furor which swept over Europe which preceded and inaugurated the movement, pilgrimages to places of special sanctity, certain religious rites and ceremonies, cures by divinely gifted persons, by laying on of hands, etc., blessing of places and objects, consecration of water, etc., etc. But many were nonreligious, such as cures by the King's touch and the belief in charms and amulets. Further the working of suggestion may be seen in the occurrence of dancing and gyratory manias, epidemics of chorea and hysteria, witchcraft, and the practise of the Black Art. The study of all the manifestations of suggestion form an interesting part in the history and anthropology of all peoples. To trace its numerous ramifications would be almost an endless task, and would lead us too far afield in our subject. That the primitive credulity, suggestibility, and superstition as well have been handed down into the mental life of to-day abundant examples will show. We find it often existing unmodified by social evolution and untouched by the progress resulting from education and general enlightenment, although for the most part it has been considerably influenced by these factors. Even to-day pilgrimages are made to Jerusalem, Mecca, Lourdes, Holy Hill, and other shrines, and remarkable benefits and cures are obtained. A belief in the efficacy of consecrated articles, relics, etc., and even in exorcism and magic still persists in the minds of many.

Newer innovations and modifications have sprung up. The power of suggestion plus credulity has brought into prominence such people as Blavatsky, Mary Baker Eddy, and John Dowie, and have enabled them to amass followers and to found Theosophy, Christian Science, and Zion City. To this class also belong other isms, such as mind reading, telepathy, and spiritualism. To this same influence the spread and prevalence of fads of late years is due.

Especially characteristic in America is the growth of the patronage of patent medicines and of the advertising specialist with his rheumatic rings, electric belts, and various other noxious and innocuous medication. Quacks, fakirs, and charlatans of all kinds, medical and nonmedical, everywhere abound, and in their various ways utilize the power of suggestion. In all these things whatever success is achieved (and often startling it is) and whatever benefit the client receives, the common basis of it all is suggestion.

I have endeavored to sketch a brief review of what this mental attribute has produced for good or for ill as it has steadily evolved, pursuing its course undirected, its exact psychological nature for a long time undefined and unexplored.

It would be interesting to know at just what point suggestive influence was first used by the fathers of medicine. We know that the study of medicine began in superstition, and that the crude physical and medical methods employed left na-

ture and blind faith to play the major rôle. We have seen how this influence largely became the property of magicians and sorcerers who associated with it occult doctrines and irrational methods of deception. Gradually, however, physicians began to recognize the value of this power and to avail themselves of it in the treatment of certain diseases. In point of time Mesmer, the descendant of the magnetic healers, was the first of these; his practise, however, was largely mixed with charlatanism. Shortly after him appeared Hansen. Both of these used suggestion in the form of hypnotism. Hansen did much to awaken the interest of physicians throughout Europe in the subject. But both chiefly occupied themselves in popularizing the subject by giving public performances.

It is important to note that the beginning of scientific inquiry into the thorough-going effects of suggestion began with the investigation into the phenomena of hypnotism, which was at that time still regarded as a dark power or a simple deception. It remained for Braid, Liébeault, Charcot, and Bernheim to lift the whole subject out of the realm of superstition and prejudice, and to elucidate the nature of hypnosis. These investigators placed it on a scientific basis, and showed its medical and therapeutic worth.

The first perhaps to form a clear conception of hypnosis was the English surgeon Braid, who used it in the treatment of some of his patients. About the same time Liébeault of Nancy also used hypnotic suggestion in practical therapeutics. He wrote comprehensively on the subject, and was the founder of the school of Nancy. With Bernheim and other followers he created a remarkable interest in the subject throughout the scientific world. Their investigations showed that the basis of hypnosis was a prolonged state of openness to suggestion and that nearly 90 per cent. of all individuals were hypnotizable. A view considerably different to this was taken by Charcot and his school of Paris, who held that the susceptibility to hypnosis revealed a pathological mental condition, and as such only a small proportion could be hypnotized. Both schools, however, admitted the rôle of suggestion in the State, and both used hypnosis in therapeutic practice. In the height of its vogue hypnosis was supposed to offer almost unbounded therapeutic power, but it was soon seen that it had its limitations, and the past twenty years have witnessed a steady decline in its practice. It served its purpose, however, in demonstrating its basic underlying principle—suggestion—and paved the way for a rational psychotherapy in place of a practise which smacked of charlatanism, with its mystic passes and other adjuncts, and which was often exploited unprofessionally and unethically.

Almost a century before the heyday of hypnotism Pinel expressed clearly the value of suggestive measures in the treatment of the insane, and it is he, to whom we owe so many other reforms in psychiatry, who may be considered the father of psychotherapy. Before Pinel's day physical treatment was thought the only thing of value. It was he who introduced isolation. Then with this assistance after making a psychological analysis of symptoms and etiological factors, he made an appeal to the patient's logical powers and endeavored by means of rational suggestion to lead him back to mental health. Pinel perhaps laid too much stress on the value of suggestive influence in the severer psychoses or at any rate did not specify in what groups this method was peculiarly useful, namely the psychoneuroses. It remained for a later day to demonstrate why this is so, since in the insanities we have the least degree of suggestibility while mental health represents the highest. Somewhere between these extremes lies the psychoneuroses.

For many years after Pinel physical and medical measures reigned supreme in mental medicine, and psychotherapy received scant attention. The allied medical sciences were making rapid strides; with the development of physics and chemistry came advances in physiology and physiological chemistry. Pathology and bacteriology laid bare the causal agency in many diseases and suggested a specific curative method. In the bodily diseases, where a specific medicinal treatment could not be found empiricism stepped in and the ever-widening pharmacopœia was searched for remedies, and these were supplemented by various physical measures, including electricity in different forms. Everything in therapeutics was medical or physical, and bodily ills received all the attention. In mental medicine the same empiricism was applied, and little or no benefit was derived. At this period came Weir Mitchell who, thoroughly imbued with the inadequacy of the prevalent methods in treatment of nervous and mental disease, introduced isolation, overfeeding, and massage combined with psychotherapy. His success in the treatment of the psychoneuroses is of widespread renown. In this system suggestion was considered of secondary importance to isolation and overfeeding and certain other physical methods.

Practically all cases of the psychoneuroses were formerly subjected to the same treatment, but transition to a pure psychotherapy has taken place. Foremost of those to herald its advent was Dubois of Berne. This physician has gradually done away with hypnotism, electricity, hydrotherapy, and other physical methods, as well as medicines in the treatment of the psychoneuroses, and relies on suggestion alone, reserving only for special cases subsidiary isolation, overfeeding, and massage. To quote from him, "I have daily to prove the inefficacy of physical methods and the dangers to which they subject the patient." His method is to appeal directly to the reason, and by logical means to suggest how an amelioration or cure of the symptoms may be obtained. The patient is very frankly taken into the confidential relation and the psychic nature of the trouble revealed, and from rational autosuggestions, based on a philosophical view of life, a cure results which is often startling in its rapidity. The patient is often cured from the moment he believes he will be cured.

Unfortunately a cure does not always result. Among the psychoneurotics cases are found which are intractable to persuasion. These are often cases in which the disease has long existed and the resultant psychic trauma is beyond eradication. Nor do all the cases cured remain well; relapses are of common occurrence. Psychotherapy is not a specific, but in the psychoneuroses it affords the best and quickest aid we have in our armamentarium of to-day. It would be an inestimable boon to mankind if all mental diseases could be cured by mental methods. In the face of organic disease of the brain, such as paresis and arteriosclerosis, and in dementia præcox and manic-depressive insanity, psychotherapy is powerless to alter the pathological process, yet

even in these severe conditions a judicious use of suggestion may prove ameliorating. The fundamental causes of these diseases lie in an undiscovered country across an abyss which the sum of our scientific knowledge cannot in the least span. We are not much better off in the psychoneuroses. Of course here there is also some underlying organic change. We are certain however of some of the ground. We well know how changes in bodily states can produce corresponding changed mental states, how fatigue, poisons, and intoxications may modify psychic function, and how ether and chloroform may blot it out altogether. Just which mental diseases are due to changed bodily states, and which ones are due to intrinsic alteration of the brain itself remains for the future to divulge. Conversely we know how psychic states influence bodily function with a force even as great. It is upon this fact that rational psychotherapy is based. From exaggerated and erroneous interpretations of this same fact numerous systems have been developed which hold that mental treatment is the sole necessity in the cure of all ills, whether bodily or mental. Among such systems are mind cure, metaphysical healing, and Christian science. Since these teach the unreality of disease, the neglect of bodily symptoms, the divine origin of health, etc., and ignore the tenets of physiology and psychology they are not only essentially unscientific, but dangerous as well, as the practices which arise from them often lead to irreparable injury or fatal delay. With such cults psychotherapy has nothing to do.

Psychotherapy is of great value to the general practitioner. In this division of our profession we often find an ignorance of the whole matter, or, and very frequently too, a prejudice against the use of suggestion and perhaps not without some justification considering its not remote association with hypnotism and charlatanism. It is impossible, however, to write the history of therapeutics without considering the working of suggestion. All treatment exercises a suggestive influence. It would be a valuable undertaking to determine the actual benefits derived from medicines and other physical methods past and present in contrast to those arising from suggestion plus the repairing tendency of nature. I feel quite convinced that the latter two have played the greater rôle. I do not wish to underestimate the aims and results of experimental and physiological therapeutics based on exact scientific investigation, nor the few instances where we are already so fortunate as to possess a specific, nor to symptomatic alleviation, but I especially refer to diseases of unknown nature where empiricism rules. We often hear physicians admit the therapeutic worth of drugs in such cases when they say "we never take medicine ourselves, we sometimes give it to our friends, and always to our patients," or "medicine sometimes cures, it often relieves, it always consoles." Consciously or unconsciously we all make use of suggestion. No one will contest the importance of the personal equation of the psysician in relation to the patient. We appreciate the beneficent effect of a pleasing personality, and when this is combined with sympathy and a favorable assurance we often behold startling results. Many a patient is better as soon as he hears the approach of the doctor's steps. The addition of a well directed psychotherapy to these unconscious factors forms a most desirable combination, and would prove of use to the surgeon, gynecologist, and other specialists as well. In addition to a thorough understanding of the working of suggestion the general practitioner should be able to recognize the psychoneurosis early in its course. This would obviate many reverse or harmful suggestions, often transmitted unconsciously to the patient. Complaints of dyspepsia, heart trouble, headache, insomnia, etc., of psychogenous origin, are often mistaken for local organic disturbances and treated as such, with the result that the patient only grows worse and is plunged into a state of chronicity, when an early application of suggestion-persuasion methods would have cured him. Of course it is implied that a thorough physical examination has preceded the application of psychotherapy and the possibility of organic disturbance excluded. Suggestion is not a panacea, but there is no form of treatment in which it may not be an adjunct. Our individual peculiarities render it impossible that every one who so desires can practise a pure psychotherapy, but do not exclude every one from achieving as good results by methods more indirect, and from reaping the harvest which has often been left to the quack and charlatan.

Those who are out of sympathy with or ignorant of the principles of psychotherapy often show an attitude toward those unfortunates who suffer with hysteria or neurasthenia or allied conditions, which is hard to define but which frequently appears uncharitable, based perhaps on the assumption that the diseased condition is feigned, and hence should be treated lightly or jocosely. This attitude, often shared alike by doctors and nurses, and seen in our largest hospitals, is shown not only toward frank cases of the psychoneuroses but toward other patients who exhibit only isolated neurasthenic or hysterical symptoms. This has developed until the term "neurasthenic" is often applied as a reproach and unfortunately not always behind the individual's back. Such an attitude can result in no good to the patient. A thorough knowledge of the nature of the psychoneuroses supplemented by a like knowledge of the value and uses of a rational psychotherapy would obviate all this medical narrowness and uncharity.

The ability to minister to the mind as well as the body combines the highest qualities a physician can possess. Such men are undoubtedly too few in the great cities, where competition and its resulting mercantilism or the hurry and haste which are unavoidable in the carrying on of a large practice often cause a physician to forget his humanitarian calling.

However, we are making headway. There is light in the east. Psychotherapy is rapidly gaining ground and taking its proper place. Medical students and recent graduates as a rule know little or nothing of the psychoses, and the whole field of mental medicine is to them a *terra incognita*. Nor have they had in most instances previous to their medical work any training in psychology, and they are not to be blamed; for when we search the average medical school curriculum we find a startling paucity of instruction in all these branches. They must learn, if they learn at all, in the school of experience. Time should be saved for them in this department as in others, they should be taught. Psychology and psychiatry should receive their proper attention, and then in due order would follow instruction in therapeutic psychology.

GASTROPTOSIS IN RELATION TO HYPERCHLORHYDRIA.

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Relaxation of the abdominal muscles is the essential feature in gastroptosis or abdominal atony or enteroptosis or splanchnoptosis—all of these terms mean one and the same thing. The abdominal muscles have the function to keep the abdominal viscera in their physiological position; as soon as they become relaxed these viscera will sink down and there will be general ptosis of the abdominal organs, the stomach, the kidneys, the intestines, and sometimes the liver, the spleen, and even the uterus. It depends on the degree of the relaxation of the abdominal muscles with their fascia and tendons, or, let us say the abdominal walls, whether all the organs are concerned, and how much the one or the other is displaced. Another function of the abdominal muscles is to control the distribution of fluids in the abdomen, to regulate circulation and secretion. All forms of anomalous gastric secretion may be due to gastric atony; hyperchlorhydria, hypochlorhydria, and achylia. From observation made since the relations of gastroptosis to secretion have been studied by Rose, it appears that hyperchlorhydria is among the manifestations of the relaxation of the abdominal walls—at least in some cases. Of these relations one to the other, that is, of this relaxation to hyperchlorhydria, I could convince myself while assisting Dr. Rose in his clinic in the New York Post-Graduate

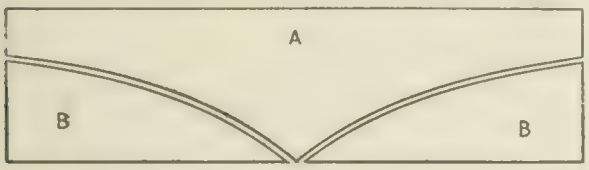

Fig. 1.—Method of cutting plaster.

Medical School. I do not know if gastroptosis, or if a splashing sound is present in all cases of hyperchlorhydria, no attention having been paid to this matter so far; but I found the coincidence in all cases which came under my observation. The symptoms of hyperchlorhydria are varied, both in character and in intensity. None of them is pathognomonic, but they are sufficiently characteristic, and, in conjunction with the results of the examination of the gastric contents, enable us to arrive at a correct diagnosis. The general appearance of the patients is commonly good. The appetite is, as a rule, good, even very good. They eat well and often, because they find relief from pain by doing so. It is only in cases in which a wrong diet, especially abstinence in eating, has been observed, that the desire for food becomes wanting. Vomiting is of rare occurrence, but when it happens the vomited matter is acrid, causing a sensation of burning or scalding in the esophagus. One symptom which is never missing is paroxysmal pain, generally two or more hours after meals; this is the time when the digestive act has been nearly completed and much of the chyme has passed out, when free hydrochloric acid is present in excess and undiluted, irritating the gastric mucous membrane through the terminals of the sensory nerve filaments.

In many cases there is burning in the stomach; this may happen a little earlier than the real pain. Some patients complain of sour stomach; they feel the acidity of the stomach in the mouth.

Eructation is a frequent symptom; constipation is the rule, but there are exceptional cases in this regard. The all-important part of the treatment is the diet. In Rose's clinic we ordered invariably the regimen laid down by Illoway in his classical treatise on Hyperacidity in the *New York Medical Journal*, 1901:

Breakfast: Milk, two hard-boiled eggs, bread and butter. Two hours later a vichy tablet in half a glass of water.

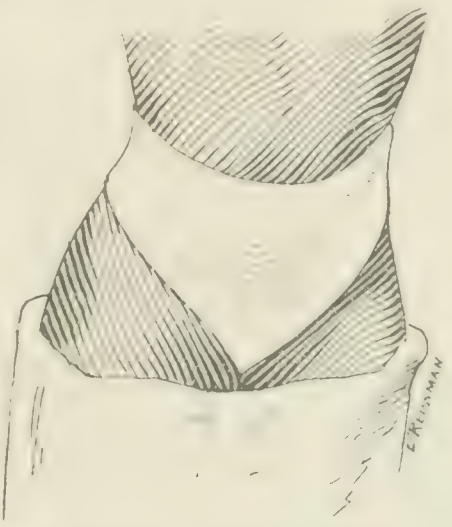

Fig. 2.—Showing mode of application of strip A.

Lunch: Chops or steak, roast beef or roast mutton, bread and water; if desired, a little potato or rice. Two hours later a vichy tablet in half a glass of water.

Dinner: A little soup, broiled fish, roast beef, roast mutton or roast chicken (only occasionally), a little potato, a small dish of some vegetable.

At Bedtime: A glass of vichy or milk, or a sandwich of cold beef or cold mutton, or cold chicken.

Forbidden: Anything ice cold or very hot, stimulants of any description, spices, tea, coffee, cocoa, all sweet things, fruit, and tobacco.

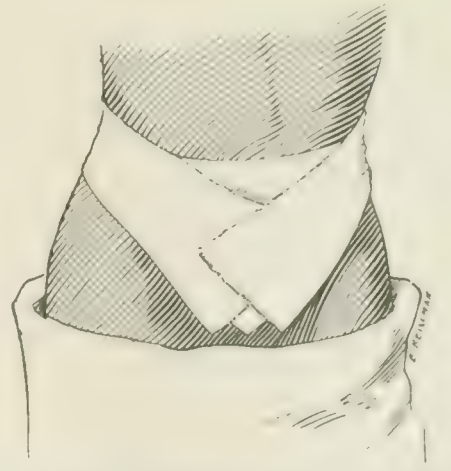

Fig. 3.—Showing mode of application of strips B, B, completing the bandage.

Against constipation a teaspoonful of Carlsbad salts in a glass of warm water before breakfast. As regards other medication, besides vichy and Carlsbad salts, we found that atropine pills of 1-240 grain, three times a day, did excellent service to relieve the pain. As a rule, they were required only during the first week, because after that time the diet alone would prevent occurrence of pain. Atropine, as is well known, has a tendency to reduce gastric secre-

tion. Strictly interdicted is vichy in syphons, because the carbonic acid gas, with which it is charged, seems to produce quite severe pains in these cases.

In order to distinguish the effects of the diet and medication alone, we desisted in some cases from relieving at once the apparent cause of hyperchlorhydria, and we found that the diet alone did not relieve the symptoms as promptly as when abdominal strapping was added to the therapeutic measures.

In every case of illness which we have under treatment our first aim must be to remove the cause if we can do so. The cause of hyperchlorhydria, according to our experience, is, at least in many instances, abdominal relaxation. This fact will be appreciated when attention is paid to the relation of abdominal relaxation to disorders of gastric secretion. It is claimed that hyperchlorhydria is a neurotic affection, but very few have yet appreciated, I believe, that gastroptosis is often the cause of nervous disturbances. The relaxation of the abdominal wall brings about morbid changes of circulation, of the distribution of fluids in the vessels, of the movements of the water in the tissues and in the cells, and, above all, in the secretory functions of the abdominal organs. We have found that all forms of secretory disorders in the stomach may be connected with gastroptosis. In all these cases of functional disorders in which we find gastroptosis, in which we can produce the splashing sound, we should first of all relieve the abdominal relaxation. No other method to accomplish this is more rational, more directly to the point, than plaster strapping; it has decided advantages over all others, and it is the only one which acts on the crosswise fibrous arrangement of the abdominal muscles. The time will come when this method will be generally adopted. The plaster used for this strapping is Z. O. adhesive plaster on moleskin seven inches wide and as long as the circumference of the waist measure of the patient. This plaster is cut into three pieces shaped as figure 1. The abdomen is shaved down to and including the symphysis and is washed with ether. The large piece is first applied, the point being placed over the symphysis and the ends meeting and overlapping in the back. (See figure 2.) The plaster should run above the crest of the ilium. The smaller pieces are then applied as shown in figure 3, and they serve as an additional support of the abdominal walls. Considerable force may be used in applying the side pieces which run from the hypogastrium over the iliac and inguinal regions and meet at the spine.

In order to guard against loosening of the plaster, care should be taken that the edges are perfectly adherent. The plaster is worn for five weeks, usually without discomfort to the patient, who, on the contrary, feels a sense of relief by the support. The composition of the plaster prevents, as a rule, any dermatitis, unless the plaster becomes loose and air penetrates.

1007 Broad Street.

Observations of Epidemic Cerebrospinal Meningitis.—G. Daddi gives us the results of his observation of cases of epidemic cerebrospinal meningitis in Florence. In the epidemic observed the disease was not of a very malignant form, as about one-half the cases recovered. The cases were limited to one single locality and to three dirty houses, although these were surrounded by other houses. In one case, accompanied by marked hydrocephalus, the bacteriological examination showed the disease to be due to the Fraenkel diplococcus of pneumonia. Of six cases treated in the hospital, five showed cocci of a globose shape, with a tendency to join into chains of two or three, staining well with aniline, and corresponding to the *Bacillus intracellularis meningitidis*. One case showed Fraenkel's pneumococcus. The bacilli were of slight vitality, dying after two or three days at most. Moisture helped to keep them alive longer. They developed at a temperature of 28° to 30° C. sparingly, best from 36° to 37° C. Hence the germs may be said to be killed by drying and by keeping them at an ordinary temperature. They show slight virulence toward the common animals used in experiments. There were no germs found in the nasal mucous membrane of five of the patients in whom it was examined. Agglutination takes place with the serum of other cases of meningitis due to this bacillus, but not with other germs. This agglutination seems to be specific, but is not found in very dilute solutions.—*Rivista Critica di Clinica Medica.*

Renal Decapsulation in Nephritis, with Report of a Case.—Henry Harris gives the history of a patient with grave chronic parenchymatous nephritis, who after being treated energetically by medical measures in the hospital for two and one-half months, was discharged much improved. This improvement was of short duration only. One and one-half months after being discharged, the patient's condition was again serious and it was necessary to readmit him to the medical ward. His second stay lasted only two weeks; at the end of that time his condition was very slightly improved. One month after this he entered the hospital for the third time in a serious condition. At the end of a month he had not improved. Bilateral renal decapsulation was then performed. Improvement was noted about three weeks after the operation. In contrast to that of previous admissions, the improvement following operation has been permanent, now lasting sixteen and one-half months and has been very positive. This improvement is seen both in the patient himself and in his urine. The daily output of urine has increased, and the urea has increased. Albumin is present only in traces, and casts are only exceptionally found. Renal decapsulation has been of value in the treatment of this case. Since these notes were written it has been learned that the patient has sailed for Canton, China, in order to take the governmental examinations for a scholarship in this country.—*Bulletin of The Johns Hopkins Hospital.*

Surgery of the Large Venous Trunks.—Doyen has made a study of lateral and circular ligatures in the surgical treatment of the large venous trunks. The lateral ligature gives excellent results in cases of slight injury of the internal jugular or axillary as in cases of rupture or of section of a branch at the point of connection with its principal trunk. The most interesting chapter from the point of view of surgical technique has to do with suture of the veins. Twice circular suture has been performed on the axillary vein when it has been almost completely cut across. Primary union was obtained, and the operation was not followed by any circulatory disturbance. Most of the favorable interventions were in cases of septic thrombophlebitis of the lateral sinus which had become infected by spread of the infection from a mastoid suppuration.—*Le Bulletin Médical*

Syphilitic Arthropathies.—Leonardo Dominici describes two cases of arthritis of long duration, localized symmetrically on both sides, with swelling, fluctuation, and spontaneous pain at night. The articular fluid was sterile and tuberculin gave no reaction. Mercurial teratment benefited them. Syphilitic joint troubles occur in both the secondary and tertiary periods. They are more frequent in the tertiary period and may occur as late as twenty years after infection. They are primarily articular, or result from gummatous formations on the articular surfaces. These arthropathies present no characteristic specific symptoms and can only be diagnosed by exclusion and by the results of treatment.—*Il Policlinico.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE EFFECT OF SALICYLIC ACID PRESERVATIVES ON HEALTH.

ONE of the most noteworthy tendencies manifested in recent remedial legislation has been the desire to obtain a food supply free from adulteration and chemical preservatives. The agitation all over the country has assumed such proportions that a national law has been enacted to supplement the statutes in the various State codes. Among the investigations which have had a very practical bearing in prohibiting the use of chemical preservatives are those conducted at the United States Department of Agriculture on the now famous "poison squad." The effects of boric acid and borax in the food were first studied and the publication of the results of these experiments called forth numerous protests not only from interested manufacturers but also from scientific authorities in high standing. Thus Prof. Liebreich of Berlin, the well-known pharmacologist, as we have previously noted, contended that the results could not be considered as conclusive on account of the manner in which the tests were conducted, and that no danger attaches to the use of the small quantities of the chemicals ordinarily employed as preservatives. This argument has been urged with great vigor and ingenuity, but it is not conclusive, for although minute quantities would not be dangerous so far as a fatal effect is concerned, the continued use of such materials seems likely in the end to produce an injury of greater or less extent.

Salicylic acid and the salicylates have also been subjected to a series of tests similar to those conducted by the Department of Agriculture with boric acid preservatives, and the results of the experiments have been published by Dr. Wiley in a recent circular (No. 31) of the Bureau of Chemistry. There is a general consensus of opinion among medical men that salicylic acid and its compounds are very harmful substances, and the prejudice against this particular form of preservative is perhaps greater than against any other. Dr. Wiley believes, however, that there is no reason why salicylic acid should be singled out for especial condemnation, and from his experiments it appears that, although it is a harmful substance, it may be less serious in its effects than has been generally supposed. But this is no argument for the use of the drug as a food preservative. The indications for the administration of the salicylates as medicines are well established, but, as Wiley states, such administration should be controlled entirely by the medical profession; and simply because salicylic acid is well established in the Pharmacopœia and universally recognized as a remedy for rheumatism and gout, this fact should not serve as a warrant for its promiscuous use in foods, even if it were harmless. The experimental data show very clearly that this drug and its compounds exert an exciting influence upon the activities which take place in the alimentary canal, and that this stimulation leads at first to increased digestion and absorption. But the data also show that the general effect upon the system is depressing, causing the tissues to be broken down more rapidly than they are built up, and that thus the normal metabolic processes are interfered with in a harmful way. In fact, a gradual decrease in the weight of the subjects was noted, although the quantity of food was increased sufficiently to have produced an opposite effect.

The only practical conclusion which can attend these observations is that, although salicylic acid compounds given in minute doses cannot be dignified by the term poison, they are yet sufficiently injurious if taken continuously to exert a depressing and harmful influence upon digestion and the general metabolic activities of the body. As food can be preserved in an unobjectionable manner without its aid there seems to be no valid reason why it should be retained for this purpose. Its use, as well as that of other chemical antiseptics, leads to carelessness and indifference on the part of the manufacturer, for many of the processes necessary to the proper selection, cleansing, and preservation of food stuffs are thus neglected. When the harmful character of any substance which it is desired to add to food is thus established and no reason for its employment can be given except convenience or indifference, then the exclusion of such material from food products follows as a logical sequence and a hygienic necessity.

THE PATHOLOGY OF CHOREA.

CHOREA is a self-limited disease, especially of early life, occurring most commonly in the spring of the year, coincidently with, as a sequel to, or as a precursor of rheumatism. It has, by competent authority, even been designated cerebral rheumatism. The etiology of both chorea and rheumatism has not yet been definitely established, but there is sound reason for believing that both are infectious diseases having a common cause. The evidence thus far brought forward on this point, though not entirely conclusive, certainly is strongly suggestive, and it only needs substantiation before its final acceptance. Much work of a highly trustworthy character has been done in this connection by Poynton and Paine, and the former of these observers is now, in conjunction with Dr. Gordon M. Holmes (*Lancet*, October 13, 1906), able to present a report of three additional fatal cases of chorea, in which the diplococcus considered responsible for rheumatism was found in the brain and meninges, as well as in the other lesions present. With cultures of this microorganism it was possible to produce multiple arthritis and pericarditis in lower animals. Histological study of the brain and meninges revealed hyperemia, small hemorrhages, multiple thrombosis, serous exudation,

round-cell infiltration, softening, swelling, and distention of the cortical cells, with partial loss of tigroid and varying degree of chromatolysis of Betz cells, beginning chromatolysis of the cells of the basal ganglia, with slight nuclear swelling.

In one case post-mortem examination disclosed the presence of general and recent pericarditis, bilateral pleurisy, mitral endocarditis, and myocarditis. In a second case there was recent pericarditis over the posterior surface of the heart, with pericardial adhesions over the anterior surface, recent endocarditis of the mitral and tricuspid valves, and acute edema of the lungs. The third case occurred in a primipara, and it became necessary to evacuate the uterus on account of the violence of the movements. On post-mortem examination recent vegetations were found along the margins of the mitral valve.

From the evidence presented it may be concluded that the symptoms and lesions of chorea are due to the microorganisms found associated with the disorder, together with the toxins they produce, and in view of the common association of chorea and rheumatism and the identity of the microorganisms underlying the phenomena of each, it must be concluded further that chorea is in reality merely a cerebral manifestation of rheumatism.

THE DIETETIC TREATMENT OF ULCER OF THE STOMACH.

At present three principal plans of treatment of gastric ulcer are in use in Germany. The first and perhaps the most widely employed is that advocated by Leube; this is essentially a rest cure both for the body as a whole and for the stomach. The patient is kept in bed and hot fomentations, or in cases of hemorrhage an ice bag, are applied over the stomach more or less continuously, while the diet is an extremely restricted one. During the first ten days it consists of boiled milk, bouillon, and zwieback, during the following week of purees, rice and sago boiled in milk, raw and soft boiled eggs, and calf's brain or sweetbread. During the next five days scraped raw ham, scraped beef, boiled calf's foot, mashed potato, and a little coffee and tea are allowed, and during a further period of seven days, rare roast beef, broiled chicken or pigeon, macaroni and little bread are given. After this the return to normal diet is gradually managed.

The diet of Lenhartz represents a protest against this plan of under nourishment and is founded on the view that anemia and hyperacidity are not only predisposing causes of gastric ulcer but frequently retard the patient's recovery and must be combated from the first. Lenhartz therefore from the very first, even immediately after a hemorrhage, gives a concentrated albuminous diet of milk and raw eggs with sugar so that at the end of two weeks a daily allowance of 3,000 calories is reached. On the sixth day chopped meat, on the seventh day rice, and three days later scraped raw ham and butter are added to the dietary. Lenhartz and his followers claim that in this way the excess of free acid is bound and that through the more rapid gain in strength recovery is more prompt than is the case in the under-nourishment plan of Leube.

Senator attempts to combine the advantages of both régimes by supplying a dietary which is sufficiently nourishing without tending to overload the stomach. He recommends the use of a combination of gelatin, cream, frozen butterballs, and sugar. While all three of these plans have yielded excellent results there is still considerable difference of opinion in regard to their respective advantages.

Schmidt, in an article appearing in the *Deutsche medizinische Wochenschrift* for November 22, 1906, expresses the opinion that the principle of adequate feeding embodied in the Lenhartz treatment is a good one, but says that he is not ready to increase the dietary as rapidly as does this clinician. He believes that it is necessary to give the stomach rest as Leube has pointed out, but that the dietary should be increased sooner than Leube recommends by the addition of eggs, gelatin, butter, cream, sugar, and rice, but chopped meat and scraped ham should be given only with caution.

A New Method of Amputation of the Upper Extremities.

A new method of amputation of the upper extremities is described in a most interesting article by Antonio Ceci in *La Presse Médicale* of November 17, 1906. The originator of this method is Giuliano Vanghetti. Ten years ago Vanghetti conceived and put into execution this method, making experiments on chickens. He proposed to utilize muscles and tendons which remained uninvolved in the amputation of any limb, or such as were preserved in an amputation stump. He aimed to form a ring or club-shaped mass of these living tissues, which would permit the stump to communicate motion to an artificial hand more or less complicated. Ceci has recently had the opportunity of practising this method in three cases. This method, says Ceci, might well be called "amputation cinéplastique." Although Vanghetti has treated the subject in a very theoretical fashion, several of his propositions not being practical, nevertheless the fundamental idea is original and valuable, and deserves a place in the technique of contemporaneous surgery. Ceci gives a graphic account of the three cases in which he has applied the method. The first patient, a man thirty-three years old, presented himself with a recurrent myxosarcoma of the forearm with metastases to the axilla. Amputation according to this method was performed. A musculotendinous ring entirely covered with skin and subcutaneous tissues was formed. The extremity of the amputation stump was thus supplied with a traction ring to which could be applied the cord of an orthopedic apparatus. These tissues are gradually educated to perform their work. As soon as the cicatrix becomes solid, exercises of traction on the ring are practised so that little by little the patient is able to raise an increasing weight by muscular contraction of these parts of the stump. The writer illustrates his article with cuts which represent the patient as holding a lamp in his artificial hand while the arm is extended. In another cut he is represented as holding a hatchet in the same manner. Another patient is shown holding weights by means of the action of the two parts of the stump forming two traction rings which face each other. The method of amputation here described is highly original and

differs essentially in its technique from any other operative procedure.

The Opsonic Index in Pulmonary Tuberculosis.

The opsonic question is confessedly one of great intricacy, and yet indications are not wanting that it is gradually being introduced into practical medicine. Long observation, however, will be required before its limitations can be definitely determined. Some interesting statements were recently made by Crace-Calvert at a meeting of the Manchester Medical Society (*Lancet*, November 24) on the relations of the opsonic theory to tuberculous patients in sanatoria. He noted that in acute general infections the disease lasted only a short time as a rule, and there was a large absorption of toxins which caused a production of antitoxins, and hence recovery resulted. In the chronic or local infections there was a poor development of toxins with a corresponding poor production of antitoxins, and to obtain recovery it was necessary to produce more antitoxins. The readiest way of doing this was by the inoculation of toxins or of sterilized microorganisms of the disease. In order to do this with safety it was necessary to estimate a patient's resistance to the disease, and this could now be done by Wright's method of estimating the opsonic index. Crace-Calvert showed that in normal healthy persons the index was between 0.8 and 1.2, though in a series examined by him one healthy man had an index of 1.3. The index in persons predisposed to tuberculosis was probably low (though no estimations were known), and hence they sooner or later fell victims. In ten early cases examined on arrival at the sanatorium the index was always between the normal limits, and the estimations did not, therefore, help much in diagnosis. In ordinary subacute cases the index was usually about normal, probably from an absence of autoinoculation. After showing that a high opsonic index was of value, he said that it could be obtained and generally maintained by appropriate doses of a suitable "vaccine" repeated at the proper intervals. In early cases there was probably no need to inoculate, as all these patients did well with ordinary sanatorium treatment. In acute cases it was not safe to inoculate, except, perhaps, with extremely small doses, such as 1-4000th or 1-6000th of a milligram of tuberculin. When the symptoms had quieted down with ordinary sanatorium methods inoculation might help toward recovery. The further statement was made that at present the author inoculated only patients not doing well with ordinary sanatorium methods; he always estimated the index several times before beginning inoculations, and he always allowed the patients to rest one day before and three days after inoculating, so as to avoid autoinoculation.

The Causes of Postoperative Pneumonia.

At the German Surgical Congress held about a year ago the question of the etiology of the pneumonias following operations, particularly laparotomies, was made the subject of an exhaustive discussion. While, in spite of the interest the question aroused, no very definite conclusions were arrived at, in a general way the consensus of opinion seemed to be that the anesthesia did not deserve so prominent a position as a causative factor as had usually been ascribed to it. Infection by way of the lymphatic channels and the blood stream, and hypostasis were brought forward as important possibilities, though it was admitted that it was difficult to recognize pneumonia due to the two former means of origin, and the greater significance was accorded to vascular stasis. Lichtenberg, writing in the *Münchener medizinische Wochenschrift* for November 20, 1906, takes up the question from the experimental rather than the statistical standpoint, and states that even though the operators of the Breslau clinic have found that the mortality from postoperative pneumonia has been greater in cases in which local anesthesia was used than when a general anesthetic was employed, this means but little, since the patients operated on under the former conditions are usually those whose situation is already desperate, and who are therefore especially predisposed to complications. He administered chloroform, with and without the admixture of oxygen, for long periods of time—several hours—to rabbits by means of a specially devised apparatus. Some of the animals were killed immediately after the termination of the anesthesia, others after varying intervals of time. It was found that in all instances, and increasing in gravity in proportion to the length of the anesthesia, changes were produced in the lungs, in some cases resulting in typical lobular pneumonia in the course of about forty-eight hours. These changes consisted in swelling and desquamation of the respiratory epithelium and hemorrhages into the alveoli, leading to plugging of the smaller bronchi and the formation of numerous areas of atelectasis. Similar areas are also produced as the result of aspiration and of increased secretory activity. Those due to aspiration may be regarded as being already infected, the others are certainly areas of lessened resistance. While the author's experiments were protracted over periods of time that rarely come into question in administering anesthetics to human beings, and while it is not possible to transfer directly to man results obtained from a study of rabbits, the use of chloroform is undoubtedly attended to some extent by dangers of this sort, particularly since the opportunities for infection are so great in man. Whether or not it is wise to use this fact as an argument in favor of spinal anesthesia as Lichtenberg seems inclined to do is, however, an open question.

A Foreign Body in the Digestive Tract.

Although in many cases the ingestion of foreign bodies is not followed by serious results, the possibilities of an unhappy termination are sufficiently recognized to give interest to any successful method of treatment. As a rule in children the expulsion of foreign bodies is spontaneous. Montéli recently communicated to the Société d'Anatomie et de Physiologie (*Journal de Médecine de Bordeaux*, November 18, 1906) a case which came under his observation. The patient, a girl sixteen years old, had swallowed a pin. Although Montéli appreciated the fact of the ordinary innocuousness of such foreign bodies in the digestive tract, nevertheless he thought it wise to attempt to expel the pin on account of its size, three and a half centimeters, and on account of the very sharp point of the steel shank. At first he ordered the patient to eat a potato salad dressed with oil. This did not dislodge the pin. Radioscopy failed to reveal the position of the pin. The writer, upon the suggestion of Bergonié, then decided to use absorbent cotton. Bergonié had already employed this method in a similar case with excellent results. A small piece of

absorbent cotton, the size of a nut, soaked with butter, was given to the patient. It sometimes happens that a pin which has been swallowed is enveloped by the cotton and is expelled with it. In this case, however, the result was not so perfect. The patient, who swallowed the pin on Thursday, took the cotton on Friday. The stool on Saturday did not contain anything foreign, but on Sunday the stool was followed by the expulsion of the cotton. The third stool which was passed after the pin had been swallowed contained this object. This occurred on Monday morning. The pin was not enveloped by the feces and was but slightly attached to them. Bergonié suggested that perhaps the foreign body had been brought by the cotton to the neighborhood of the anus, where it was accidentally dropped. The history of this case appears to justify the reputation for good results that this method of treatment has acquired. Rabère has observed that foreign bodies, when they are expelled, are nearly always enveloped by the feces. Courtin calls attention to the merit of this method on account of its safety.

Silence as an Adjuvant in the Treatment of Laryngeal Tuberculosis.

Sir Felix Semon, in an address delivered before the Berlin Laryngological Society on the occasion of the meeting held November 16, in commemoration of the seventieth birthday anniversary of its president, Professor Bernhard Fraenkel (*Berliner klinische Wochenschrift,* November 19, 1906), took as his theme the value of complete rest of the larynx as an accessory measure in treating tuberculosis of this organ. He said that while in former years he had frequently attempted to employ the plan of insisting on absolute silence in the case of private patients, he had found it so difficult to enforce obedience to this direction that he had been obliged to abandon the effort and to restrict himself to the recommendation to refrain from speech as much as possible. Of late, however, the universal resort of tuberculous patients to sanatoria had made it possible to have recourse to this very valuable principle. Patients nowadays were apt to have a better understanding of the gravity of their condition and the necessity for giving themselves up entirely to the business of getting well, and under these conditions it was usually not difficult to induce sanatorium inmates to adhere to the rule of absolute silence. The value of the measure he considered was unquestionable, and the benefits derived fully compensated for the self-denial involved. In very advanced cases, of course, nothing could be expected; but in the earlier stages, especially when attended by inflammatory irritation, in cases of localized ulceration of the vocal cords and in the interarytenoid space, and in general infiltrations of the cricoarytenoid articulation, the plan was especially to be recommended. While the lessened activity of the parts affected no doubt would be of great advantage in all cases, a certain amount of discrimination would be desirable in carrying Sir Felix Semon's recommendation into effect. The progress made by the tuberculous patient is so largely modified by the mental attitude that it would certainly be undesirable to insist on this somewhat rigorous measure in dealing with persons already manifesting any tendency to despondency or undue introspection. The success of the sanatorium patient in refraining from all conversation would also depend largely on the attitude of his companions, and if their cooperation could be secured the deprivation would be shorn of some of its hardships. Fortunately, tuberculous patients are usually sanguine in temperament, and for such the suggestion made by Sir Felix Semon would be well worth a trial.

Prostatectomy in Two Stages.

In a recent issue we referred to an article in the *Annals of Surgery,* in which it was shown that prostatectomy might profitably be performed in two stages, the first operation consisting of simple incision and drainage, the actual removal of the gland being deferred to a later period, when the congestion had been in large measure reduced, the parts being therefore in a more normal condition. The advantages of this procedure are manifest and the method will probably become one of choice, not only in prostatectomy, but also, as Dr. Wyeth pointed out in the Medical Record of December 8, in other operations where haste is not an essential element. Such being the case, the question of priority is one of some importance, and Dr. Lilienthal, in the letter which was published last week, brings forward strong evidence in support of the claim that he is fairly entitled to the credit of having first suggested and performed the operation in question.

News of the Week.

A Society for the Suppression of City Noises.—Mrs. Isaac L. Rice, after having been successful in her efforts to restrict river noises, has undertaken the organization of a "Society for the Suppression of Unnecessary Noise." This is intended especially to protect the inmates of hospitals from the needless street noises around such institutions, though the attempt will be made to suppress in the city as a whole some of the sounds that contribute so largely to make town life the nerve-racking existence it is. An advisory board and a board of directors, each consisting of twenty-five members, are being formed from among well-known men. It is proposed to have a practically unlimited membership, the members to pay nominal annual dues to cover the cost of printing the literature which it will be necessary to scatter broadcast in the interests of the movement. Needless to say, the movement is meeting with the cordial support of the hospital superintendents and the health department, as well as of others who resent the disturbance of rest caused by the flat wheels and gongs of the trolleys, the bells of junkmen, the cries of newsboys and of street vendors, and the thousand and one unnecessary noises of our city streets.

The Walter Reed Memorial.—President Roosevelt has sent to Congress the memorial of the Walter A. Reed Memorial Association, asking for an appropriation for a monument to Dr. Reed and his associates, in recognition of their services in demonstrating the mosquito theory in yellow fever. "Major Reed's part in the experiments, which resulted in teaching us how to cope with yellow fever," says the President, "was such as to render mankind his debtor, and this nation should in some proper fashion bear witness to this fact." The plan for the monument includes not only a memorial to Dr. Reed and Dr. Lazear, but is also to contain a tablet with the names of the soldiers and enlisted men of the Hospital Corps who voluntarily submitted to inocculation, some of whom died.

Yale Medical School Requirements.—The requirements for admission to the Medical Depart-

ment of Yale University now comprise as a minimum qualification two years' work of college grade, including the subjects of inorganic chemistry, physics, and general biology. A student in Yale College may by a proper choice of subjects secure both the B.A. and M.D. in six years.

To Restrict the Sale of Narcotics to Savage Races.—Negotiations are under way to secure the cooperation of the United States and Great Britain in submitting to the Powers a treaty prohibiting the sale of intoxicants and opium among all uncivilized races. Those advocating the measure are hopeful of success in view of the anti-opium movement which has resulted in the release of China from the obligation to buy British opium and in the pronounced reform sentiment in England. The Senate has already three times passed a resolution favoring such a treaty.

Smallpox in Brooklyn.—Twelve cases of smallpox were recently discovered by the Board of Health officials in one day in negro tenements in the neighborhood of Cleveland place, Brooklyn. The entire block in question has been quarantined.

Gift to Philadelphia College of Physicians.—It was announced at a recent meeting of the Philadelphia County Medical Society that Andrew Carnegie has promised to give the College of Physicians of Philadelphia the sum of $50,000 contingent on the college raising $100,000. The money is intended for the erection of a new building for the society.

Plague Rats in Manila.—It is reported from Manila that during the past few months considerable numbers of rats infected with bubonic plague have been found in two districts of Manila, and that active operations to exterminate the rodents and disinfect the contaminated quarters have been put into execution.

Colloidal Metals in Pneumonia.—Dr. Robin of Paris is continuing his experiments on the value of the subcutaneous injection of metals in the colloidal state, and has recently reported a series of fifty-one cases of pneumonia, twenty-six of which were serious, with six deaths.

Yellow Fever in Cuba.—According to recent accounts, there are only three cases of yellow fever in Havana, and three others in the interior of the island.

Professor Eli Metchnikoff on November 30 received The Royal Society's Copley medal in recognition of the importance of his work in zöology and pathology. On the same date the Darwin medal was awarded to Professor Hugo de Vries on the ground of the significance and extent of his experimental investigations in heredity and variation.

A Portrait of Dr. H. M. Hurd, Superintendent of Johns Hopkins Hospital, was presented to the hospital by the medical staff at a dinner recently given in honor of Dr. Hurd.

Dr. A. E. Halstead of Chicago has been elected Professor of Surgery in the Northwestern University Medical School.

National Red Cross Officers.—At the annual meeting of the American National Red Cross, held in Washington on December 4, the following officers were elected for one year: *President,* William H. Taft, Secretary of War; *Treasurer,* Charles H. Keep, Assistant Secretary of the Treasury; *Counsellor,* James B. Reynolds, Assistant Secretary of the Interior; *Secretary,* Charles L. Magee; *Board of Consultation,* Brig.-Gen. Robert M. O'Reilly, Surgeon-General, U.S.A.; Surgeon-General P. M. Rixey, U.S.N.; Surgeon-General Walter Wyman, Public Health and Marine Hospital Service.

A New Medical Society.—The physicians of the Eastern District of the Borough of Brooklyn, New York, have formed a new medical society to be known as the Williamsburgh Medical Society. The organization meeting was held on Wednesday, December 5, 1906, at 90 Manhattan avenue, and forty-eight physicians were enrolled as members. The following officers were elected for the ensuing year: *President,* Leon Louria, M.D.; *Vice-President,* Wm. Linder, M.D.; *Corresponding Secretary,* Marcus J. Levitt, M.D.; *Financial Secretary,* Ed. L. Friedman, M.D.; *Treasurer,* A. Hayman, M.D. The society will meet every second Wednesday of the month.

Hospital News.—*The Jewish Hospital of Brooklyn* was formally opened on last Sunday and addresses were made by Oscar S. Straus, Abraham Abraham, Herman S. Metz, St. Clair McKelway, and others. The hospital which is to be conducted as a nonsectarian institution is situated on Classon and St. Mark's avenues and has cost $335,000. Most of this sum was raised by subscriptions of small amount. The finances were managed by Abraham Abraham, who is president of the hospital. It has 175 beds and patients are to be treated from $1 a day upward. The first patients will be received on December 17. Dr. Jacob Fuchs is chief of medical staff.

St. Catharine's Hospital.—By the will of the late Mrs. Caroline Goldbach, filed for probate in the Surrogate's Court, Brooklyn, $3,800 is left to St. Catharine's Hospital.

Beth Israel Hospital Ball.—To raise funds to meet the expenses incurred by the erection of a new wing to its building, Beth Israel Hospital is arranging for a Purim ball to be given on March 13 at Madison Square Garden. The hospital is at Cherry and Jefferson streets, and last year treated 44,000 ward patients.

Seney Hospital. — The Halls administration building of the Methodist-Episcopal Hospital in Seventh avenue and Sixth street, Brooklyn, was dedicated last week with public exercises, at which the Rev. Dr. James M. Buckley, president of the board of managers, presided. The hospital, known as the Seney Hospital, was founded twenty-five years ago by the late George I. Seney, whose gifts to the institution amounted to over $400,000. Four years ago Mr. and Mrs. William J. Halls, Jr., offered to complete the hospital at an expense not to exceed $125,000, on condition that $500,000 be raised to pay off the floating debt and bring the endowment of the institution up to $850,000. More than $450,000 having been raised, it was decided to open the central, or administration building, which has been named after Mr. Halls. The third building will probably be completed and ready for dedication within a year.

Benefit for the Sydenham Hospital.—A testimonial benefit performance for the Sydenham Hospital, at 343 East 116th street, was held on December 9 by Mr. Leo Shubert at the Lyric Theater as a memorial to the late Samuel S. Shubert.

Proceeds for Chicago Union Hospital.—This hospital received $2,000 as proceeds from the address of Senator Tillman, recently delivered in Chicago.

Presbyterian Hospital Anniversary. — The thirty-eighth anniversary of the Presbyterian Hospital was celebrated last week with appropriate exercises in the Florence Nightingale School for

Nurses, opposite the hospital. After the exercises the guests were taken through the hospital and to the new open-air ward on the roof, which is just being finished, and the advantages of the hospital's method of open-air treatment of a great many conditions were explained. The annual report of the hospital, just issued, shows that during the year 11,849 patients were treated in the hospital proper, 3,549 ambulance calls were answered, 33,488 patients were treated in the dispensary, and 14,100 visits were paid by district nurses.

Cook County Hospital Alumni Association.—At the fortieth annual reunion of this association, recently held, Dr. Nicholas Senn was elected President, and Dr. Frederick A. Besley, Secretary. Speeches were made by Drs. Nils T. Quales, Senn, Ingals, Bacon, and others.

Gift of a Grateful Patient.—A patient injured in an automobile accident near New Brunswick, N. J., while being taken to the Wells Memorial Hospital of that place promised that if he were removed carefully he would present a new ambulance to the institution. Apparently the work of the attachés of the hospital was satisfactory, for shortly afterward a thoroughly modern ambulance was shipped to the institution.

Working Women's Protective Union.—At the annual meeting of the Working Women's Protective Union recently held, Dr. Henry Dwight Chapin was elected president. The work of the society consists in preventing and punishing frauds upon working women.

Harvey Society Lectures.—The fifth lecture in the Harvey Society Course will be given by Dr. S. J. Meltzer of New York, on Saturday evening, December 15, at 8:30 P. M., at the New York Academy of Medicine. Subject: "The Factors of Safety in Animal Structure and Animal Economy." All interested are invited to be present.

The Late Dr. Leroy M. Yale.—At a regular meeting of the Society of the Alumni of City (Charity) Hospital held on October 10, 1906, unanimous action was taken in executive session directing the Secretary to draw up a resolution embodying the deep regret of the society at the death of Leroy M. Yale, A.M., M.D., one of its oldest and most esteemed members.

Dr. Yale was distinguished by the unusually high character of his work, by his contributions to literature, and by his unselfish devotion to his duties. He had by his genial comradeship and by loyalty to his associates endeared himself to all who knew him; therefore be it

Resolved, That we extend to the bereaved family our heartfelt sympathy; and be it further

Resolved, That a copy of these resolutions be sent to the family, and also be published in the medical press. WILLIAM P. HEALY, M.D.,
Secretary City (Charity) Hospital Alumni Society.

Death of Dr. Lapponi.—Dr. Giuseppe Lapponi, personal physician to the Pope, and also to his predecessor, Leo XIII, died on December 7 of cancer of the stomach. Dr. Lapponi was graduated in medicine from the University of Bologna in 1875, and after practising in Capalone, in Tuscany, and Pallenza, near Marcerata, he was in 1888 invited to become body physician to Pope Leo XIII. At the time of the death of Pope Leo, Dr. Antonio Cardarelli impugned the correctness of the diagnosis of pleuropneumonia which was given out by the attending physicians, Drs. Lapponi and Mazzoni. These physicians later on admitted that Cardarelli's allegation that the cause of death was carcinoma was correct, but stated that they had been obliged to take the position they did through the action of the college of cardinals, and produced an affidavit to this effect that they had drawn up early in the illness in order to protect their professional reputations.

Obituary Notes.—Dr. Henry C. Jones of Mt. Vernon, said to be the oldest practising physician in Westchester County, died on December 4, at the age of seventy-three years. Dr. Jones was born in East Hartford, Conn., and received his medical education at the Worcester, Mass., Medical College and the American Institute of Homeopathy. He had practised in Mt. Vernon since 1856.

Dr. ALEXANDER E. MACDONALD of this city died of tuberculosis on December 7, at the age of sixty-one years. He was born in Toronto, Canada, and after studying medicine in the Toronto University was graduated from the New York University Medical School in 1870. He later took a course in the law school of the university and was appointed Professor of Medical Jurisprudence in the university in 1874. After occupying several positions in the hospitals on Blackwell's Island, in 1874 he was appointed resident physician of the insane asylum on Ward's Island, and a year later he was made superintendent. This position he retained until failing health compelled him to relinquish it two years ago. Dr. MacDonald was an ex-president of the American Medico-Psychological Association.

Dr. JOHN HENRY TRENT of Brooklyn died on December 4, of pneumonia, in his sixtieth year. He was born in the Isle of Wight and came to this country in 1867. He was graduated from the Long Island Hospital in 1876, and had practised in Brooklyn ever since.

Dr. P. M. LUSSON of San José, Cal., died on November 26 at the age of sixty-six years. He was a native of Cuba, and after studying medicine at the University of Bordeaux, France, took a post-graduate course at the University of Pennsylvania. He had practised in San José for the past thirty-five years, and was at one time president of the Santa Clara Medical Society.

Dr. SAMUEL R. WATTS of Washington, D. C., died on November 28, after an illness of several months. He was born in Baltimore, Md., in 1846, and was graduated from the medical department of the Howard University in 1872. He was an ex-president of the Medico-Chirurgical Society of Washington.

Dr. W. A. LEE of Richmond, Va., died suddenly on November 30, in his sixty-first year. He had practised in Richmond during the past thirty-five years and had long been Adjunct Professor of Medicine in the Medical College of Virginia.

Dr. CHARLES S. PARKE of Quebec, Canada, died on November 29, at the age of sixty-three years. He was one of the best known physicians of Quebec, of which city he was a native.

Dr. S. D. GUSTINE of Kenner, La., died suddenly on November 24, at the age of thirty years. Dr. Gustine received his medical education at Tulane University, and for some years had been coroner of Jefferson parish.

Dr. FERNAND HENROTIN of Chicago died on December 9, at the age of fifty-nine years. He was born in Brussels, Belgium, and when ten years old was brought to this country by his father, Dr. Jo-

seph F. Henrotin, who settled in Chicago. He entered Rush Medical College, and was graduated with the class of 1869. He began the practice of medicine immediately, and was County Physician during the fire of 1871 and for several years thereafter. He was several times President of the Chicago Medical Society, and was on its Board of Directors when he died. Besides the Polyclinic, Dr. Henrotin was connected with the Alexian Brothers, St. Joseph's, and the German hospitals.

Dr. Wm. J. Luck of Leesburg, Va., died on December 4, at the age of seventy-two years. He was a graduate of the medical department of the University of Virginia and served in the confederate army as surgeon.

Dr. Melancton H. Fisk of Wanwatosa, Wis., died on December 3, at the age of sixty-two years. He was a graduate of the medical school of Ann Arbor University and had practised in Wanwatosa for twenty years.

Dr. George S. Hull of Bristol, Conn., died on December 4, at the age of fifty-nine years. He was born in Burlington, and in 1872 was graduated from the New York Homeopathic Medical College. He had practised in Bristol for over thirty years.

FOURTH HARVEY SOCIETY LECTURE.

The fourth lecture in the present series given under the auspices of the Harvey Society was held at the Academy of Medicine on Saturday evening, December 1. The speaker, Prof. J. G. Adami, took for his subject "The Myelins and Potential Fluid Crystals of the Body."

Professor Adami began by observing that physicians had made but very limited use of the polarizing microscope, although that instrument unquestionably sometimes gave considerable information not obtainable in other ways. He illustrated this by saying that if a section of a fresh adrenal were examined with the ordinary microscope one saw that, in addition to the well-known markings. With the polarizing microscope these globules showed exquisite markings such as were seen in ordinary crystals. The same was true if one examined the freshly expressed juice from the adrenals. These globules, then, were clearly not neutral fat, for neutral fats do not give these markings. If water were added to the fresh juice the markings disappeared; the same was true if the juice were allowed to dry.

Similar globules were obtained when liver or spleen tissue was pounded with alcohol; when the alcohol evaporated the markings seen in the globules disappeared. In 200 pathological conditions it was found that atheroma of the aorta would show similar markings.

What were these globules, and what did they signify? We could call them "myelins," or myelin globules, but that was merely a label and gave no information. Myelin, the speaker pointed out, had been first recognized by Virchow over fifty years ago, and to-day we knew very little more about it. Although these myelins could be obtained from nearly all the tissues of the body, it was curious to see how little attention was paid to them by most writers. Most textbooks omitted all mention of them. They had been observed first by Virchow in smears of fresh brain matter when brought into contact with water. The tissue seemed to send out peculiar fatty processes, often doubly contoured. At the ends of these processes little globules were frequently observed, and these under the polarizing microscope showed the peculiar cross markings referred to. These "myelins" dissolved in hot alcohol. Strong alkalies caused them to shrink. Virchow thought that the myelins were a class of bodies like, for example, the albumins.

The doubly refractive character of these bodies had been observed years ago, and had apparently been forgotten. So long ago as 1857 Mettenheimer had published his observations on myelin, describing particularly their peculiar optical behavior. For the next forty-four years nothing more was heard of this subject. Then, in 1891, Apati, and independently of him Quincke, in 1893, and still others in 1894 and 1898 had published their researches on this class of bodies, and had called attention to their peculiar refractive power. Professor Adami said, however, that it was probable that all of the myelins do not necessarily occur in the form of doubly refractive globules.

Adami's own work began in connection with the researches of Klotz on the processes of calcification, especially of calcification of the walls of the aorta. The speaker described these studies in some detail and ended by showing that Klotz had found that the calcified deposits were preceded by a stage in which there was a kind of "soap" deposit. In this soap the fatty acid moiety was later replaced by the stronger acids, such as phosphoric and sulphuric.

While Adami was visiting Aschoff, the latter suggested that these "soaps" were identical with the myelins already described by Hochheim. Adami then went on to a description of his experimental work with various soaps to discover if these gave the myelin figures. He found that under certain conditions it was quite easy to obtain these crossed figures with ammonium oleate. One placed a drop of oleic acid on a slide and surrounded it with ammonia.

The speaker did not wish to be understood as saying that the globules obtained in the various tissue juices were simple soaps. He believed, however, that study of the latter would throw considerable light on the former. The globules were akin to crystals, but they were not crystals. They were probably not even solid bodies. On treatment with water they became swollen and lost their double refraction.

The significance of these bodies had been indicated by the physicists; a splendid review of the work had been compiled by Schenck of Marburg, who had himself studied the subject for years. The first to appreciate the significance of these bodies had been Löhlein of Carlsruhe, who had published his observations in a voluminous, verbose "Arbeit" of several hundred pages without table of contents, index, or aids of any sort.

Löhlein had found that if cholesterin crystals were heated to 145° a turbid fluid resulted. On examining this with the polarizing microscope it was found to contain a large number of doubly refracting globules, *i.e.* globules showing distinct cross markings. When heated to 178° a clear fluid resulted, and with this change the double refraction was lost, the fluid was isotropous, reacting to light the same as any other fluid. If the process were now reversed, *i.e.* this clear fluid cooled, the doubly refractive globules were again in evidence. Not all of the globules seen in the turbid fluid showed the cross markings. There were always a large number which appeared like ordinary globules. The globules which showed the cross markings would have to be regarded as crystals,

and as they were undoubtedly fluid in character they were spoken of as "fluid crystals." Curiously the globules without the cross markings and the fluid crystals were both the same substance. The cloudy fluid was not an emulsion as some had contended.

Of the substances which exhibited this peculiar behavior oleates and cholesterin compounds were present in the body. There was considerable evidence to show that the myelin compounds in the organism were of an oleate nature. Derivatives of protagon, such as cholin, when brought into contact with oleic acid made the myelin figures easily. Protagon itself did not give the figures. Benecke had been the first to suggest that the myelin globules in the body were of the nature of cholesterin oleate. Adami said that both he and Aschoff shared this opinion.

Cholesterin oleate was, perhaps, also the source of cholesterin gallstones, for Aschoff had shown that myelin globules could be demonstrated in the mucous membrane of the gall-bladder. In the animal body both cholin and cholesterin were two large groups of bodies which could give rise to myelin compounds.

Adami then discussed the autolytic formation of myelin globules. This seemed to go hand in hand with changes in the nuclei. It had been shown by Dietrich and Hegel that in liver autolysis the lecithin decreased, while the fatty acids as well as the cholesterin, etc., increased. With this change there

I.—Intracellular Myelin Globules.

Summarizing the work, the speaker said that in these myelins we seemed to have remarkable substances intermediate between fluids and crystals, and possessing some of the properties of both classes of bodies. The studies indicated that there was a combination of fatty compounds with proteid, and this might give a valuable insight into fatty degeneration. At present it appeared that a "myelinic degeneration" preceded "fatty degeneration."

Myelin globules had been found in the following conditions:

I.—Intracellular Myelin Globules.

(*a*) Physiological or associated with normal regressive change.

Cells of adrenal cortex.
Granular cells of corpora lutea.
Cells of thymus.
Mucous membrane of gall-bladder.

(*b*) Pathological.

Aorta.—Fatty endothelial patches.
Atheromatous areas.
Lungs.—Alveolar epithelium of newborn.
Bronchial endothelium.
Diseased tissue.
Kidneys.—Fatty degeneration, etc.
Lens.—Cataract.
Tumors.—Many carcinomata and sarcomata.

(*c*) Autolytic.

Lung,
Kidney,
Muscle,
Morning sputum.

II.—Diffused Myelin (Impure Lecithin?).

Myelin gained from most of the tissues; from blood, pus, egg yolk, etc., by digestion with alcohol. (Virchow.)

III.—Myelin in Secretions.

Bile (alcoholic extract).
Small intestine contents.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

FITZPATRICK LECTURES—EXHIBITION OF CASES—SUBLUXATION OF ATLAS—DEFORMITY OF CERVICAL SPINE—INFANTILE MORTALITY—LEADLESS GLAZING—OBITUARY.

London, November 24, 1906.

The Fitzpatrick Lectures at the Royal College of Physicians were delivered by Dr. Norman Moore, who took for subject the history of the study of clinical medicine in the British Islands. He attributes the establishment of this study to Sir Theodore Turquet de Mayerne, Glisson, and Sydenham, though there are indications of such observation in Cains, Gilbert, Harvey, and others who, however, are honored chiefly for their works in other branches. They no doubt made many observations of the kind, and probably committed them to writing, but if so their notes have been lost. This is especially the case as to Harvey. Taking then the writings which show strictly minute clinical observations, Dr. Moore instanced Mayerne as the earliest. He had achieved a high position in Paris, and become physician to the King of France before he came to London, and was appointed physician to King James I. in 1611. He has left a full description of the fatal illness of Cecil, the first minister, from which Dr. Moore concludes it was probably a new growth of the cecum. Another description is that of the fatal illness of Henry, Prince of Wales, 1612. From this Dr. Moore found it easy to establish that the disease was enteric fever, which further was epidemic at the time. Like Sydenham, Mayerne gave himself up almost entirely to bedside observations, and both were most occupied with the problems of prognosis and treatment. Glisson, although equally assiduous at the bedside, was also a morbid anatomist, and his mind turned naturally towards the discovery of pathological laws and to questions of etiology. He was a discoverer in anatomy, and described the capsule of the liver. In physiology he first perceived the irritability of tissues. In clinical medicine he completely described a disease not previously known. His *Tractatus de Rachitide* appeared in 1650, and is an example of clinical observation as well as of pathological anatomy. Virchow in the Croonian lecture for 1893 recognized Glisson as the discoverer of muscular irritability, and Sir M. Foster has shown that he was the first to give exact proof that when a muscle contracts it does not increase in bulk. Glisson is perpetually commemorated as an anatomist, but Dr. Moore said whoever studies the *Tractatus* will be convinced that he also deserves recollection as one of the first followers of thorough clinical study in England. As Mayerne may be said to have established this study here and Glisson to have set the example of combining with it the study of the anatomical appearances of disease, so Sydenham may be regarded as the first who attempted to arrive at general laws about the prevalence, course, and treatment of disease from clinical observation. His originality is one cause of the great repute of his writings; and it is due not only to his having thought differently, but to his having seen more than his predecessors. His description of the severe neuralgia which sometimes is the last symptom of a malarial fever, and his determination of the fact that it really belongs to the disease and must be treated in the same way, was instanced by the lecturer as a remarkable example of his close observation. Sydenham hardly considered morbid anatomy, but endeavored to determine the species and ascertain the course of disease by clinical observation only, which is the method of the Hippocratic writings, and thus, though often regarded as the originator of modern medicine, his works might be considered the culmination of the effects of the Renaissance. The three clinical observers were compared. Mayerne, though a less man than the other two, was a noble figure of vast attainments, lifelong activity, and great influence to make men clinical observers; he seems most in personal relation to his patient, thoroughly investigating his mind and body. Glisson was most considerate of the interpretation of well-observed symptoms given by morbid anatomy. Sydenham had always before him the endeavor to establish general laws in relation to disease, and hoped to do so by a precision of description such as that of botanists in describing plants. It was to these three seventeenth century physicians that the lecturer chiefly ascribed the establishment of the clinical study of medicine in England.

On Monday the Medical Society had an exhibition of cases, some of them of exceptional interest. Mr. Gordon Watson showed one of ileosigmoidostomy after excision of carcinoma of the sigmoid flexure, the colotomy wound being still open, in a man of thirty-three. The question of

dealing with the wound was considered. Mr. Wallace suggested division of the large bowel below the wound and anastomosing it with the part above. This suggestion was endorsed by Mr. Barker. The president, Mr. Ballance, said that portions of bowel put out of use became atrophied, and could not be identified. He took a more hopeful view of the prognosis of this case than the other speakers seemed to do.

Two cases of symmetrical myeloid sarcoma, in a boy of fourteen and his sister a year or two younger, were shown by Mr. Sargent. The boy was admitted to St. Thomas's Hospital in August, 1904, with hard swellings on each side in the neighborhood of the bicuspid teeth, but no enlarged glands. The left tumor was removed; it was not encapsulated. It was a giant-celled sarcoma, with much fibrous tissue. In the girl's case some glands were enlarged.

Mr. Barker showed a case of lymphangiectasis of the left thigh in a man of twenty-two. It had existed for six or seven years, and after food the contents of the swollen lymphatics looked like chyle, suggesting a connection with the lacteals. When the swelling became unbearable the patient would prick it and let out the fluid.

Dr. P. Weber had a case of multiple fibrous nodules about each olecranon, with a rheumatoid condition of one foot, in a woman of thirty-seven. The nodules were not tender, but of tough consistence, and near the bursæ. There was also a small nodule on one finger. Patient had rheumatism two years ago, and since then had not been free from symptoms. The nodules came one year ago. Dr. Weber remarked that there was no hard-and-fast line between rheumatoid arthritis and subacute or chronic rheumatism, and even some conditions attributed to gout.

Dr. J. F. H. Broadbent showed a case which he looked upon as early paralysis agitans, in a woman of fifty-four. Doubts were expressed as to this diagnosis. The patient had felt for about a year increasing difficulty in writing, sewing, and any fine movements of the right hand, a sort of stiffness or weakness, and she said her right leg was weaker than the left. The fingers of the right hand were held in the interosseal position. There was no tremor anywhere, no marked loss of emotional expression, and no alteration in her voice.

Dr. Young showed a boy of 3½ years who had been in hospital at Malta several months previously for acute enteritis, followed by pyrexia, and wasting of muscles of both legs, and to a less degree of the arms. There was some recovery, but the legs were cold and blue. Reflexes lost and the boy could not walk alone. No particular group of muscles seem to have been specially affected. Recovery is gradually taking place.

At the Clinical Society Mr. E. M. Corner read a paper on rotatory subluxation of the atlas, dealing specially with those cases in which, as the result of a violent, sudden twist, the head became fixed in a rotated position, usually the result, he thought, of the locking together of the forwardly displaced side of the atlas on the axis by muscular action. The position and fixation of the atlas could be detected by the position of the transverse processes and by the loss of certain movements. He quoted cases and showed diagrams. He also showed skiagrams from a case he showed at the society in October, 1905, and of which I gave you note at that time. The chief use of a skiagram in such cases would be to show the absence of further injuries, such as fracture of the arch of the atlas or of the odontoid. If these could be excluded an anesthetic should be cautiously given. When muscular relaxation was produced the head would probably roll back into its right position, and on recovering from the anesthetic the head movements would be restored. In reply to a question Mr. Corner said this subluxation could occur without rupture of the ligaments, as these are very lax in the atloaxoid joint.

Mr. Jackson Clarke read notes of a case of congenital deformity of the cervical spine in a boy of four, whose head was fixed from birth. The chin was close to the sternum, and there was no movement of extension, flexion, or rotation in the cervical spine, the appearance resembling some anencephalic cases, but the boy's mind was normal. Operation followed by massage gave the boy a short neck with all natural movements. Skiagrams showed extensive abnormalities in the form of the bones in the cervical and upper dorsal spine, and a cervical rib on each side. Mr. Clarke did not know of a similar case operated on, but he had seen the deformity in adults.

The president, Mr. Clutton, congratulated the operator on his success, and observed that there might be in such cases an anterior spina bifida or spinal deficiency.

Yesterday the Prime Minister received a deputation to urge the necessity of legislation in regard to infant mortality. He agreed that the evil was appalling, and that the matter was one of the supreme tests of civilization. He even hoped that what the government did they would not be slow about. But he weakened this by a warning that it would not do to go ahead of public opinion. Clearly he is ready to follow, but, as usual, not to lead.

Mr. J. Burns, as President of the Local Board, was with the premier, and expressed an agreement with the recommendations of the recent conference on the subject over which he presided. He has a bill drafted on milk depots which he hopes will help local authorities. He could promise support by his department, but one chief factor was spending on beer what should be spent on food for the women and children. He said he would be false to his position if he did not warn working men and women that if they wanted healthy children, the less they spent on drink, betting, and gambling, the more they could secure food, and also rest and leisure, so needful to the expectant mother and nursing woman.

An exhibition of leadless glazed china and earthenware is now being held. It was opened on Wednesday, and addresses were delivered on the improvement of the matter. Much was said about the history of changes that had occurred in the manufactures, the influence of accidents and fashion, as well as on the artistic merits of the productions. It was at first said the leadless glazed articles were less durable, but that being disproved, the question of cost is now being raised. That, as was pointed out by one speaker, is only a question of creating a market. Lead poisoning and the injury to health of the workers are the most important points. As to poisoning, the cooperation of manufacturers and government has reduced the number of cases, but these represent only one-seventh of the cases of illness caused by this dangerous employment. Here there is the certainty that, if we could eliminate the use of lead glazing in this country, free trade would flood us with foreign-made, lead-glazed articles.

Dr. Rob Grieve, C.M.G., late Surgeon-General of British Guiana, died at the age of sixty-seven. He was M.D. Ed. and L.R.C.S, 1861, and entered the navy as assistant surgeon. In 1870 he was appointed Medical Superintendent of the Asylum Hospital, Hampstead, afterwards at Berbice Lunatic Asylum. From 1885 to 1894 he was in British Guiana, and for services there received the C.M.G. on his retirement.

Dep. Surgeon-General R. Webb, who died in October, entered the army in 1854, served in the Crimea, the Indian Mutiny, and the Abyssinian War, and was awarded medals and clasps.

Dr. G. I. Schorstein, M.D., Oxm., F.R.C.P., died on the 16th inst., aged forty-three. He was appointed Assistant Physician to the London Hospital in 1894, and became full physician last year. He had the chair of Medical Pathology at the college. He was also physician to the Hospital for Consumption. Though a man of high attainments and literary taste, he had not begun to contribute much to the societies or journals, but devoted his energies to hospital work and teaching. It was known to his friends that he suffered from diabetes, so that his early death was not altogether unexpected.

OUR PARIS LETTER.

(From Our Special Correspondent.)

SURGERY OF THE VEINS—OPERATIONS ON THE THORAX—PLEOCHROISM—HEMONEPHROSIS—PROSTATECTOMY—DIRECT VISION CYSTOSCOPY—RENAL TUBERCULOSIS—THE CONGRESS OF ALIMENTARY HYGIENE.

PARIS, November 15, 1906.

THE XIX Congress of the French Surgical Society was held at Paris during the first week of October under the presidency of Prof. Monprofit of Angers.

The first question discussed was the surgery of the large veins. A very detailed paper on this subject was presented by M. F. Lejars of Paris, who reviewed the progress made in this domain during the past ten years. He pointed out that the repair of injured veins by suture was one of the most important advances in vascular surgery of recent years, as in this way the wall of the vessel was restored and the flow of blood was not checked. The success achieved in the operation of lateral suture had led to the method of circular suture, to the end-to-end anastomosis after resection of a portion of the vein, and finally to arteriovenous anastomosis. The speaker reviewed the treatment of various types of injury to the large vessels and described the technique of suture; he then discussed the treatment of arteriovenous aneurysm and the treatment of gangrene of the extremities by means of arteriovenous anastomosis. He also touched on the operative treatment of infectious thrombophlebitis in the large vessels, as in the sinusitis of otitic orgin, and in the resection of the pelvic veins in puerperal sepsis.

The second question taken up concerned the methods of opening the thorax for operative purposes and was dis-

cussed by MM. Charles Willems of Ghent and E. Loison of Paris. The former said that intrathoracic surgery involved two principal dangers, that is, pneumothorax and infection. Too much attention had been paid to the former and too little to the latter. While it was true that the simultaneous opening of both pleural cavities was almost inevitably fatal, the danger of unilateral pneumothorax appeared to have been exaggerated. The gravity of this condition seemed to depend, first, on the size of the pleural opening, for when this had a smaller diameter than the glottis the lung did not contract entirely since during inspiration the air could not enter sufficiently rapidly to do away with the pleural vacuum. Second, on the rapidity with which the air rushed into the chest, for pneumothorax produced suddenly through a large incision often gave rise to serious symptoms whereas the gradual entrance of air usually did not occasion alarming manifestations. Third, the length of time during which the pleura remained open, for the danger increased as this period was lengthened. Fourth, on the side which was involved, for pneumothorax of the right side was more serious than of the left, probably because the vena cava and the right auricle whose walls were thin were less resistant to the atmospheric pressure than the left ventricle. Fifth, on the presence or absence of adhesions. Sixth, on individual peculiarities of the patient, such as the condition of the lungs, the state of the general health, the loss of blood, the state of the heart, etc. The second danger attending intrapleural manipulations was infection, which was more likely to occur in these cases than in operations on any other part of the body, and which was more often the cause of death than was the pneumothorax. The speaker discussed the reasons for this susceptibility of the pleura, and said that it should be combated by rigorous asepsis, by restricting as much as possible the duration of the operation, and by the use of gauze packing suitably placed. At the close of the operation the pleural cavity should, if possible, be closed hermetically, or if this could not be done it should be either drained in its entirety or an apparatus for securing drainage by aspiration should be applied by which means the exit of fluid was favored, but the entrance of air was prevented. As for the pneumothorax, the only method of avoiding this was to make the pleural incision only through sufficiently dense and extensive adhesions. As it was impossible to be sure beforehand of their presence or to produce them artificially, it was usually better to substitute for them a circle of pleuropleural sutures in the center of which the opening was made.

Ectopy of the testicle and its complications was the third topic discussed. M. Villard of Lyons, in his address on this subject, stated that the etiology of this condition was still in an unsatisfactory state in spite of the numerous theories that had already been presented. He reviewed the theories of various authors and finally suggested that it might be concerned with the general question of degeneracy and heredity in view of the frequency with which this anomaly was observed in degenerates. Even though in some cases the displaced testicle might attain almost normal dimensions, it always revealed profound changes in the epithelial elements and in the seminiferous tubules. This was in accordance with the clinical facts in cases of bilateral cryptorchidism, that is to say, potency and the sexual appetite were preserved, but the semen had no fecundating power. Cryptorchids were often sterile, but not impotent. It thus appeared that true cryptorchidism involved a double interference with development, both the migration of the gland and the seminiferous epithelium being modified. The speaker then discussed the various methods of orchidopexy, and said that these included two main stages; first, the drawing down of the testicle, and, secondly, its fixation in its new position. He believed that success was most surely attained by providing for a sufficient displacement of the gland, and this was the most certain means of guarding against its reascent. Elongation of the cord to a sufficient degree and accurate anatomical closure of the canal by Bassini's method were also important parts of the operation. Anatomically, the results of orchidopexy were good, since out of 116 operations there were reported 56 in which the result was perfect, 42 in which it was doubtful, and 18 in which there was failure. Functionally, pain was relieved and the virility of the patient was increased, but in the vast majority of cases there was no effect on the function of spermatogenesis. M. Souligoux of Paris, in speaking on the same subject, said that from the pathological standpoint two varieties of cryptorchidism might be recognized. First, ectopy of the testicle due to defective development or malformation of the testicle and its vessels; second, ectopy due to malformation of the enveloping structures, that is, the peritoneal folds, inguinal canal, and scrotum.

The tenth session of the French Association of Urology was held at Paris October 4-6 under the presidency of Prof. Guion. The etiology and treatment of hydronephrosis was discussed by MM. Pierre Duval and R. Gregoire. They stated that a study of the different factors that might give rise to hydronephrosis could be referred to a consideration of congenital malformations. The etiology of acquired hydronephrosis was dominated by these principles of congenital malformation. The other factors usually considered in the etiology of hydronephrosis might be relegated to a secondary place, such as compression of the ureter, traumatic, inflammatory, or neoplastic lesions, the presence of calculi in the pelvis of the kidney or in the ureter, as well as kinking of the ureter over abnormal vessels. The treatment of hydronephrosis should differ according to its varieties. After condemning the simple evacuation of the ureteronephritic sac either by nephrotomy or by repeated catheterization of the ureter the speakers stated that they considered that two methods only should be practised; the one was the radical operation of nephrectomy, the other was conservative, but was variable in its applicability. It consisted either in a plastic resection of the pelvis of the kidney, in anastomosis between the ureter and the pelvis, or in simple nephropexy, which, although of itself of little service, might be a useful supplement to the preceding procedures. Nephrectomy should be done only in exceptional cases, when it was evident that the renal parenchyma had been completely destroyed, otherwise conservative plastic operations were to be preferred.

The indications and technique of prostatectomy were made the subject of an interesting discussion. M. Pauchet of Amiens said that he had performed the operation nineteen times according to Freyer's method, and stated that he considered this easy, rapid, and safe, providing that the postoperative treatment was properly carried out. The results, he said, were marvelous, and he considered that the modifications to the operation proposed by some surgeons introduced needless complications and rendered the prognosis less favorable. The result was to transform an operation that was, to be sure, blind and brutal, but essentially conservative, easy, and efficacious into a procedure that was elegant, but long and severe. For him no changes were desirable in Freyer's operation, which required simply a bistoury and a needle and which should be performed in from three to six minutes. M. Legueu then described the improvements he had made in the operation of suprapubic prostatectomy; the most important features being the control of hemorrhage and the preservation of the prostatic mucous membrane. M. Carlier of Lille also advocated the transvesical operation, and M. Loumeau of Bordeaux expressed himself to the same effect. Several other speakers also spoke in favor of the suprapubic operation in preference to the removal of the gland through the perineum.

The use of the direct vision cystoscope was described by M. Luys of Paris, who emphasized the advantages of the instrument. By this means it was possible to see clearly localized areas and also to subject the entire surface of the vesical mucosa to a searching scrutiny. In catheterizing the ureters it was possible to avoid infection of the healthy ureter, and the operation was feasible even if the bladder were inflamed or bleeding. The method was also of great service in the removal of foreign bodies from the bladder and for intravesical operations. M. Jeambrau of Montpellier reported two cases in which the intravesical segregation of the urine of the two sides by means of the instrument of Luys had not rendered a complete diagnosis possible, and he spoke of the necessity in most cases of also making a cystoscopic examination in order to corroborate and complete the results obtained by the segregation of the urine.

The diagnosis of renal tuberculosis was discussed by M. Desnos, who described a case in which urine obtained through the ureteral catheter contained leucocytes and tubercle bacilli, although the kidney and ureter were on removal found to be free from lesions. Some months later the patient presented signs of a suppurative prostatitis with tubercle bacilli in the urine, and the speaker supposed that some of these organisms had been introduced into the ureter by the ureteral catheter which had carried them on from the neck of the bladder.

The International Congress of Alimentary Hygiene. This congress, which was organized by the Society of Alimentary Hygiene and was inaugurated under the patronage of the President of the Republic, was held at Paris from the 22d to the 27th of October. In the opening address M. Mirman, in the name of the President of the Council, and the entire Government, drew attention to the great interest taken by the French Government in the problems studied by the society and welcomed the official delegates of the foreign countries. He passed in review the advantages of international efforts in this direction, and in

closing expressed the hope that this first congress might be followed by many similar meetings in the future through which much might be accomplished for the good of humanity at large. Senator H. Ricard, the President of the Society, then discussed the scope of the questions which were studied by the society and pointed out the scientific objects to be accomplished. These were, briefly stated, to determine what should be the proper food of man, taking into consideration the various conditions to which he was subjected through differences in age, race, climate, season, occupation, etc., and in what way these foodstuffs might most advantageously be obtained. Prof. Armand Gautier then laid stress on the point that the present congress had even more social bearing than scientific bearing. Political economists and scientists were united in affirming that it was especially necessary to disseminate instruction on how to use the various foodstuffs to the best advantage. Although nothing was more useful than this, few subjects had been so much neglected as the problems involved in this question. The rules that had already been formulated for the care of animals did not exist for the human race. It was now the duty of the States to assist as much as possible in advancing the work of securing and imparting information on this subject, the importance of which had been shown by the recent researches made by scientists on the sources of tuberculous infection in foodstuffs. M. André, the Belgian delegate, in closing the first session, in the name of the foreign delegates, congratulated France on having assumed the initiative in assembling the physiologists, the chemists, and the economists for the purposes of this congress.

THE TREATMENT OF ACUTE SEPTIC PERFORATIVE PERITONITIS, CAUSED BY THE BURSTING OF AN ABSCESS DIRECTLY INTO THE ABDOMINAL CAVITY.

To the Editor of the Medical Record:

Sir:—In an article on "Report of Laparotomies, etc.," by Drs. Marshall and Quick, published in the Medical Record of November 24, the following statements are made: "We operate on every case when the radial pulse can be felt. Early, intermediary, and late operations, as defined by hours, days, are terms that should be relegated to the attic, etc. We have awakened from that condition which makes a god of pulse and temperature." Or, in other words, they care nothing for the condition of the patient and the period of the disease. All they want is the diagnosis and a pulse at the wrist when they cut away. I stated that there were more deaths from appendicitis due to "operate-as-soon-as-the-diagnosis-is-made" plan than were due to the expectant plan of treatment. This was true up to 1903, when the treatment of appendicitis was placed upon a scientific surgical basis. Since that time the death rate in appendicitis has decreased one-half in the State of Iowa (statistics of 1904). Dr. Brownson says: "No case of acute septic peritonitis caused by the direct perforation of the peritoneal cavity (produced by the bursting of an abscess pouring the septic contents directly into the abdominal cavity), will be found with a temperature of 102° and a pulse of 120. Rather will they have a temperature of 105° or 106° and a pulse of 140 or 160, together with a leaky skin, etc." They then proceed to give the history of two cases of injury to the abdomen in which operation was performed, one patient dying, the other recovering, and attempt to show that if Dr. Brownson's theory of temperature of 105° or 106° and a pulse of 150 or 160 are necessary to the diagnosis of acute septic peritonitis from direct perforation of the abdominal cavity, both patients would have been dead instead of one. I will not take up the space to quote these clinical cases in full, for the reader will find them reported on page 811 of the Medical Record of November 24. Any one reading the description can see at a glance that there is no analogy between these cases of external injury to the abdomen, and the internal diseased condition of acute septic perforative peritonitis from rupture of an appendical abscess into the abdomen, which was the subject I was discussing. The absurdity is so plain that it demonstrates itself.

Again they quote: "If Dr. Brownson is not convinced, and still believes that cases of acute septic peritonitis from perforation (by direct rupture of the abscess into the abdominal cavity) are forlorn tasks with which a surgeon should not risk his reputation, let him attack Dr. John B. Murphy, who reports to the American Association of Obstetricians and Gynecologists, thirty-six consecutive cases of general suppurative peritonitis from perforation, with one death." We will not attack Dr. Murphy, but rather will we consult him, for he has already given his opinion in the discussion, and in private conversation at the very meeting, and upon the very paper to which they refer us, as is seen in the following, published by Dr. J. F. Baldwin in the *Journal of the American Medical Association* of November 17: "In cases of general purulent peritonitis the process has been going on as a rule for five or six days, the abdomen is distended, peristalsis has ceased, the hippocratic countenance is marked, the pulse is usually though not invariably rapid, while the temperature may vary from high to subnormal. I have never seen recovery occur in one of these cases, and I never expect to. When, therefore, I saw reports of cases of 'general suppurative peritonitis' in which patients had recovered under redrainage of the pelvis, with the patient in Fowler's position, with or without rectal injections of saline solutions, I felt that I had not been doing my own patients full justice, and accordingly in two or three cases of the character described above I resorted to this treatment, but without the slightest possible benefit.

At the meeting of the American Association of Obstetricians and Gynecologists in Cincinnati, last September, Dr. Murphy read a paper reporting thirty-six cases of "general suppurative peritonitis from perforation, with one death." In the discussion which followed, however, in response to a direct question, and later more fully in private conversation, he stated that he did not mean by this title cases such as those described above, but that he included under this title all cases of peritonitis resulting from perforation, no matter whether the perforation had taken place an hour beforehand or several days. Patients such as those mentioned, he said, were "dead already," and nothing could be done for their relief.

With this understanding, therefore, of what is meant by certain writers when they report cases of "general suppurative peritonitis" terminating in recovery, I think we can all look back over our cases of local peritonitis, though without protecting adhesions, in which we have had prompt recovery following operation and drainage, and in which we have not at any time felt that we had accomplished anything so very wonderful.

If Drs. Marshall and Quick are not yet "rudely awakened from their childlike simplicity, and are not convinced that cases of acute septic perforative peritonitis (from rupture of an abscess directly into the abdominal cavity) are forlorn tasks," let *them* "attack Dr. J. B. Murphy," a surgeon who has always evinced a great solicitude not only for "his own reputation" but for the "science of surgery."

J. J. Brownson, M.D.

Dubuque, Ia.

REMARKABLE FLEXIBILITY OF THE TONGUE.

To the Editor of the Medical Record:

Sir:—I wish to report a case of remarkable tongue power in a female patient of mine. Miss N. came to my office during October last for advice as to a nasopharyngeal catarrh. She mentioned to me that the opening of the Eustachian tube was much larger on the right side than on the left, and when questioned as to the source of her knowledge, said she could feel it with the tip of her tongue. On my expressing doubt as to her power to accomplish this, she at once passed her tongue rapidly behind her soft palate into the pharyngeal vault, and even protruded it into each nasal fossa, so that it could be easily seen through the anterior opening if the alæ nasi were held open and illuminated. Strange to say, she could protrude her tongue but a short distance beyond her lips, and her soft palate was very rigid. She resented the use of a palate retractor very much, claiming that it caused her great pain, even under cocaine, so that I was unable to satisfy myself as to the correctness of her claim of the difference in size of the tubal orifices.

L. E. Norfleet, M.D.

Tarboro, N. C.

Progress of Medical Science.

New York Medical Journal, December 1, 1906.

A Clinician's Observation of Opsonic Therapy.—C. D. Aaron gives his impressions from personal observation of the work of Wright in London. He briefly reviews the broad scientific principles underlying the plan. Opsonin is defined as an ingredient of the blood serum which aids phagocytosis by its inhibiting action on a given microorganism. The opsonic "index" is the opsonic content of normal healthy blood. The index for any particular pathogenic microbe is determined by mixing with fresh human leucocytes the serum to be tested, and an emulsion of the particular bacterium under investigation. After a short incubation this mixture is spread as in making a blood film, stained appropriately, and then examined with suitable microscopic power. The phagocytic leucocytes will now be revealed containing the bacteria in their substance,

and by counting the contained bacteria in a sufficient number of leucocytes, striking an average, and comparing it with a normal serum, the opsonic index for that particular serum and that particular microbe is obtained. In actual practice the determination of the opsonic index can be satisfactorily executed only by a properly equipped laboratory expert sufficiently experienced in bacteriology and serum pathology, and the same consideration applies to the production of the various vaccines, and further, of course, to such steps as the isolation and identification of a given infecting microorganism and the preparation of a vaccine from it. Aaron finds that among Wright's London colleagues the value of the latter's work is highly appreciated. Three principal classes of cases have thus far been treated, viz., chronic pyogenic infections, malignant neoplasms, and various forms of tuberculosis. Pneumococcus vaccine has been used with good effect in chronic empyema following pneumonia. Colon bacillus vaccine alone, or combined with that of some other organism which may be associated with it in the lesion, has been successfully applied in chronic appendicitis, peritonitis, cholecystitis, cystitis, and pyelonephritis, and especially in the unhealing suppurating conditions where the fistulæ remain after abdominal or pelvic operations for various acute or chronic infections. The author quotes Wright as stating that the complete rest in bed, which gradually reduces the temperature in the large majority of cases of pulmonary tuberculosis, is to be regarded as a therapeutical measure for ending those autoinoculations which follow every overexertion. All consumptives laid out on cots and chairs in our seaside or mountain health resorts, or in open-air sanitariums, demonstrate the arrest of the influx of tuberculous poison into their blood by their great gain, for they soon show an appearance of improved health. Wright says: "If only to the appreciation of this fact there could be added the belief that the cure of bacterial infections depends neither upon storage of fat, nor upon the bronzing of the skin, nor yet upon the breathing of fresh air (sea coast air, country air, pine wood air, mountain air, or warm southern air), but only upon the destruction of the invading bacteria by the antibacterial substances of the blood (with or without the cooperation with the leucocytes), we should, I think, have come close to the truth."

Etiology of Cholelithiasis.—This paper, by J. Funke, is based on a bacteriological study of 102 calculi. After describing his laboratory methods, he gives the results of his investigations, stating that of the above number but 31 gave rise to growths on culture media. All the rest were sterile. Only now and then were bacteria found in spreads, and occasionally, perhaps in three calculi, were bacteria found in the spreads when no growth from the same calculus developed in the bouillon. From the infected tubes the colon bacillus was isolated eleven times in pure culture. The *Bacillus typhosus* was found once in pure culture and never associated. The following organisms were isolated once; occasionally they were in pure culture, occasionally associated: *Bacillus limbatus, Bacillus gasoformans, Bacterium oxygenes, Bacillus Friedlander, Bacillus lactis erythrogenes, Micrococcus tenacatis,* and the *Bacillus subtilis.* The last named organism was found in pure culture in eight of ten stones taken from the same case. The *Sarcina lutea* was found in four calculi always associated with one or more organisms; the *Micrococcus cereus albus* was isolated twice. One calculus yielded a bacillus which could not be identified; it resembled the *Bacillus brookeri* very closely. Soft concretions invariably yield bacteria, which are more common in recent cases than in old ones. Drying causes either death or diminution in the propagating power of the organisms, so all calculi should be examined immediately after removal from the body. The general opinion obtains that cholelithiasis is responsible for suppurative lesions. Catarrhal conditions are perhaps necessary for two reasons: First, in order to secure sufficient mucins and pseudomucins to agglutinate the salts formed during the inflammation, and second, in this condition the epithelial cells undergo a set of changes degenerative in nature, during which cholesterin is elaborated; whereas, if infection be severe, death of the cells is rapid and distinct. Necrotic changes result, rather than degeneration. Infection and impediment to the bile outflow are necessary factors in causing the condition, but infection of the gallbladder may occur without cholelithiasis. The author finds but little to support the view advanced by Cushing that bile has the property of agglutination to cause clumping of the typhoid bacillus.

Tuberculosis of the Kidney in an Infant.—J. L. Morse reports one case, the patient being a male infant with urinary symptoms appearing at about the sixth month. A definite etiology was never determined. At the sixth month the urine became turbid, with an offensive odor, and contained considerable albumin. Sediment was composed entirely of pus. This was supposed to be due to mild cystitis or pyelitis, but examination showed many tubercle bacilli. The child was at this time running a temperature of 103° or 104°. Fresh air treatment was at once begun and the child placed under the best possible hygienic conditions. It gradually began to gain, though it was over a year before the urine became permanently and entirely clear. One year later the child was reported as healthy in every way.

The Use of Arsenic in Pneumonia.—Six hospital and four private cases are reported by T. F. J. Dunn. Of the former all but one, and of the latter all, recovered. The medication employed consisted essentially in the use of large doses of Fowler's solution of arsenic. In some cases nothing else was employed, and it was found that enormous doses of the drug were tolerated in a most surprising manner. Five minims every two or three hours were given in these cases for several days without the slightest evidence, either proximate or remote, of arsenical poisoning. In fact, it would seem that these patients showed the same tolerance of arsenic that malarial patients show of quinine, or that syphilitics do of mercury or iodide. Aside from the absence of untoward symptoms there seemed to be positive results in the control of the toxemic symptoms of pneumonia. In several of the cases there was a decided break in the temperature about forty-eight hours after the beginning of medication. Epitomized histories are given of all the cases treated. The mode of action of the drug in pneumonia is unknown. "Arsenic," says the author, "is classified as a general tonic promoting the appetite and digestion, increasing the cardiac action, the respiratory power, etc. It is antiseptic, and possesses antiperiodic power, second only to quinine." From a consideration of these properties he is encouraged to believe that it can also exert some control over the processes associated with the development of the pneumococcus.

Journal of the American Medical Association, December 8, 1906.

Symptoms of Cancer of the Uterus.—J. G. Clark thinks that there is little danger of a too alarmist attitude in this matter. The old notion that marked irregularities, floodings, and leucorrhea at the menopause are normal in any sense should be done away with. Another fallacy with serious consequences is the hereditary theory, the assumption too common in the past, that symptoms could not mean cancer, because there was none in the family history. The fact that cancer is a disease of middle life also cannot be too strongly emphasized. As he shows by a chart, at least 90 per cent. of the cases occur between the ages of 40 and 50. Another fact on which stress has been laid is the importance of injuries of childbirth as a causative factor. Sampson has shown that in 412 cases only 3 per cent. had not been pregnant. The suggestive signs calling for an exhaustive examination in a woman between 22 years of age and the menopause are given by Clark as follows: "1. Any deviation of the menstrual period in the way of an excess or an intermenstrual discharge, especially in women beyond 30 years of age. The most suspicious of these are: (a) a mere show after slight exertion, defecation, or coitus; (b) increasing length of the period, even if only one day more than has been her established habit. Every woman is a law to herself in this respect. 2. An exacerbation in amount or change in character of the discharge in a woman who may have had a simple leucorrhea for months or years. Of these changes a free aqueous, acrid, or blood-tinged discharge is especially portentous. 3. A leucorrheal discharge in a patient who has never had it before. 4. Every atypical discharge in a woman after the menopause. These individuals are especially liable to cancer, and should, if possible, be even more exhaustively examined. 5. Pelvic pain of more than a few days duration should be an urgent reason for examination, although it is very seldom an early symptom of cancer." Clark insists on the use of the microscope, especially when in doubt as to the diagnosis from the early symptoms. In case of cancer of the fundus of the uterus the microscope becomes the principal diagnostic aid.

Radical Operation in Uterine Cancer.—A. von Rosthorn sees hope in the researches as to the nature of cancer and recognizes future therapeutic possibilities, but admits that our present resource is in surgery, and since cancer is, in its beginnings, a local disease, the importance of early operation is self-evident. We can not, nevertheless, assure ourselves of the absolute restriction of the disorder, even when first recognized, hence the need of thoroughness in operation, and he points out the advantages of the abdominal method in securing this. There are certain limitations even to this, and he goes at length into the discussion of the method by which the cancer extends itself by way of the lymphatics. In the future, he thinks, we must direct our efforts to the selection of cases that give promise of favorable results, for surgery will be of no avail when the disease has extended beyond certain limits. The system should be thoroughly built up before operating. The narcosis should be shortened as much as possible, the danger

of infection during operation must be carefully guarded against, and he goes in some length into the various details of technic which he thinks will be advisable in our future work. Cases of cancer must be examined more carefully as regards their morphological characteristics and their clinical types, and we should investigate further the conditions and phenomena of recurrence. He concludes with the following suggestions: "1. The abdominal operation is the most rational for the treatment of carcinoma of the cervix, since by its employment the most extensive removal of the parametric tissue is made possible. 2. The view that glands are involved only in later stages of the disease must be dismissed, and the fact that we sometimes find participation of the glands in the very early stages of uterine cancer has convinced me of the necessity of removing the glands in all cases, as I have always done. 3. Based on my own experience, I urgently advise it as our duty to operate in cases of recurrence which have not advanced too far for such procedures. On this account alone it is important to reexamine at frequent intervals (every eight weeks) after the primary operation."

Criminal Abortion and Illegitimacy.—Home education and the development of self-control in the young is the remedy for illegitimacy, according to J. H. Carstens. If the mothers would explain the physiological processes of reproduction to their daughters, he says, there would be very little illegitimacy. As regards the crime of abortion, he thinks religious teaching has been very weak, and this failing, we should impress on the minds the great immediate danger and the chronic invalidism that follows in many cases. We should also help the unfortunate unmarried by showing them how legitimately to avoid exposure. There is, however, a deeper-seated reason, and that is, he thinks, the tendency to late marriage, and to the correction of this, as well as to home training, must we look for the cure of the evils of illegitimacy and abortion.

Education in Sexual Hygiene.—H. O. Marcy speaks of the need of the education of the young in matters of sexual hygiene as a factor in the prevention of illegitimacy and criminal abortion, and holds that instruction as to the material advantages of a correct life and the dangers of unchastity can be convincing to a young man of average intelligence, and even more to a young woman, even if they feel that it calls for self denial. Virtuous training alone may suffice, but will be still more effective if thus reinforced. Young married couples should also be instructed as to the dangers as well as the moral evil of abortion. He regrets the modern tendency to delayed marriage, especially in the class best fitted for parentage.

The Protection of the Innocent.—E. L. Keyes, Jr., believes that while the physician can start the movement for the education that is needed by the public in the campaign against sexual vice, and can furnish material and arouse enthusiasm, the really ideal instructor, so far as his experience and observation go, for men is the Y. M. C. A. physical director. He is half medical man, half teacher, and is vitally interested in the problems involved. He has found also that such men are much more practical in their ideas as to how this education is to be handled than are most physicians. They view the subject from a pedagogic rather than a medical standpoint, and are already equipped with a large fund of practical educational experience. To such men, he thinks, we should confide the actual working out of these educational problems among men; and to similar women teachers among women if the mother is not available. There is, however, one side of the subject that physicians alone can attack. We can give full warning to venereal patients of the danger they are to others; no venereal patient should pass out of our doors without a full knowledge of the infectiousness of his disease; this should be a matter of conscience and professional duty with every one of us. If one can do more, so much the better, but if every medical practitioner would do this much, he thinks, more would thereby be accomplished than by any other single effort toward the protecting of the innocent.

Surgical Kidney.—G. F. Lydston publishes a number of clinical histories of cases of surgical diseases of the kidneys. In connection with cases reported of malignant diseases, he remarks that while blood in the urine, in conjunction with a solid tumor of the abdomen located behind the colon, is generally regarded as pathognomonic of renal cancer, exceptions occur in which hemorrhage is wanting, as Roberts has shown. Hematuria also is not constant in the beginnings of renal cancer, as two of Lydston's cases here reported demonstrate. As a rule, however, it occurs in considerable quantity. A case of kidney abscess illustrates the recuperative power of the kidney, which, after the operation, only a mere remnant, resumed its functions. Although it is difficult to lay down rules, Lydston is inclined to deem it safer to perform only nephrotomy unless there are special indications for nephrectomy in a given case. Another case of sarcoma followed an exploratory operation for suspected calculus, which revealed no evidence of neoplasm. This and a similar case in the author's experience are suggestive of a premalignant stage of such growths, and raise the question as to whether a nephrectomy would not sometimes be justifiable in cases in which all the symptoms of calculus are present, but none is revealed by exploratory operation. The possibility of a circulatory disturbance existing and being responsible for the symptoms must of course be considered. Other cases reported are of tuberculosis and of calculus.

The Lancet, November 24, 1906.

Ectopic Gestation Occurring Twice in the Same Patient, in Both Instances the Uterus Being Retroverted.—The case is reported by C. A. P. Rowse. The patient was a II-para, in whom the usual symptoms appeared toward the end of the second month. Abdominal incision showed rupture of the right tube with a pint of blood between the two layers of the broad ligament. This was evacuated by the extraperitoneal method. The ovary and tube were not removed. A similar experience happened nine years later, no intervening pregnancy having occurred. At this time, behind and to the left of the uterus was a large adventitious sac containing the ovum and about a quart of blood. The sac was formed by the posterior wall of the broad ligament in front, the ruptured tube above, and the intestines posteriorly. The clot and ovum were removed along with the tube and ovary on that side. The right tube and ovary were found to be bound down by adhesions and were not removed. The patient made a good recovery.

Amyl Nitrite in Hemoptysis and Other Hemorrhages.—Further experience in the direction suggested by the title has convinced F. Hare of the value of this drug. Several additional cases are reported. Hare has now records of 34 cases of hemoptysis, and in all but one the bleeding ceased immediately upon nitrite of amyl inhalations. The quantity used has been from 3 to 34 minims. He calls special attention to the work of Pic and Petitjean, who have demonstrated experimentally the action of the remedy. Dogs weighing from 15 to 20 kilograms were curarized, part of the chest wall removed, and artificial respiration was performed. Amyl nitrite was then injected into the femoral vein. Within a few seconds white patches commenced to form on the surface of the lung. These steadily extended, then coalesced, so that finally in from two to three minutes all, or nearly all, the lung parenchyma became exsanguine. This extreme effect lasted several minutes, but from seven to ten minutes elapsed before the normal rose color returned. It would seem that the vasomotor influence of the drug, at any rate, upon the pulmonary circulation, is more enduring than has been suspected. The hemostatic power of the vascular change was demonstrated by snipping the anemic lung with scissors, when hardly a drop of blood exuded. Pic and Petitjean consider that the drug acts through an active vasoconstriction of the pulmonary system, not less than through vasodilation of the systemic periphery. They state that synchronously with the paling of the lung there is a rise of pressure in the pulmonary artery. Against this conclusion, however, must be placed the clinical fact that amyl nitrite is equally efficient in many hemorrhages from the systemic vessels. Menorrhagia, apparently from any cause, may, as a rule, be effectually controlled by a single inhalation a day.

Perforated Gastric Ulcer: Operation; Recovery.—Two successful cases are reported by D. Macartney. In Case 1, a healthy man of 41 years was suddenly seized with griping abdominal pain, and was operated on in twelve hours. Perforation of the anterior stomach wall was found midway between the curvatures and about three inches from the pylorus. No stomach contents of a gross character had escaped. At the site was what was at first regarded as a fat globule, which the operator's finger might have dislodged from the supraperitoneal layer or from the omentum, but closer examination showed it to be a pioneer granulation formed on the serous surface as the final step in the ulceration. The treatment and subsequent history are without any special features. Case 2 was that of a man of 29 years with stomach symptoms suggestive of flatulent dyspepsia lasting over a period of several years. He had dieted himself somewhat, avoiding vegetables, but his seizure of abdominal discomfort became more frequent. In the course of a few hours after a sudden seizure of severe epigastric pain and vomiting, he was operated on. On the anterior gastric wall toward the pylorus was found a clean punched-out perforation. The ulcer was excised by an elliptical incision an inch in length and the edges of the wound were closed by three rows of continuous suture, as in gastroenterostomy. There was a track of inflamed area from the vicinity of the ulcer leading backward toward the junction of the liver and the right kidney. The area was visible by the white exudation due to the escape of part of the contents of the stomach. This was carefully

wiped away with gauze sponges and then copiously washed out with salt solution. There appeared then so little contamination that it was deemed right to close the abdominal wound completely, and to do without draining either there or in the flanks. A quantity of the saline solution was purposely left in the peritoneal cavity. The subsequent course was uneventful.

The Reciprocal Relations Between Affections of the Uterus and Its Appendages, and the Rest of the Body.—T. Wilson enumerates the body changes which take place upon the establishment of menstruation, and notes also the mental alterations characteristic of this period. When normal lactation takes place equally remarkable changes occur in the genitalia. Corresponding retrograde changes mark the menopause. The uterus and appendages are brought into intimate relations with the rest of the system through the nervous system and blood and lymph circulation. The close connection between the uterus and nervous system is embodied in the word "hysteria." Other possible neuroses are migraine, epilepsy, and asthma. Removal of a uterine polyp has cured asthma. In exophthalmic goiter, changes in the female genitalia and their functions are frequent. The condition is often ushered in by amenorrhea. Eight cases are summarized by the author: The marked results that follow upon the complete removal of both ovaries have long been well known, but the exact mechanism by which these changes are brought about is still very imperfectly understood. A considerable amount of evidence has been accumulated in favor of the theory that they depend upon the internal secretion of the ovary, and not upon the action of the nervous system. In osteomalacia it has been found that removal of the ovaries results in the arrest of the diseased process. The disease is characterized by a softening of the bones, and in the later stages by a destruction of proteids, not only in the bones, but in the whole organism; there is a decided increase in the amount of calcium, magnesium, and phosphorus, and of the nitrogen excreted in the urine. The removal of the ovaries is followed by a great diminution in the excretion of phosphorus and by the restoration of the normal firmness of the bones. The results that have been obtained from implantation experiments on animals afford another proof that the ovaries exert their influence on the organism by means of their connection with the blood, and not through the nervous system.

British Medical Journal, November 24, 1906.

The Action of the Salicylates in Rheumatism.—R. Stockman notes that in the absence of any certain knowledge regarding the specific microbe of acute rheumatism and its toxins, it is impossible to determine experimentally whether the salicylates act as bactericides or as antitoxins. Their action on known organisms and ferments is one of inhibition of action of both living ferments and enzymes. In the body their action is conceivably exerted in either direction. Their effect in acute rheumatism is definite and certain. With reference to the characteristic shifting of the pain from joint to joint, and the rapid subsidence of the latter from an inflammatory state without permanent damage, the author says that we should not regard this shifting as a metastasis. The fact rather signifies that all the joints are not invaded simultaneously by the morbific agent. The most probable explanation of the rapid subsidence of the swelling and pain is that locally in the joint an antitoxic or antibacterial substance is formed which powerfully antagonizes the poisonous agent, and does it so rapidly that the joints are very seldom injured. The closed cavity of the joint probably favors the accumulation of the antibody until it reaches a highly active degree of concentration. This view is supported by the circumstance that, while the fibrous tissues of the joints, tendons, and aponeuroses are also very often the seat of rheumatic infection, it is well recognized that in these places the inflammation is usually very persistent, and apt to leave behind permanent fibrous thickenings. This, says the author, is owing to the antibody being in much less quantity in the body serum than in the joint effusion. The explanation of the rapid action of sodium salicylate on the pain and swelling of the joints is that it is excreted into the joint-cavity from the blood in comparatively large amount, as can be readily shown by its detection in the fluid withdrawn by means of a hypodermic syringe. On the other hand, colonies of microbes settled deep in the fibrous tissues, or in the valves of the heart, are more or less sheltered from the action of the salicylate, and are probably scarcely reached by it; or, if reached, the solution in the serum is too diluted to exert much action. This is suggested as the explanation why valvular rheumatic affections and those of fibrous tissues generally are not nearly so amenable to the action of salicylates as the joints are. The important practical deduction to be drawn from this is to treat the patient at once and with large doses, so as to kill off the microbes while they are still in the blood stream or joints, and before they have had time to establish themselves in the fibrous tissues. Early treatment with sufficient doses greatly lessens the risk of acquiring valvular disease and chronic fibrositis.

Rheumatic Fever and Amyloid Degeneration.—Four cases with histories and autopsy reports are studied by J. M. Beattie. He notes the general acceptance of the fact that amyloid changes are generally referred to some long acting bacterial infection. Four cases of cardiac disease following rheumatism, and in turn followed by amyloid degeneration, have come under his notice. The organs affected in the various cases were in differing combinations, liver, spleen, kidneys, adrenals, and small intestines. All the patients were young. All presented the usual history of amyloid disease, viz., a toxin being absorbed fairly constantly for a prolonged period, and, so far as could be made out from the history and from the microscopic examination of the organs, the only poison acting here was that of acute rheumatism. There certainly was neither tuberculosis nor syphilis in any of the cases. It is generally admitted that the causal toxin is bacterial in origin, and in one case an organism corresponding with the *Micrococcus rheumaticus* was isolated. Lending support to the view that the amyloid degeneration was caused by the poison of rheumatism was the relation of the infection to the only definite clinical manifestation of the degeneration—the diarrhea. This was recorded in three of the cases (in the fourth there was unfortunately no record, either clinically or post-mortem, of the condition of the intestine), and in all it appeared just a short time before death. Beattie thinks that these cases give considerable support to the theory that acute rheumatism is a bacterial disease.

Congenital Laryngeal Stridor.—A series of cases is reported by D. R. Paterson. The ages of the patients varied from eight months to two years. Examination was made under chloroform by means of the Killian tube-spatula, the parts about the pharynx and larynx being well cocainized. The influence of irregular and convulsive action of the respiratory muscles as a factor was eliminated, for, in all, stridor became more marked the deeper the anesthesia. On the other hand, it varied notably with the position of the patient, being most evident in the dorsal posture, distinctly less on the side, and with the tongue pulled out, while it was very definitely relieved by placing the tube-spatula on the base of the tongue and tilting it forward. On passing the tube-spatula the curving of the epiglottis was noted in varying degree and the approximation of the aryepiglottic folds, but the most striking appearance was the extraordinary excursion of the posterior wall of the larynx. With each inspiration the soft parts on the cricoid, including the arytenoids and the interarytenoid folds, disappeared, so to speak, into the interior of the larynx, being drawn downward and forward, and to such an extent in pronounced cases that the upper border of the cricoid could be seen as a transverse ridge through the stretched mucous membrane. Diagrams show this change in position of the posterior wall. It was this movement which produced the stridor. With the aryepiglottic folds coming into close apposition during inspiration, the passage of air was only possible by the downward and forward displacement of the posterior wall through suction, and it was the vibration of this section of the laryngeal entrance which gave rise to the noisy stridor. This was confirmed when the posterior wall was held back by means of a curved probe and the air passed in easily and without stridor. If a short tracheal tube (child's size) were inserted just within the entrance of the larynx, all noise at once ceased, the glottis appearing quite normal, and showing no sign of spasm or paralysis of the vocal cords. Pushing the tube further, the trachea was found unaffected in all, and there was no encroachment on its lumen, so that the influence of an enlarged thymus must be regarded as accidental, and no part of the classical affection. With expiration the parts resumed their natural upright position, and at the end of that act the larynx had the appearance of the slightly accentuated infantile type. Paterson's conclusions differ from those generally accepted. In his own words, they are as follows: (1) There is no malformation beyond an exaggeration of the natural incurving of the infantile epiglottis which can easily be unrolled by the probe. (2) There is no evidence of abnormal breathing, as has been suggested by other authors. In deep anesthesia the breathing is regular and the stridor very marked. (3) Stridor takes place at the entrance of the larynx by vibration of the soft structures on the posterior wall. The vocal cords take no part in its production.

Preventing Hemorrhage in Operations on the Skull.—On either side of the projected line of incision a long needle carrying a heavy silk ligature is passed between the scalp and the skull. The two ends of the ligature are then tightly tied over a suitably curved strip of metal so as to compress all of the vessels about to be cut through.—KRADEL, *in Zentralblatt für Chirurgie.*

Book Reviews.

THE MEDICAL RECORD VISITING LIST or Physicians' Diary for 1907. New Revised Edition. New York: William Wood & Co.

THIS well-known visiting list is again to hand, and contains, in addition to the usual pages for patients, etc., many valuable items of information. Tables of dosage, duration of pregnancy, antidotes, signs of death, artificial respiration, and hints on the making of wills are to be found in the first thirty pages of the book. At the end of the volume are pages for special memoranda, consulting practice, obstetrical engagements and practice, record of vaccinations and of deaths, addresses of patients and of nurses, and for cash accounts. The book is of convenient size for the pocket and is handsomely bound in flexible morocco.

DIET AND FOOD, Considered in Relation to Strength and Power of Endurance, Training, and Athletics. By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Author of "Uric Acid as a Factor in the Causation of Disease" and of "Uric Acid: an Epitome of the Subject." Sixth Edition, with Seven Illustrations. Philadelphia: P. Blakiston's Son & Co., 1906.

THE text of this book, like that of the previous edition, is arranged in four chapters: Some Points in the Physiology of Albumin and Urea; Physiology and Pathology of Fatigue; Foods Available: their Properties and Relative Importance; Values of Food in Albumin and Urea. Quantities required. Diet of Training and Athletics. The writer lays great stress on the importance, both mental and physical, of the correct understanding of dietary questions. He shows that this science which he discusses controls the building of the brain cells. It lies at the root of all the problems of life. It is now realized that many perversions and deformities which were formerly considered to be deliberate and voluntary belong in the realm of the physician, and are as true diseases as is a crippled joint. The stimulative forms of diet, the author believes, are at fault for many of the baffling mental and physical diseases. He thinks that reform of the ordinary diet is imperative.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by H. R. M. LANDIS, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. September, 1906. Philadelphia and New York: Lea Brothers & Co., 1906.

THE current number of Progressive Medicine commences with a review of the diseases of the thorax and viscera, including the heart, lungs, and blood-vessels, by Dr. Ewart. Special attention is given to pulmonary tuberculosis; the rôle of the lymphatic system, the early signs of the disease, and the treatment, are all fully discussed. The sections on opsonic immunization and the vaccine treatment of tuberculosis are instructive and interesting. Pleurisy, bronchitis, empyema, pneumothorax, asthma, and emphysema are also carefully treated. In the section on the heart particular attention is drawn to the causal relation of the Stokes-Adams symptom to heart block; the anatomy, physiology, and pathology of the bundle of His or Gaskell's bridge are also dealt with. The progress in dermatology and syphilis is carefully reviewed by Dr. Gottheil; Dr. Norris gives an admirable *résumé* of the year's work and literature in obstetrics; and Dr. Spiller performs the same office for diseases of the nervous system. We can only repeat that Progressive Medicine is not only reliable, but also readable

CLINICAL DIAGNOSIS. A Textbook of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By CHARLES PHILLIPS EMERSON, A.B., M.D., Resident Physician, the Johns Hopkins Hospital, Associate in Medicine, the Johns Hopkins University. Philadelphia and London: J. B. Lippincott Company, 1906.

THE writers of new books on this subject no longer labor in virgin soil, and their predecessors have accomplished enough to make it no easy matter to improve on what has already been done in this direction by some of them. A volume devoted to laboratory methods of diagnosis appearing to-day must therefore be judged by much more rigid standards than would have been the case a few years ago, when the field was still comparatively unoccupied. The present work is introduced with the explanation that it is intended to cover the ground in a somewhat different way by attacking the subject from the clinical rather than from the laboratory standpoint. This ambition is a most laudable one, and so far as it has been carried out reflects nothing but credit on the book. Many sections, for example that on the sputum, and the discussions of the value of routine blood examinations and the testing of the functional efficiency of the kidneys, are admirable in this respect, while the author's general policy in selecting the methods to be described also deserves commendation; but the reader who has allowed his expectations to be unduly aroused by the preface may possibly end his critical scrutiny with the reflection that, like Mark Twain's classical amphibian, this frog has, after all, not so *very* many points of difference from other frogs. None the less, in most of its important features the book is quite satisfactory; so much so that it is a pity the pains were not taken to avoid a number of minor defects. It seems probable that it was both written and put through the press in some haste, for the reader is constantly being irritated by pecadilloes of orthography and diction that just a little more time on the manuscript and proofs would surely have obviated. These are sometimes merely Hibernicisms, as when, on page 460, it is stated that "on the central glass table cross at right angles twenty-one parallel lines," and on page 324 one is directed to use "boiling water at 95° C.," or when, on page 156, it is said that pepsin is "found absent" —sometimes only amusing, as on page 606, where dum-dum fever is called "dam-dam fever"—but sometimes downright misleading to the student, as in the statement on page 318, that in Töpfer's method (spelled Topfer's) the total hydrochloric acid is equal to the sum of the results of the dimethyl-amido-azobenzol and alizarin titrations, and in the reference on page 404 in regard to the presence of placental cells in the blood of pregnant women which conveys the impression that one has only to seek to find them. On page 492 some of the conditions causing leucocytosis are discussed, but though the heading "Mumps" is there the seeker after information on this subject will be disappointed, for it is followed only by a blank space. If what may appear to be undue prominence has been given to these blemishes it is only because they are of a sort that the reader may reasonably expect an author to avoid; numerous other questions which are more or less matters of individual judgment, such, for example, as the omission of any reference to the spirochetes in syphilis or to Sahli's desmoid reaction, have not been taken up. It is to be hoped that the succeeding editions, of which we trust there will be many, will see the volume purged of its crudities and made in all ways as good as it is in most. It would be unfair not to give particular mention to the illustrations, which are numerous, well selected, and worthy of unqualified praise.

TOXICOLOGY. The Nature, Effects, and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By CASSIUS M. RILEY, M.D., Professor of Chemistry and Toxicology in the Barnes University, and Dean of Barnes College of Pharmacy; Member of American Medical Association; Member of American Pharmaceutical Association. Third Edition, Revised and Enlarged, with Illustrations. Philadelphia: P. Blakiston's Son & Co., 1906.

IT is only five years since the appearance of the first edition of this book; it seems, therefore, to have justified its existence. The volume constitutes a concise and up-to-date textbook for medical students and practitioners who take no great interest either in legal cases or in elaborate methods of chemical analysis. The work is well arranged and will appeal to the busy physician.

DAS PROBLEM DER SYPHILIS und Kritische Betrachtungen über ihre Behandlung. Von Prof. Dr. O. ROSENBACH in Berlin. Second Edition, Revised and Enlarged. Berlin. August Hirschwald, 1906.

ROSENBACH'S monograph is a protest against the abuse of mercury and the iodides in the treatment of syphilis. The idea is not exactly a new one. It has been taught by several syphilographers of the modern school that overdrugging is useless in syphilis as in all other diseases. The old "safe and sane" doctrine was, that if you have a patient with syphilis, keep him pumped full of mercury, and later full of iodides as well, until he has safely rounded the third annual milestone, and then keep treating him with antisyphilitic drugs at intervals as occasion requires.

The author believes that after the disappearance of the secondary and of the ulcerative tertiaries no further mercurial medication is needed; that such patients are best treated by general measures tending to improve their health, by tonics, by proper care of the skin, etc.

The book is well worth reading, but in his abhorrence of dogma Rosenbach grows so dogmatic himself, on the other side of the question, that one can hardly accept his preachings as the last word on the subject.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held November 26, 1906.

DR. FLOYD M. CRANDALL IN THE CHAIR.

Report of the California Relief Committee.—The Relief Committee of the New York Academy of Medicine and of the Medical Societies of the Counties of New York and of Richmond submitted the following report of their proceedings: The Committee was organized on April 25, 1906, with the election of Dr. C. L. Dana as Chairman, Dr. J. H. Huddleston as Secretary, and Dr. C. H. Richardson as Treasurer. It held nine meetings and issued appeals to the medical profession in New York, individually and through the various medical societies of the city. It was early aided by a gift of $5,000 from the New York Chamber of Commerce, which was given as part of the medical aid fund raised in New York. As a result of correspondence with the President of the San Francisco County Medical Society and Dr. E. T. Devine (representing the Red Cross Society), it was decided that the funds raised should be placed in the hands of Dr. W. I. Terry, Chairman of the Relief Committee of Physicians of San Francisco. Apart from the gift of the Chamber of Commerce, there was received, through 440 individual subscriptions, $5,661.10, and through fourteen societies, $2,040. The societies contributing were the following: The Women's Medical Association of New York City, the Quiz Medical Society, the Metropolitan Medical Society, the New York Society of Dermatology and Genitourinary Surgery, the Harlem Medical Association, the Medical Society of the County of New York, the New York Academy of Medicine, the German Medical Society of New York City, the Eastern Medical Society of the City of New York, the New York Society of Internal Medicine, the Alumni Association of the New York Hospital, the Alumni Association of St. Luke's Hospital, the Yonkers Practitioners' Society, and the Medical Union Society. The disbursements, which covered printing, postage, express charges and clerical services, amounted to $226.52. The amount from medical sources sent to San Francisco was $7,474.58. Drs. C. L. Dana, J. H. Huddleston, and R. H. Sayre signed for the New York Academy of Medicine; Drs. F. M. Crandall, J. V. D. Young, and C. H. Richardson signed for the Medical Society of the County of New York; Drs. C. E. Pearson and G. P. Jessup signed for the Medical Society of the County of Richmond. The report was received, ordered placed on file, and the Committee discharged with thanks.

The History and Principles of the Method of Motor Reeducation in Tabetic Ataxia.—Dr. H. S. FRENKEL of Heiden, Switzerland, read this paper. He said that sixteen years ago when he demonstrated in three cases the principles and methods in the care of ataxic patients much astonishment and mistrust were displayed, but had since disappeared. He recalled two patients, one of whom was a woman whom he had followed for ten years, during which time the condition had remained excellent. He did not wish his hearers to believe the cases reported were accidents; they were all cases of ataxia in the severe stage, and they were made to walk, but only when free from certain complications. After dwelling upon the functions of the upper and lower extremities, showing wherein they differed, he said that ataxia of the upper extremities presented a different clinical picture from that of the lower, that there were different laws of evolution and, consequently, the treatment of the upper extremities required methods entirely different from the treatment of the lower. He then considered the fundamental principles of the method. The principle of the method used was more readily understood when one remembered that the ataxia in tabes dorsalis held an isolated position among the organic motor disturbances; certain tracts of the spinal cord were involved, but not those that conducted motor impulses, only those containing centripetal fibers, *i e* those of sensibility. The two points that had not been clearly called out in the discussion of this subject were (1) in tabetic ataxia the lesion was always contained in the posterior tracts, and nowhere else; and (2) no observation or experiments could be found in the literature which might lead one to think that there were other than centripetal fibers in the posterior tracts. Lesions of the posterior tract caused ataxia. Dr. Frenkel did not agree with Dr. Leyden's statement that cutaneous sensibility had much influence upon motions, and he had been given the opportunity here in New York to demonstrate cases to physicians showing that, in spite of marked ataxia, cutaneous sensibility was but little disturbed. The degree of ataxia depended upon the sensations caused by the muscular sense itself during contraction. The object of the method was then considered. He again emphasized the fact that when a healthy person learned a new muscular coordination, his sensibilities did not show any improvement so far as could be demonstrated objectively. In skating, billiard playing, etc., one acquired the faculty of contracting proper muscles in a proper way, thus gradually eliminating the awkwardness which in the beginning interfered with the proper movements. This, too, depended upon the integrity of the function of the entire motor system from the cerebral centers to the muscular fibers. In tabes this system was intact. In short one could compensate this impairment of sensibility by education, for the reason that the motor system was intact. In tabes one was not dealing with anesthesia but with diminished sensibility. Disturbances of coordination could be eliminated by proper exercises. These patients were taught certain movements; the speaker intended to teach them just as masters taught dancing and riding, etc., by a simplified instruction as to different movements by splitting up different movements into their elements. They must know not only in general but in particular the various phases of those extremely complicated processes in walking and standing. He then explained why the act of standing was so complicated. He wished it to be understood that when one started to walk it was not by reason of the legs but by reason of the trunk or upper part of the body, changing the center of gravity, etc. Tabetic patients often could stand perfectly well on both feet but they were absolutely unable to walk. Without an exact knowledge of the upper part of the body or trunk, no treatment can be applied. The various methods of treatment applied to patients in the sitting posture or by supports were without value in teaching them to walk. He called attention to certain dangers which might arise from the unscientific application of the method; there was great danger in misapplication of the method. The reeducation method should not be confounded with any kind of gymnastics. In applying the method attention should be paid to the subjective symptoms. With regard to results, he said that even in advanced cases, the ataxia could be cured completely, but not the tabes. Those cases gave the best results when the most important symptom was the loss of coordination. The poorest results occurred when there were great impairment of the general health, constant pains with trophic changes, frequently occurring gastric and intestinal crises, etc. He made a public appeal in behalf of tabetics so far as public care was concerned. They were in a peculiar position as compared with other chronic nervous invalids. A protracted course of locomotor ataxia left them in an unchanged condition for from ten to twenty years. The people who had been successfully treated remained throughout the rest of their lives absolutely free from ataxia and many were able to work. Some were unable to work; some were afraid to go about in twilight, others feared slipping while walking, etc. The treatment he advised should be given in institutions, be-

cause it required a great deal of time every day. This educational treatment when well conducted would counteract pauperism to a very great extent. Many could be restored to social independence.

Dr. Charles L. Dana said that locomotor ataxia was a disease which developed in several different ways. There was a small group of cases in which the patient lived ten, twenty, or thirty years without any manifestations except those of continued attacks, and these were cases in which the method of reeducation was not necessary. There was another group of cases characterized by progressiveness, with changes in the optic nerve, with little ataxia or other tabetic symptoms. This group also was a small one and did not require any reeducation. There was a third group in which there was a hypertonic condition of the muscles; they seemed to be too long and too lax. They presented examples of arthropathies. Here, too, reeducation methods did not apply. There was a small group of cases in which there was an involvement of the motor system, atrophic changes occurring in the lower limbs, the muscles becoming weak, etc., and these were the hopeless cases from any point of view. In the majority of the cases of tabes dorsalis the ataxic element was the predominant one; therefore, the method of reeducation applied to the large proportion of ataxic patients. He thought Dr. Frenkel's theory regarding the method of treatment was a sound one and he said he had used it for a good many years and always obtained some results, but not the same success that Dr. Frenkel got. This method was a distinct therapeutic measure in organic disease and a debt of gratitude was due Dr. Frenkel for pointing out the great evil done by the indiscriminate and unscientific application of the measure. Dr. Dana said that even now there was a movement on foot for the public care of ataxic patients.

Dr. Edward D. Fisher said that if anything could be done on scientific lines for this hopeless class of patients it was of vast importance and the method Dr. Frenkel employed appealed to every one. Of course it was more difficult in the case of tabetic than in an ordinary individual to teach him any special set of movements. The principal thing to note was the lack of muscular sense, the patient no longer being able to know whether the flexor or extensor muscles were used: this gave a sense of uncertainty in walking. There was no motor disturbance in the sense of speaking of motor disturbance as a paralytic affection; there was no true paralysis in locomotor ataxia, although there was some loss of tone in the muscles. The wasting of muscles was not a part of locomotor ataxia.

Dr. B. Sachs said it was a matter for congratulation, not only to listen to Dr. Frenkel's exposition of his views. but to note the manner in which he had studied the subject. Such discoveries did not come to the majority of the people unless they were willing to do lots of hard work. Dr. Frenkel's reasoning and studies had been recognized by all of them, and also what he had done not only in educating these tabetics but also in educating the neurologists and giving them a proper conception of the disease. The results of the application of his treatment showed that his views were correct. Seven or eight years had passed since Dr. Sachs had endeavored to carry out the movements. Dr. Frenkel had not shown the movements he employed, not really considering that a very important point; every one who applied this treatment must develop his own set of movements and exercises. He believed that there were a certain number of cases of tabes in which the cutaneous sensibility was distinctly disturbed; in these cases greater difficulty was encountered in endeavoring to teach them to walk.

Dr. Smith Ely Jelliffe said that ten years ago a physician suffered from a severe case of ataxia; he had been a sufferer for years and had made up his mind that the best thing for him was to go to bed. After hearing of this method of treatment and reading of the results obtained from it, he became very enthusiastic and took up the method hopefully and successfully. At present he was able to be about and walked well. Initial experiences with the treatment did not turn out so well as the later ones. Dr. Jelliffe believed it was necessary to distinguish a number of components, each of which had a decided relationship in the prognosis and treatment by this method. To him it seemed as though there were five, as follows: Anesthesia or diminished sensibility of the skin, of joints, and of muscular contractility; loss of reflexes and hypertonicity; disassociation of motor associations; and psychical influences. In each of these there was a certain varying proportion of these components which determined in large degree the capacity for the individual to be improved by this method. There were two types of cases in which there was a bad prognosis, those in which there was a marked degree of muscular insensibility and those in which there was a marked degree of hypertonicity. In both of these classes his own experience had been very limited.

Dr. George W. Jacoby said that his visit to Dr. Frenkel had made him a firm adherent, not only to the principles of the method, but to Dr. Frenkel himself. If any one knew the close attention paid by him to the respirations, the pulse, the heart, etc., they would bear him out in the statement that the method was one which everyone could not take up. One could teach only what one had learned, and every one could not learn this method in a few weeks or months. It should be remembered that there was no tabetic who did not have some amount of sensibility left, and this amount could be educated to a degree that another person with normal sensations in the integument and joints could not attain. With regard to results he said that already in New York City they were beginning to see results. Dr. Frenkel was holding clinics all over, and he claimed to be able to cure ataxia in a great many cases of tabes, and to relieve the ataxia in nearly all cases if sufficient time was given. Dr. Frenkel had taken locomotor ataxia from the category of progressive diseases. The method of treatment was of necessity an institutional one.

Address of the Retiring President.—Dr. Floyd M. Crandall made this address. He congratulated the society upon the manner in which differences had been forgotten during the past year and thought that they had really formed a reunited society in fact as well as in form. The year had been notable, not only on account of the reunion of the profession in New York, but because the most important medical law ever enacted in this State had been enacted on April 4, 1906, and also because this had been the centennial year. A third fact also combined with the two former to make the year memorable. The agreement which brought about the amalgamation also instituted a new system of organization and changed the relations between the State and county societies. In the performance of official duty during this first year of amalgamation it was clearly the duty of the executive body to carry out the provisions of the contract which had been agreed to under the new organization. Previously the society had always been pinched for means and clerical assistance, but modern business methods had now been introduced and all papers and documents were properly classified and filed and made available at any time for reference. The work of the Secretary and Treasurer was voluntary and virtually gratuitous, consequently a competent stenographer and typewriter had been employed. He referred to Dr. Richardson's great labors in connection with the California Relief Committee. Over $30,000 of trust funds had passed through his hands, and over 5,000 accounts, and all this had been accomplished almost without an error. The publication of the Medical Directory had been suspended and the accounts closed, the State Society being able to perform this work more satisfactorily. He spoke of the extent of the work done in the counsel's office. During

the summer the officer detailed by the Police Department to the work of the County Society investigated over 400 complaints and a large number of cases were made ready for prosecution. The Health Protective League, which had just been formed, was in no sense a rival of this society. There would still be left more work along this line than the society would be able to perform. The fines imposed during the past year amounted to $3,785, and the total expenditures for legal work were $4,135. The Milk Commission had enlarged its work and made it much more effective. In legislative matters the society had taken the same active part that it was accustomed to take, and had fought the optometry and osteopathic bills with great energy. Hereafter there would be a standing committee on legislation. There had been a misunderstanding in regard to the membership list which was due to the fact that members had not been dropped for nonpayment of dues, and deaths and removals had not been carefully kept account of. The books of the Treasurer showed that in 1905 1,476 members paid their dues. It was with these figures that the membership of 1906 should be compared. The records to-day showed over 5,000 names and formed a history of the membership of the society approximately correct as far back as 1860, and as correct as it would ever be possible to make it back to 1840. The active list was correct, and showed a membership of 1,839 on December 9, 1905. During the year twenty-four had died and twenty-six had resigned on account of removal. At present there were 2,308 on the membership list. Formerly a solicitor had been employed to obtain new members, but this was not considered wise policy and the practice had been discontinued. Financially, the year had been the most successful one for a generation. The total income aggregated $21,908.56, and there was a balance of $3,094.01 in the treasury. The available income of the society was derived from membership dues alone, and the most encouraging fact in the year's work was the payment of arrears of dues to the amount of $950. Summarizing the effects of amalgamation upon the Medical Society of New York County, he found the receipts from membership dues were $2,198 greater than the average receipts for the five years preceding it, and $1,803 greater than for the year immediately preceding. The keynote of the new constitution was the Comitia Minora, a body of twelve men, to whom all officers, employées, and agents of the society were amenable. The past year had been a laborious one for those entrusted with the administration, but "nothing succeeded like success, and nothing made hard work lighter than prosperity." Harmony and good feeling had made the work a pleasure. He closed by thanking the Comitia Minora for their loyal support and their tireless devotion to the interests of the society.

Resolution Regarding the President-Elect.—Dr. Cornelius G. Coakley offered the following resolution, which was unanimously carried: The Medical Society of the County of New York having been informed of the prolonged and serious illness of the President-elect, Dr. Walter Lester Carr, extends its hearty sympathy, and hopes for a speedy and uneventful recovery.

Address of the First Vice-President.—Dr. H. Seymour Houghton said that the close association of Dr. Carr with the members of the Comitia Minora in all the proceedings of its various meetings during the past year enabled them to say that he was in utmost sympathy with the general plan, and fully alive to the grave duties and responsibilities which had arisen from the new order of things, and from the changed relation upon which the society now entered. This change was indeed one upon which they could not but congratulate themselves, not only because it was the final chapter in the medical history of this city, of a period when honest but such bitter differences of opinion so generally prevailed, but because it had put into action the general and praiseworthy desire that the members of their faith in this city should act as a unit, and by this unification come into normal and natural relation, both with the State and the national body. To their retiring President had come the honor and much of the labor connected with this transitional period. To their incoming President would fall the task of interpretation of this new and revised edition of the society's work. It was for the execution of the will of the society that the Comitia Minora existed, and to the purpose of which it would be devoted with redoubled interest during the ensuing year.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held November 20, 1906.

Dr. Warren Coleman in the Chair.

The Pneumococcus and Its Infections.—Dr. Pappenheimer presented some general considerations on the pneumococcus and its infections. He discussed first, the question of the identification of the pneumococcus and its differentiation from closely allied organisms. Of the five main criteria, namely, the presence and structure of the capsule, the specific fermentation of inulin, the character of the growth on blood-agar, the pathogenicity for mice and rabbits, and the agglutination reactions, none were always to be relied upon. It was well known that there was a large group of organisms intermediate between the typical pneumococcus and the typical streptococcus. These intermediate types had been found in a wide variety of lesions, and might be of clinical importance in so far as they might be associated with certain definite clinical types of infection. Discussing the question as to the constant presence of the pneumococcus in the blood during lobar pneumonia, it was concluded, from a review of the literature, that the pneumococcus was demonstrable in the peripheral circulation, in practically every case, provided that fluid media and blood in sufficient quantity were employed. As to the question of the bactericidal action of pneumonia blood, it had been shown that this was due entirely to phagocytosis, and not, as had been supposed, by some, to bactericidal substances in the serum. Pneumococci might be readily grown in both normal and pneumonic serum. The production of acid by pneumococci when grown in pneumonic serum, as observed by Rosenau and Longcope, was of considerable theoretical interest. It was probable, in the first place, that this production exerted a deleterious influence upon the viability and also upon the virulence of the pneumococci during the course of a lobar pneumonia. Since virulent strains in test-tube experiments were known to resist phagocytosis, it was highly probable that such an attenuation of virulence must occur towards the end of the disease. Moreover, the marked and sudden increase in opsonic substances in the serum which was observed coincidently with the crisis, would be quite without significance did we not suppose that the pneumococci, having lost their original virulence, had been rendered susceptible to phagocytosis. Acid production by the pneumococci growing in pneumonic serum was of interest also from another point of view. Opie, working with sterile inflammatory exudate, produced by the injection of aleuronat into the pleural cavity of dogs, had shown that suspensions of washed leucocytes, when incubated for several days under toluol, underwent marked proteolysis, the proteolytic ferments being contained within the leucocytes. This autolysis of washed leucocytes *in vitro* took place with equal readiness in a slightly acid or alkaline media. When, however, serum, either from the exudate itself or from the blood, was added to the suspension of leucocytes, autolysis was distinctly inhibited. This inhibitory influence of the serum Opie ascribed to certain substances which he called antiautolysins. These anti-

bodies upon investigation proved to be efficient in checking self-digestion of the leucocytes only when acting in an alkaline or neutral medium. When the reaction of the serum was brought to an acidity of 0.2 per cent. by the addition of acetic acid, the autolysis of the leucocytes was no longer restrained. The application of these facts toward an explanation of the process of resolution in pneumonia was very tempting, and had suggested to Dr. Pappenheimer the following theory: One had but to suppose that the pneumococci, growing in the lung, acidified the serum in sufficient degree to annul its normal inhibitory influence in checking the autolysis of the leucocytes. As soon as this degree of acidity was reached, the intracellular ferments within the leucocytes exerted their proteolytic powers, and as we might say, the "exudate resolved or digested itself." This explanation of the phenomenon of resolution was, of course, entirely speculative and was offered merely to point out the interesting field for experimental research opened up by Rosenau's observation. Wolf's recent work upon the behavior of the opsonins in lobar pneumonia was reviewed; also his preliminary work on the treatment of lobar pneumonia with heated bacterial cultures after the technique of Wright. The results, so far as they went, appeared to be encouraging, since the crisis occurred in the majority of cases on the third or fourth day, and the total mortality of a small series of cases selected at random was far below the death rate during the same month of cases of lobar pneumonia treated in other ways.

Dr. E. LIBMAN discussed this paper.

Extrapulmonary Pneumococcus Infections.—Dr. JOHN S. THACHER read this paper. He said that during the twenty years since Fraenkel and Welchselbaum showed that this diplococcus was the usual bacterial factor in producing pneumonia, observations had gradually accumulated showing that not only the lungs but all parts of the body were at times attacked by the pneumococcus and often with disastrous results, and therefore it was at last recognized as ranking with the virulent staphylococcus and streptococcus as a pyogenic germ. Its power of invading all parts was enhanced by the readiness with which it entered the circulation. It had been reported as found in the blood in cases of bronchitis, edema, and congestion of the lungs, catarrhal inflammation of the nose and its sinuses, cholecystitis, phlebitis, abscess of the finger, and multiple superficial abscesses. It had been found in the milk and urine in cases of pneumonia. The pneumococcus had appeared as the sole infectious agent present in inflammations of all parts of the body. Dr. Thacher then recited a list of lesions which had been recorded in the medical literature as shown to be due to an infection by the pneumococcus. He condensed the enumeration of experiments and said that the pneumococcus was prone to excite inflammation of the respiratory organs, including the pleura and the upper air passages and the cavities connected with them, of the eye, the meninges, the heart and veins, the peritoneum, the kidneys, and the bones and joints, also abscesses of various parts and general septicemia. The conclusion was fully warranted that though less so than the lung and pleura, still in a high degree the pericardium, endocardium, and meninges furnished favorable soil for the mischievous development of the pneumococcus. The upper air passages and their adnexa, especially the middle ear, were also very frequent sites of pneumococcal inflammation.

Dr. JOSEPH A. KENEFICK said that this subject was most interesting to him as an otologist. Dr. Thacher had referred to the middle ear cavity as a region for the cultivation of the pneumococcus and he wished to call attention to a book on otitis, published in Leipzig last year, in which a report of 100 autopsies on children under two years of age was made and the statistics were of broad application and threw considerable light upon the activity of the pneumococcus in young children. There was a form of otitis, otitis concomitans, which occurred in marasmic children, and the middle ears of these children were filled with cultures of the pneumococcus. Out of 100 autopsies—200 ears examined—there were 121 infected cavities; of these 121 infected cavities 112 had a mixed pneumococcic infection and in 96 the pneumococcus was obtained in pure culture. In reference to the cause of meningitis, 60 per cent. of all cases of lepomeningitis were said to be due to the presence of the pneumococcus. Therefore, in meningitis they had first to deal with a pneumococcus in pure culture; the pure culture could be obtained as well from the fluid of a lumbar puncture.

Dr. FRANCIS P. KINNICUTT asked if the prognosis in otitis was more favorable in a pneumococcic infection than in the streptococcic.

Dr. KENEFICK replied that streptococcic infection of the middle ear was accompanied by a high temperature as in streptococcic infections elsewhere. Whereas in pneumococcic infection the condition could go on with apparently no evidences of destruction of bone, etc., and without any temperature or pain. Yet when the mastoid was uncovered it was found that the destruction of bone was out of proportion to the symptoms presented. Here one met with the most extraordinary destruction of the inner table, the lateral sinus was covered with granulation tissue, and yet little or no sign of the condition was presented. One could not rely upon the temperature.

Observations on Arteriosclerosis.—Dr. H. NEWTON HEINEMANN presented this communication. He said that arteriosclerosis was a disease of exhaustion and not of age, and it was important that we should know how to maintain the circulation. In considering the etiology there were external and internal agents. The disease occurred after 45, but mostly after 50 years of age. The male sex was more subjected to it. Inheritance was a predisposing cause, as well as mental worry and strain. Neurasthenia, gout, and rheumatism should be looked upon as etiological factors. An acute attack of gout or rheumatism might start an attack. Typhoid fever had been clearly established as having an influencing effect. Influenza was one of the most common causes of a breakdown. Scarlet fever, diphtheria, and other exanthemata often furnished the early beginning of cardiac and vascular changes. The effects of autointoxication from toxins could not be overestimated. Alcohol, tea, coffee, and drug habits were influencing factors, depending upon their abuse. Lead poisoning was a common cause. External suppurations inaugurated changes, and head injuries were both predisposing and exciting causes. The mental and physical strain in attaining success also acted as a cause. In considering the pathology he divided the cases as follows: (1) the occupation and senile type, generally of the extremities, with well-marked calcific changes; (2) the syphilitic type, with well-marked lesions usually leading to aneurysm; (3) the renal type; (4) myocarditis, with embolism and death often following; (5) the miscellaneous group with moderate sclerosis in various parts of the body; any set of arteries might be involved. The senile and the working type went together. He spoke of an instance occurring recently in Germany in which a man was operated upon; his femoral artery was as stiff as a pipestem and this was not noted until the operation. In the renal type one found the well-known changes in the urine with the marked hypertrophy of the left ventricle, and often death from cerebral hemorrhage. The syphilitic type was one by itself, and demonstrated the fact that the changes went on in segments. There was also the peculiar narrowing of the vessels, due to thickening of the walls, particularly where branches were given off. The circulation was slowed and the toxins got a chance to work at that site. He spoke of the case of a man thirty-eight years old, who died after symptoms of acute infection lasting only ten days. It was found that he had a periarteritis nodosa syphilitica, and these cases he said should always

be looked upon with suspicion. He showed a chart of gastric arterial sclerosis, this often occurring from autointoxication. There were often indigestion and pains, and these were dependent upon the sclerotic changes taking place in the arteries of the mesentery. He believed that many ulcers of the stomach and duodenum could be explained only by a thrombus in the sclerotic artery. He showed specimens to demonstrate this fact. Arterial sclerosis might begin in the arteries as an acute arteritis locally; after this a general arterial sclerosis might set in. This form was not a continuous lesion, beginning in one part and going from one place to another seriatim, as in syphilitic arterial sclerosis. It jumped to different parts and there was a tendency for it to appear bilaterally. It was not a progressive disease going from one end of the circulation to another. The pathological changes taking place in the arteries were not yet definitely determined, but according to the best opinions the changes took place as follows: In the first place there was a change in the stellate cells and interstitial tissue, these undergoing a fatty degeneration. Connective tissue formed and then a little cicatrix was left; this might be so small as hardly to be seen. This was what occurred in a characteristic arterial sclerosis. Marchand stated that streaks of fat were to be found in the intima in cases of anemia and mild infections, which disappeared entirely upon recovery. Dr. Heinemann believed that that had no special connection with arterial sclerosis. In arterial sclerosis the aorta was most commonly affected, then came the renal vessels, next the cerebral vessels, and then the mesenteric. The diagnosis was based upon the history of an old infection, such as some unusual mental or physical strain, abuse of stimulants, etc. In considering the diagnosis he emphasized the importance of preaching the doctrine of hope. With regard to treatment, during the past four or five years in scientific Germany he had heard distinguished gentlemen speak of iodide of potassium as though they had discovered its use. Dr. Alonzo Clark preached this twenty-five years ago and Trousseau fifty years ago. Iodide of sodium did not take the place of iodide of potassium. The Germans seemed to have an antipathy to nitroglycerin in arterial sclerosis, but he continued its use. In speaking of the bath treatment he said that there was no doubt that many men came to Nauheim condemned to death, and yet they might live for years and in comfort. He emphasized the importance of taking autointoxication into account in the treatment of arterial sclerosis; when a patient went to pieces with arterial sclerosis it was from the autointoxication, and it became very dangerous when the patient was permitted to become constipated.

Dr. George L. Peabody, speaking of the youthful cases, said he had notes of two patients, aged nineteen and twenty-one respectively, whom he had followed to the death and autopsy. In both the arteries were extensively diseased, and both died from cerebral hemorrhage. In his experience most cases of periarteritis he regarded as syphilitic. It was interesting how frequently a marked general arteriosclerosis was accompanied by changes in the vessels at the base of the brain. In the treatment of arterial sclerosis there was too much of a tendency to pay attention immediately to the arterial tension; for instance, arterial sclerosis was compensatory in nephritis; the hypertrophy of the left ventricle was compensatory in the development of a nephritis, and he believed it was a mistake in every case of increased arterial tension always to lower it. If there were no symptoms, and the patient was excreting a reasonable amount of urine of good specific gravity, the patient should be watched, but the tension should not be lowered below the normal, as was so frequently done. A great deal of harm could be done by the indiscriminate lowering of the arterial tension in cases of arteriosclerosis with nephritis. In speaking of arterial spasm, he referred to the case of a patient suffering repeatedly from attacks of partial hemiplegia, occasionally the hemiplegia being complete, but without loss of consciousness. The patient would recover and be up and about in an hour from the onset of the attack. He followed this patient to his death. In his last attack he lost consciousness and had all the symptoms of a cerebral hemorrhage. Autopsy was immediately performed, and in less than one hour after death he had the brain, and found the most extensive arterial sclerosis of the arteries at the base of the brain, without any change whatever in the brain tissue. In this case there was a spasmodic contraction of the arteries which shut off the supply to limited areas of the brain, especially in the middle cerebral artery. In the last seizure the contraction had been so long as to be incompatible with life, and yet not long enough to produce any softening. This spasmodic contraction had been shown by the retinoscope time and again.

Dr. Francis P. Kinnicutt said that Dr. Heinemann had only indirectly referred to a potent cause of arteriosclerosis, viz., arterial hypertension. A justifiable difference of opinion exists in regard to the pathogenesis of arterial hypertension. The respective theories of an obliterating endarteritis of the small arteries and of vasomotor constriction of toxic origin, had each their adherents. A general consensus of opinion, however, prevailed in regard to the ultimate influence of chronic arterial hypertension, if the term may be used in this connection, in causing pathological changes both in the heart muscle and in the vessels. In this connection Dr. Kinnicutt called attention to the importance of not mistaking apparent for real hypertension. By apparent hypertension is meant a high systolic pressure with a subnormal or normal diastolic pressure, which would give a normal or a slightly increased mean pressure. Referring to Dr. Heinemann's remarks about the sphygmograph, the speaker said that after a period of some confusion in regard to the knowledge to be obtained from it, of late the knowledge seemed to him to be of a distinctly more definite character. One could not fail to be impressed with the work of Mackenzie of Burnley in this field. At the meeting of the British Medical Association at Toronto he emphasized the possibility of differentiating the various forms of cardiac disability associated with arterial hypertension. By sphygmograms one might differentiate apparently the heart failure due to failure of the function of tonicity, of which dilatation was a manifestation. Again it might be possible to recognize by the kind of arhythmia a disturbance of function in the auricular ventricular connecting muscle bundle of His, and finally, in the true pulsus alternans, failure in the function of cardiac contractility might be recognized. All these forms of cardiac disability might be and usually were associated with arterial hypertension, but should be referred to a disturbance of different functions of the heart muscle.

Dr. L. F. Bishop said that the lesson to be learned was that the bad arteries that behaved well were not so bad for the patient as the better arteries which behaved badly. Diseased arteries might behave so well that the patient could get along and fill out a fair measure of life; under careful therapeutic measures; even with high arterial tension and bad arteries, the patient might live fairly comfortably and have a happy existence, even doing a certain amount of work. He did not agree with the statement that iodide of sodium was not so useful as iodide of potassium; in cases of high arterial tension it seemed to him that it did better and the clinical results were more satisfactory.

Dr. H. P. Loomis thought that all used nitroglycerin, but personally he had few results from it, although he still used it. Iodide of potassium he considered better than iodide of sodium; the latter preparation was unstable and most unreliable. During the acute stages of arterial sclerosis improvement would be very rapid if the patients were confined to an exclusive milk diet, especially peptonized milk.

Dr. John J. Morrissey said that one of the interesting

manifestations of arterial sclerosis, from a life insurance standpoint, was found in the development of an interstitial nephritis. The mortality rate was very much higher, he believed, in America than abroad, and this was probably due to the strain and competition of American life. This was one of the greatest problems for their consideration in life insurance work, namely, the diagnosis of chronic interstitial nephritis; it was not easy to make such a diagnosis when the examiner saw the individual only once or twice. He said that practitioners should try to instill a feeling of hope in those afflicted with cardiac affections. Unless there was undoubted myocardial degeneration of the heart they should hold out hope to these patients, and while they could not entirely regain their strength, they might live for years. He asked Dr. Heinemann if he had ever found the colon bacillus a causative factor in the production of arterial sclerosis. Sir James Barr of London found many cases of arterial sclerosis dependent upon the colon bacillus, not as the sole factor, but as an associated factor in the development of the disease.

Dr. Heinemann, closing the discussion, showed specimens of arterial sclerosis and atheroma to show they were not different things. One was taken from a patient with syphilitic arterial sclerosis, thirty-eight years old; the other was removed from an old man of eighty-six years who had senile sclerosis, but with no calcific plates. In the man of thirty-eight death was from syphilitic arterial sclerosis, the thickening not being very great; the blotch shown was fatty degeneration or atheroma. It was interesting to note atheroma in a syphilitic artery in a man of thirty-eight; in the other there was atheroma in a senile artery in a man of eighty-six, with no calcific plates. There was no doubt of the influence of hypertension in the production of arterial sclerosis. His paper referred to cases of spasm; he had seen cases of angina which were caused by pure spasm. He recalled a woman, aged fifty years, who had "flushes"; they were simply attacks of angina. He also had seen anginal spasm of the hands, of the larynx (almost causing death from edema of the glottis) and other parts of the body in connection with arterial sclerosis. Among the local symptoms produced by arterial sclerosis was the intermittent limping that Erb and Charcot described. In answer to the question as to the colon bacillus being a factor in the etiology, he said it certainly had an influence. But one should not forget that there were many things that were factors. He agreed with Dr. Loomis in what he said about nitroglycerin in so far as the ultimate results were concerned. He warned against the use of beef tea, beef extracts, and the like. Most of these were colored by caramel, which sometimes produced autointoxication in the presence of sclerotic arteries. The beef tea was also a stimulant and did harm. Milk was a toxic agent in many cases when taken in the ordinary way. White meats [illegible] Vegetables, especially the green ones were useful. Potatoes might be allowed in small quantities. Rice might be given *ad libitum*. Bread should always be stale. No sweets should be allowed. There should be restriction of the amount of liquids, particularly at meal time.

Chicago Medical Society.

At a meeting held November 7, 1906, Dr. William Allen Pusey read a paper entitled "The Prevalence of Leprosy in North America and the Policy to be Pursued with Regard to It." He said there was a focus of leprosy in Tracadie, New Brunswick, a few cases among Norwegian and Icelandic settlers in the Central Northwest, and sporadic cases were found among immigrants on rare occasions in any part of the United States. The important foci of leprosy in the United States were on the Pacific coast, where it was introduced by the Chinese, in Louisiana, and in Key West. In both of the latter districts it was introduced from Spanish-America. A few cases originating in the United States outside of subtropical districts had been recorded. The only focus of leprosy which seemed to be of importance as regarded danger of spread of the disease was that in Louisiana. There the favorable influence which was afforded by climate made the development of leprosy not an uncommon occurrence. Leaving out of consideration Louisiana, and taking all facts into consideration, it might be assumed that there was practically no danger from the presence of a sporadic leper in any part of the United States. In districts like Louisiana, where leprosy was active, every effort should be made to segregate the leper as completely as possible; to that end public asylums of refuge for them should be provided, as had been done in Louisiana. These should be made as agreeable places of residence for the sufferers as possible, if for no other reason, in order that lepers might willingly accept these asylums. This did not demand a very high standard of comfort, for the outside world was not a very cheerful place of residence for a leper in an advanced stage of the disease. Such treatment as was accorded lepers commonly was a reflection on common intelligence, to say nothing of humanity. If, for example, the reports which he had seen describing the lazaretto, or, rather, prison for lepers in San Francisco, were true, the place was a disgrace to California. We were all familiar with the wretched exhibition of fear shown in the recent case of the Servian leper, who was shunted about and left to die uncared for when he might with perfect safety have been taken care of upon any almshouse farm. Whether anything more should be done than to provide a place of asylum for lepers depended upon the district. In Louisiana it was, he believed, highly desirable to segregate the lepers. In Minnesota, where the population was vigorous, living condition good, and the climate favorable, nothing more was necessary than to keep patients under reasonable surveillance and see that they did not live in squalor and dirt in close contact with other persons. But even in such a district public help should be extended to the victims as fully as possible, and a place of refuge furnished them when they would accept it. What should be done with the sporadic leper, who occasionally appeared in any of the nonleprous districts of the United States? He should be treated like any other patient suffering from an infectious disease of very slow course, and of the lowest degree of contagiousness. There was no reason why he should not be admitted into a general hospital or be treated outside, provided the same precautions were taken that should be carried out with tuberculosis. Dr. E. A. Fischkin reported a case of leprosy. The patient, a fruit peddler by occupation, was a native of Russia. He came from the Baltic provinces, near Riga, from a district where leprosy was endemic. He was twenty-six years of age and was twelve years in the United States, having lived in Chicago all this time. His illness dated from April, 1905, up to which time he was healthy and never had any skin diseases. If his statements were to be believed, he must show an incubation period of at least eleven years, a period not extraordinary in leprosy. The family history showed no hereditary taint in the patient. His father died at the age of fifty-five from some acute disease which had lasted only three weeks. His mother was now sixty-one years old and was healthy. Three brothers and one sister were in good health. When a boy he attended the public schools of his native town. On questioning, he admitted having had some itching eruption on arms and legs at the age of fourteen, just before coming to America. It had lasted some three or four months, and while on the boat it had entirely disappeared, and he was perfectly well up to a year ago. Examination of the internal organs at the present time did not reveal any abnormal conditions. The patient, when first seen by Dr. Fischkin, looked very anemic; his pulse was weak; but there were no abnormal conditions of the heart; no murmurs. Spleen and liver were not enlarged; no adenopathy. A blood examination

showed hemoglobin, 95 per cent.; 5,200,000 reds to 10,000 whites. A differential count showed normal conditions. There were no plaques or ulcerations in the mouth, and the patient did not show any visible signs of rhinitis, and apparently no excessive salivary secretion. The eruption was mainly tubercular in character, and covered most of the unexposed parts of his body. The face was almost free of leprous manifestations. He could pass and was passing in the crowd unnoticed; but if you paid closer attention you discovered characteristic signs of leprosy. There was a circumscribed infiltrated area about 1 or 2 cm. on his forehead, thickened, overhanging eyebrows, which gave to the countenance a peculiar morose appearance, and was in this case a suggestion of what was termed the leonine face. The regions most affected were the extremities, the extensor surfaces of the arms, and the outside of the thighs. The arms were dotted with tubercles the size of a lentil to half a cherry. Most of them were rounded, of soft consistence, and a dark brown, coppery brown color. The larger ones were covered with slightly exfoliating thin scales. A few of the largest were deeply furrowed and looked almost lobulated. The smaller ones were flat, looked almost like syphilitic papules, but less hemispherical, very smooth and shiny on the surface, and showed a deep varnished or glazed color, as if they were covered with oil. The lower extremities were affected in like manner, though the lesions were localized more on the upper than on the lower leg. On the upper parts of the legs there were streaks of gyrated bands of infiltration running over the iliac crests to the back. The nates were covered with groups of characteristic tubercles. Above them in the lumbar region were large circinate infiltrations connected by somewhat irregular gyrate streaks and running out over the iliac crests to the anterior parts. The abdomen was for a long time free from manifestations, showing only a group of small tubercles near the umbilicus; but toward the end of the patient's stay under treatment there appeared suddenly a number of large, brown, somewhat raised, diffused areas of erythema leprosum or leprous roseola, which looked somewhat like a syphilitic roseola, the spots only being much larger, two or three inches in diameter, more mahogany brown in color, and infiltrated. Microscopical examination of an excised nodule showed large numbers of "lepra cells" and lepra bacilli.

Philadelphia Pediatric Society.

At a stated meeting held November 13 Dr. Eleanor C. Jones exhibited "A Case of Congenital Heart Disease." The patient was a boy, five years old, with clubbing of the extremities of toes and fingers and a systolic murmur at the pulmonary area, and another at the apex. The condition was supposed to be one of pulmonary obstruction and perforate ventricular septum. Dr. Jones exhibited also "A Case of Gonococcus Infection of the Mouth." The patient was a child, three years old, with gonorrheal vaginitis and urethritis, complicated by ulcerative stomatitis, resulting in destruction of a portion of the alveolar margin of the upper jaw and the loss of the central incisor teeth. There was no history of syphilis, and gonococci were found in the vaginal and urethral discharge, and also in that from the lesion in the mouth. Drs. H. Lowenberg and G. E. Pfahler exhibited "A Case of Cretinism," and also "A Case of a Cretinoid Condition," illustrated by *x*-ray pictures. The one patient was a girl of infantile appearance, nine years old, presenting other typical features of cretinism, in whom marked improvement, especially in the mental symptoms, took place after administration of thyroid extract. The second patient was a girl, ten years old, who presented a cretinoid appearance, somewhat suggestive also of Mongolian idiocy. The stature was diminutive and the eyes were somewhat almond-shaped. The mental condition, however, appeared excellent. Thyroid extract was administered in this case also, but without result. The *x*-ray pictures showed in both cases great retardation in the process of ossification, especially in the epiphyseal cartilages and the carpal bones, in less marked degree, however, in the case of the second child, presenting merely a cretinoid appearance. These findings are in striking contrast with those observed in cases of rickets, and also of syphilis, in both of which conditions the bones exhibit premature ossification. Dr. C. H. Weber reported "Two Cases in which the Edebohls Operation was Performed in Children," and he exhibited one of the patients. Both of the children had presented pronounced symptoms of nephritis not yielding to usual therapeutic measures. The improvement was marked, and in at least one of the cases it was thought the operation saved the life of the child. Dr. McCombs exhibited "A Case of Vincent's Angina." The patient was a girl, eight years old, who presented a sort of yellowish patch on one tonsil suggestive of diphtheric membrane, and removal of which left a bleeding surface, and eventually an ulcer. Bacteriological examination of scrapings from the tonsil disclosed the presence of the specific spirillum and the accompanying fusiform bacillus. Dr. M. Howard Fussell read a paper entitled "Artificial Feeding of Infants in General Practice." He pointed out the dangers, especially scurvy and rickets, residing in the use of artificial foods, and he described a plan for overcoming the difficulties in the way of prescribing scientific milk mixtures. This latter consists in having constantly with one tables indicating in percentages, and also in quantities, the proportions of proteids, fats, and carbohydrates, and of milk, cream, sugar, and diluents respectively, indicated at different times in infantile life and the total amounts and frequency of administration. Dr. Theodore Le Boutillier reported "A Case of Hysteroepilepsy." The patient was a girl, fifteen years old, who, following a fall from a moderate height, developed convulsive seizures recurring periodically. Recovery resulted under a course of treatment comprising a full measure of rest, a generous supply of appropriate food, and light outdoor exercise. Drs. D. J. Milton Miller and C. Y. White exhibited specimens from "A Case of Congenital Hydronephrosis, Dilated Ureters, and Hypertrophied Bladder in a Child Six Weeks Old."

Pathological Society of Philadelphia

At a stated meeting held November 22 Dr. P. B. Bland exhibited "A Uterus Containing a Large Chorioepithelioma with Metastases in Kidney and Spleen." The patient came under observation on account of uterine hemorrhage, and on examination a new growth was discovered involving the cervix. This was removed through the vagina and presented the histological appearances of a round-cell sarcoma. Some two months later there was recurrence of the bleeding, and the patient noticed the presence of an abdominal tumor. This was removed and proved to be a chorioepithelioma of the uterus. Following the operation the patient bled profusely and continuously from mouth and rectum for several days, dying practically exsanguinated. Dr. Alfred Gordon exhibited "Two Specimens of Cerebral Hemorrhage." One occurred in a man who had suffered a right hemiplegia earlier in life, from which he had almost fully recovered. In the final attack the patient presented a condition of euphoria, a state of mental contentment and satisfaction. After death an extravasation of blood was found in the left prefrontal region. The second specimen was obtained from a woman who died suddenly. Post-mortem examination disclosed hemorrhage into the lateral ventricle. Dr. F. H. Klaer presented a communication entitled "Blood-cultures in Typhoid Fever by Conradi's Method." Ten cases were studied with positive results in five; in the remainder the observations were made after the twenty-fifth day.

Surgical Suggestions.

Skin Grafting.—Cannaday cuts and transfers his skin grafts dry without the use of any saline solution. He then covers the grafted site with thin dental rubber dam, one piece if the area is small, or with strips crisscrossed for drainage if the area is large. Place a small gauze pad over this, securely anchor it from all sides with narrow strips of zinc oxide adhesive plaster to prevent displacement of the grafts, and apply externally a cotton, gauze, and bandage dressing. In many cases it will be well to encase the part with plaster-of-Paris to secure immobility. A slight amount of pressure will keep the grafts in apposition with the part, will prevent serum from collecting between graft and wound and separating them, and will control bleeding; on the other hand, too much pressure will destroy every vestige of life in the grafts. The plain dry dressing as described above possesses the advantages of simplicity and neatness, renders the after-care less complicated, and can easily be removed when adherent by aid of the free use of peroxide of hydrogen and sterile water without disturbing the underlying epithelium in the least.

The Operative Sterilization of Women.—Friedemann suggests the following as being simpler than most of the methods proposed. The tube is crushed with some instrument of the type of the enterothriptor of Mikulicz and the resulting groove is ligated with catgut. The extreme compression totally destroys the mucous membrane, but the submucosa persists. Experience obtained in intestinal surgery shows that under these conditions a restoration of the mucous tube is entirely out of the question, as the seat of the trauma becomes converted into a solid scar of connective tissue.—*Zentralblatt für Gynäkologie.*

Painless Labor.—E. Lamphear describes his method as follows: When labor has progressed to the stage when the os uteri is well dilated and the pains are becoming distressingly severe a hypodermic injection of one-quarter of a grain of morphine and one-hundredth of a grain of hydrobromate of hyoscine may be given; in one hour the forceps may be applied and labor completed without any pain whatsoever, even though the perineum be lacerated and sewed up. There need be no hurry—the perfect analgesia will last for hours. If the patient is not asleep at the expiration of the hour after injection a few drops of chloroform may be given by inhalation—a dram at most usually putting the patient into a profound sleep of some hours' duration. There will be none of the nausea of prolonged ether or chloroform narcosis, no increased danger of postpartum hemorrhage (as after chloroform), and no necessity for a skilled assistant to give the anesthetic.—*Medical Recorder.*

Shock.—Beddard says that alcohol and ether used to be given in the treatment of shock in the belief that they were cardiac stimulants. It is now known that they are not, and, furthermore, a cardiac stimulant could be of no real value in the treatment of shock, because no increase in the heart's action can counteract the fall in arterial-blood pressure caused by loss of the peripheral resistance. We may, therefore, conclude that alcohol and ether are useless, and it is probably true that they are therapeutically harmless in the doses usually administered The pathology of shock makes it clear that the only useful drug would be one which raised the blood pressure by increasing the peripheral resistance, not through the vasomotor center, but by acting direct upon the peripheral arterioles; and in adrenalin we possess such a drug. Adrenalin given by the mouth to patients other than those suffering from Addison's disease has practically no effect upon blood pressure because it is not absorbed from the alimentary canal. In shock adrenalin must be given either subcutaneously or intravenously. Adrenalin given subcutaneously in therapeutic doses produces a temporary glycosuria, but is otherwise harmless. A safe dose for an adult is from 20 to 30m of a 1 in 1,000 solution. Its effect upon the blood pressure comes on within a very few minutes and has gone in about an hour, therefore the injection has to be repeated about every hour until the shock has passed off. Given intravenously, the effect of adrenalin is instantaneous and it does not last more than ten minutes. It is, therefore, necessary to infuse continuously a weak solution, such as 1 in 20,000.—*Clinical Journal.*

Purulent Nasal Discharge.—Mackie says that the essential cause of suppuration is defective drainage, and in childhood this is usually the result of the presence of adenoids and lymphoid hyperplasia. Later it is the result of hyperthrophies and deformities, resulting from lymphoid hyperplasias during the period of active growth and development. In chronic cases in adults a diseased ethmoid is often at the bottom of the condition.—*Journal of Laryngology.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.*

ILLINOIS STATE BOARD OF HEALTH.

October 17-19, 1906.

ANATOMY.

1. Name the three principal forms or varieties of fibrous connective tissue.
2. Of what layers does the blastodermic membrane consist?
3. Name the membranes investing the fetus. From what is each of them developed?
4. With what bones does the astragalus articulate?
5. From where are the cerebral arteries derived and what remarkable anastomosis is formed by these arteries?
6. What is the use of the right ventricle of the heart? What is the use of the left one?
7. What is the origin, insertion, action, and nerve supply of the rectus femoris muscle?
8. What ligaments connect the os innominatum and the femur?
9. What is the general nerve supply of all the viscera in the abdominal cavity?
10. What main branches are given off by the external iliac artery?

PHYSIOLOGY.

1. Describe circulation of lymph.
2. What ferments are found in the intestinal juice and give their action.
3. Name the bile salts. Name the bile pigments.
4. Name salivary glands and their ducts.
5. Give the blood supply of the stomach.
6. Give composition of blood and amount found in the body.
7. Describe the pancreas and name its secretions.

MATERIA MEDICA AND THERAPEUTICS.

1. Name four cardiac depressants and explain mode of action and therapeutic uses of one of them.
2. Name two vasodilators and give therapeutic indications.
3. Name one drug which dilates and one which contracts the pupil, mode of action and uses of each.
4. Give derivation, physiological action, dose and therapeutic uses of pilocarpin.
5. Physiological action and therapeutic uses of quinine.
6. Name one urinary antiseptic, give dose and therapeutic uses and indication.
7. Name one immunizing serum, dose, mode of administration and indication for use.
8. In case of general venous engorgement, what drugs would you employ and why?
9. Give action of absorbable metal upon the circulation; name one and explain its therapeutic uses.
10. Name three diuretics. Explain mode of action and give uses of one of them.

CHEMISTRY.

1. Complete this formula: $FeS+H_2SO_4=$
2. Complete this formula, give name of compounds and resultant compound: $Mno_2+H_2SO_4+2HCl=MnSO_4+$
3. Why do urates form deposits in joints and cartilages?
4. Of what elements are albuminoids principally composed?
5. What is the normal amount of urine in twenty-four hours? State the average specific gravity of normal urine and its variations under various conditions.

PATHOLOGY.

1. What are the pathological changes met with in enterocolitis?
2. Give the pathology of cirrhosis of the liver.

*It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any textbook on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the student with the general character of these examinations and to inspire him with confidence in the result of his trial.

3. Give the pathology of chronic gastritis.
4. Describe the structural changes that occur in tubercular joints.
5. What pathological conditions give rise to aphonia?

BACTERIOLOGY.

1. Describe fully the Klebs-Loeffler bacillus, giving its characteristics and methods of staining.
2. Describe the microorganism commonly present in characteristic lobar pneumonia.
3. Describe the gonococcus of Neisser, also give the media upon which it grows.
4. Give fully the procedure adopted in carrying out the Widal test.
5. What bacteria are associated with inflammation and suppuration?

ETIOLOGY AND HYGIENE.

1. Name three diseases caused by specific microorganisms, and name the microorganisms causing such.
2. What is the etiology of eclampsia?
3. Describe the principal methods by which tuberculosis is spread.
4. How do you manage a case of scarlet fever in order to prevent the spread of the disease?
5. How do we determine whether a certain organism is or is not pathogenic?

PRACTICE OF MEDICINE.

1. Diagnosis and medical treatment of ulcer of stomach.
2. Give the etiology, symptoms, signs, prognosis, and treatment of cirrhosis of the liver.
3. Give the etiology, symptoms, signs, dangers, and treatment of general arteriosclerosis.
4. Give the etiology, symptoms, signs, dangers, and treatment of thrombophlebitis of femoral vein.
5. Give the etiology, symptoms, prognosis, and treatment of bronchial asthma.
6. Give the diagnosis, dangers, and treatment of nasal diphtheria.
7. Give danger and treatment of pulmonary hemorrhage from lungs as complication of pulmonary tuberculosis.
8. Give etiology, symptoms, complications, and treatment of acute articular rheumatism.
9. Diagnosis and treatment of diabetes.
10. Give diagnosis and treatment of myxedema.

NEUROLOGY.

1. Give the diagnosis of paralysis agitans.
2. Give the diagnosis and treatment of neurasthenia.
3. Give the diagnosis of epilepsy.

SURGERY.

1. What is a carbuncle? Where is it usually situated? Give treatment.
2. What are the indications for amputation in gangrene of an extremity?
3. What are the cardinal symptoms of luxation or dislocation? What complications may attend dislocations and how is each met?
4. Give the etiology, usual termination, and treatment of local periostitis.
5. What conditions may give rise to continued symptoms after complete reduction of hernia?
6. Outline two methods of operative treatment for internal hemorrhoids.
7. Give etiology, symptoms, and treatment for epididymitis.
8. Describe the preparation of a patient for abdominal section from two days before to the time of incision.
9. Give the etiology, symptoms, and treatment of hydrocele of the tunica vaginalis testis.
10. Describe an operation for the treatment of tuberculous cervical adenitis.

OBSTETRICS.

1. Define the terms uterine souffle, funic souffle, fetal shock. Tell the cause of each.
2. Discuss the use of douches, or antiseptic douches, during pregnancy, giving their advantages and disadvantages and their indications and contraindications.
3. Describe the management of second stage of normal labor.
4. Give the symptoms, prognosis, and treatment of eclampsia.
5. Give the diagnosis of ectopic pregnancy.
6. Give the causes and treatment of inertia uteri or delayed labor.
7. What is the management of delay in labor due to impaction of the presenting breech?
8. Name at least three diseases in the fetus causing increase in size which may delay or interfere with labor.
9. Name the varieties of placenta previa. What is the treatment of placenta previa after the fetus is viable?
10. Give the etiology and treatment of post partum hemorrhage.

GYNECOLOGY.

1. Differentiate between a partial inversion of the uterus and a polypus of the uterus.
2. Give the etiology, symptoms, and treatment of a vesicovaginal fistula.
3. Give the etiology, symptoms, and treatment of pelvic peritonitis.
4. Give the nonsurgical treatment for inflammation of the uterine appendages.
5. What dangers may arise when an ovarian tumor is complicated by a pregnancy? Give treatment.
6. Discuss the systemic, topical, and surgical treatment of chronic endometritis.

LARYNGOLOGY AND RHINOLOGY.

1. Give the characteristic lesions in tubercular laryngitis.
2. Give pathology of acute rhinitis.

MEDICAL JURISPRUDENCE.

1. Differentiate between melancholia and mania.
2. Define and illustrate delusion, illusion, and hallucination.

PHYSICAL DIAGNOSIS.

1. Give differential diagnosis between lobar pneumonia and pleurisy with effusion.
2. What is hydronephrosis? Give cause.
3. What valvular lesion would be indicated by murmur loudest at apex and during systole of heart?
4. Give diagnostic symptoms of hydrothorax and pyothorax, differentiating the two conditions.
5. Give definition of ascites. Under what conditions does it occur?

OPHTHALMOLOGY AND OTOLOGY.

1. Give the etiology and treatment of plastic iritis.
2. What is the diagnostic value of the tuning fork in otology?
3. Name ten frequent causes of deafness.

PEDIATRICS.

1. How do the symptoms of malarial infection in young children differ from the same in adults and older children, and at what age are these symptoms found to differ?
2. What in your opinion is the chief danger that may occur either as a complication or a sequel to: (a) scarlet fever, (b) measles, (c) rheumatism, (d) whooping-cough?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

ILLINOIS STATE BOARD OF HEALTH.

October 17-19, 1906.

ANATOMY.

3. The membranes investing the fetus are: (1) the amnion, derived from the ectoderm and mesoderm; (2) the chorion, derived from the ectoderm and mesoderm, and (3) a thin layer of the placenta, derived from the maternal uterine mucosa.

PHYSIOLOGY.

1. The lymphatic circulation is, strictly speaking, not a circulation at all; since the lymph flows only in one direction, namely, toward the heart. The lymph capillaries take up any excess of the blood plasma which is not required for the nutrition of the tissues. These capillaries consist of a single layer of epithelium, and empty themselves into vessels very like the veins. The lymph vessels are well provided with valves, which are so closely approximated as to give the vessels a beaded appearance. All the lymphatic vessels, except those of the right upper half of the body, empty into the thoracic duct, which terminates in the left subclavian vein, where the left internal jugular vein also enters. Those from the right upper half of the body discharge into the right lymphatic duct, which, in turn, empties into the right subclavian vein at its junction with the right internal jugular vein.

3. The bile salts are sodium glycocholate and sodium taurocholate. The bile pigments are bilirubin, biliverdin, and urobilin; in gallstones there may be found, in addition, bilifuscin, biliprasin, bilihumin, and bilicyanin.

7. The secretions of the pancreas are the pancreatic juice and an internal secretion.

MATERIA MEDICA AND THERAPEUTICS.

9. Mercury is an absorbable metal. Its action on the circulation: In small doses it has a tonic effect; in larger doses it diminishes the number of red-blood cells, impoverishes the blood, and thus upsets the digestion, and disturbs the general nutrition of the body.

CHEMISTRY.

1. $FeS + H_2SO_4 = H_2S + FeSO_4$
2. $MnO_2 + H_2SO_4 + 2HCl = MnSO_4 + 2H_2O + Cl_2$

The names of the compounds are, in order: manganese dioxide, sulphuric acid, hydrochloric acid, manganese sulphate, hydrogen monoxide (or water), and chlorine (which is an element and not a compound).

3. The reasons assigned are: On account of the diminished alkalinity of the blood and tissue fluids of those parts, and the comparative slowness of the circulation in those parts, which, when the blood contains an excess of uric acid, causes a necrosis of the cells, and hence weakens their powers of resistance and lowers their vitality.

4. Albuminoids are composed of carbon, hydrogen, oxygen, nitrogen, and sulphur.

5. The normal amount of urine passed in twenty-four hours is about fifty ounces. The average specific gravity is about 1.015 to 1.025; it may vary from about 1.003 to about 1.040.

PATHOLOGY.

1. There are two important forms of cirrhosis of the liver, hypertrophic and atrophic. The following table (from Thayer's "Pathology") will assist in distinguishing them:

Synonyms. Charcot's, Hypertrophic, Unilobular, Hepatogenous, Biliary.	Laennec's, Atrophic, Multilobular, Hematogenous, Hob-nail liver.
Jaundice. Early and marked, bile often absent from feces.	Late and slight, bile usually present.
Ascites. Late and unimportant.	May be early; often enormous.
Spleen. Enlarged early and markedly.	Late and less.
Alimentary hemorrhage, piles. Not common.	Common.
Liver. Large, smooth, mottled, green.	Small, rough, pale or yellow.
New fibrous tissue. In fine lines and strands between acini and cells, involving all parts equally.	In broad bands, making prominent islands in which the single acinus may appear nearly normal; distributed irregularly.

4. The synovial membrane becomes thickened and edematous, and sometimes ulcerates; the joint cavity becomes filled with a serous exudate; the joint and synovial membrane are invaded by the tubercles, and the synovial membrane now becomes shiny, smooth, and nodular. Fringes of the synovial membrane spread over the borders of the articular cartilage, and become adherent to it; the cartilage becomes eroded and destroyed, and pieces of it become detached, leaving the bone denuded. The bone now is attacked by the tuberculous process. There may be adhesions, subluxation, erosion of the socket, or other joint deformity.

5. Aphonia may be caused by: (1) Paralysis of the recurrent laryngeal nerve, which may be central (as in bulbar palsy), or peripheral (due to pressure of an aneurysm or tumor of the mediastinum); (2) injuries and diseases of the larynx, such as inflammations, tumors, foreign bodies, or stenosis; (3) excessive use or misuse of the voice.

BACTERIOLOGY.

5. The bacteria associated with inflammation and suppuration are: staphylococcus pyogenes aureus, staphylococcus pyogenes albus, staphylococcus pyogenes citreus, streptococcus pyogenes; also sometimes the pneumococcus, gonococcus, bacillus coli communis, bacillus pyocyaneus, bacillus typhosus, and bacillus epidermidis albus.

ETIOLOGY AND HYGIENE.

5. To prove the pathogenicity of a microorganism, it is essential: (1) that the microorganism be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal.

SURGERY.

2. In *dry* gangrene, the general rule is to wait for a line of demarcation, and then amputate high up; but in *senile* gangrene, if the patient is exhausted or sepsis ensues, the amputation should be done at once, and high up, without waiting for the line of demarcation. In *moist* gangrene, after the formation of the line of demarcation, amputate high up. In *traumatic* gangrene, if spreading, amputate at once, and high up, without waiting for a line of demarcation.

3. The complications that may attend dislocations are: fracture of the bone, rupture of blood-vessels or nerves, extensive injury to the soft parts, the capsule may be rent, or even torn away from the bone, the head of the bone may be bruised by impact against the edge of the socket, and bony prominences may be torn off.

5. (1) The anesthetic may give rise to vomiting; (2) the effect of the constriction may remain after reduction, and the intestine continue paralyzed; (3) this may be followed by inflammation, ulceration, perforation, peritonitis, toxemia, and death; (4) the presence of another hernia, not reduced; (5) recurrence of the same hernia; (6) reduction *en masse;* (7) reduction into a diverticulum of the abdominal wall.

OBSTETRICS.

1. The *uterine souffle* is a rhythmical, soft, blowing sound, synchronous with the maternal heart-beat. It is due to the passage of blood through the enlarged uterine arteries. The *funic souffle* is a sharp, whistling or blowing sound, synchronous with the fetal heart-beat. It is caused by some interference with the circulation in the umbilical arteries. *Fetal shock* is the discomfort experienced by the pregnant woman, due to the movements of the fetus in the uterus.

8. General dropsy, hydrocephalus, and spina bifida.

GYNECOLOGY.

1. In the case of *polypus,* the body and fundus of the uterus are in their normal position in the abdomen, a sound can be passed into the uterus, the uterine and cervical canals are not obliterated, the polypus does not bleed easily, and is not particularly sensible to pain. The *inverted uterus* shows:—absence of body and fundus from normal position, will not permit passage of a sound into uterine cavity, the uterine and cervical canals are absent, the inverted uterus tends to bleed easily, and is very sensible to pain.

4. As far as possible, remove the causes, correct bad habits (such as constipation, masturbation, excessive coitus), rest in bed, hot vaginal douches, tampons of ichthyol and glycerin or of iodine and glycerin, diet of a nourishing and easily digested kind, plenty of pure water to be drunk, general massage (unless contraindicated), such tonics and other medication as may be indicated by the general condition of the patient, hydrotherapy, and, in chronic cases, mild exercises, abdominal support by a binder, clothing so adjusted as to take pressure away from the abdomen.

5. The chief dangers are: pressure symptoms causing impaired respiration, twisting of the tumor on its pedicle, incarceration of the tumor in the pelvis, death of the fetus, difficult labor, and death of the mother. The treatment is to remove the ovarian tumor as soon as it is diagnosed.

LARYNGOLOGY AND RHINOLOGY.

1. The mucous membrane of the larynx is usually very pale; there may be a few dilated capillaries on one vocal cord; round cell infiltration, with the formation of giant cells, is quite pronounced; considerable edema is present; the epiglottis is swollen on its free margins, and becomes turban shaped; ulceration occurs in any part where infiltration has been found, and appears in several places as small superficial ulcers, which coalesce and form a large irregular ("mouse-nibbled") ulcer; this is apt to be covered with a grayish white exudate in which the tubercle bacilli may be found.

MEDICAL JURISPRUDENCE.

1. In both melancholia and mania there is a general perversion of the mental faculties, but the former is usually accompanied with more or less depression, and the latter with more or less excitement.

2. A *delusion* is a belief in something which has no real existence, but is purely imaginary; and out of which the person cannot be reasoned. An *illusion* is a false or perverted impression, received through one of the senses. An *hallucination* is the same as an illusion, but without any material basis.

If an individual believes himself to be made of glass, and is afraid of being touched lest he be broken, he is suffering from a *delusion.* If the whistling of the wind were mistaken for a voice telling a person to do a certain thing—that would be an *illusion.* If a person fancied he heard a voice

when there was nothing at all to be heard, that would be an *hallucination*.

PHYSICAL DIAGNOSIS.

3. Mitral regurgitation.

4. In *pyothorax* there will be found the general symptoms of sepsis, chills, fever high and irregular but persistent, pallor, the presence of leucocytosis, and on aspiration pus may be obtained. In *hydrothorax* there will be no fever, no pain, and the fluid is nonpurulent.

5. Ascites is an accumulation of serous fluid in the peritoneal cavity. It may occur in cirrhosis of the liver, chronic peritonitis, anemia, nephritis, heart disease, compression of the portal vein, or obstruction of the thoracic duct.

OPHTHALMOLOGY AND OTOLOGY.

3. (1) aural polypi, (2) inflammation of the membrane lining the Eustachian tubes, (3) inflammation of the middle ear, (4) inflammation of the internal ear, (5) disease of the auditory nerve, (6) perforation of the membrana tympani, (7) parotitis, (8) diseases of the throat, blocking up the end of the Eustachian tube, (9) certain drugs, as salicylic acid, quinine, etc., (10) impacted cerumen.

PEDIATRICS.

2. (*a*) otitis media; (*b*) bronchopneumonia; (*c*) endocarditis; (*d*) bronchopneumonia.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	January	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	January	8
Arkansas*	F. T. Murphy, Brinkley	Brinkley	January	7
California	Chas. L. Tisdale, Alameda	San Francisco	Dec.	18
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	January	1
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	12
Delaware	P.W.Tomlinson, Wilmington	Dover	June	18
Dis. of Col'bia	W.C.Woodward, Washington	Washington	January	10
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago	January	—
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. F. Kennedy, Des Moines.	Des Moines.		
Kansas	T. E. Raines, Concordia	Topeka	February	12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Portland	March	5
Maryland	J. McP. Scott, Hagerstown	Baltimore		
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	January	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City		
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	February	4
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks	January	1
Ohio	Geo. H. Matson, Columbus	Columbus		
Oklahoma*	J. W. Baker, Enid	Guthrie	Dec.	26
Oregon*	B. E. Miller, Portland	Portland	January	1
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia Pittsburg,		
Rhode Island	G. T. Swarts, Providence	Providence	January	3
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt. Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.	January	7
Vermont	W. Scott Nay, Underhill	Montpelier.	January	8
Virginia	R. S. Martin, Stuart	Richmond		
Washington*	C. W. Sharples, Seattle	Spokane	January	2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Utah.—At the next session of the Legislature there will be presented a new Medical Practice Act, to replace the one now in force, which dates from 1898 and is unsatisfactory in many respects. The new act is largely based on the laws of other States where the several features have been found satisfactory. Provision will be be made for reciprocity with other States whose requirements are equal to those of Utah.

Oklahoma.—At the September examination there were thirty-three applicants; of this number eleven failed, and twenty-two passed.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending December 8, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	356	162
Diphtheria	276	32
Measles	155	5
Scarlet Fever	149	9
Smallpox	13	—
Varicella	147	—
Typhoid Fever	72	15
Whooping Cough	52	10
Cerebrospinal Meningitis	8	2
Malarial Fever	.....	.....
Totals	1228	235

Ectopia of the Testicle.—Coudray declares that young children should be carefully examined for ectopia of the testicles. In early life external maneuvers for bringing about descent of the testicles if applied with persistence give excellent results up to the age of ten or twelve years. A bandage is a necessary help in the treatment. The external manipulations may succeed even in abdominal ectopia, as the writer has observed in a boy of eleven years. After the age of eleven or twelve years operative interference is generally necessary. The coexistence of a small hernia does not necessarily demand operation by the knife in very young children, but after six or seven years operation on the testicles with radical cure for the hernia is indicated in the majority of cases.—*Le Bulletin Médical*,

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended December 7, 1906.

SMALLPOX—UNITED STATES		CASES	DEATHS
Colorado, Las Animas County	Oct. 1–31	3	2
Georgia, Augusta	Nov. 20–26	8	..
Illinois, Galesburg	Nov. 18–24	17	..
Indiana, South Bend	Nov. 18–24	4	..
Kansas, Seven Counties	Oct. 1–31	23	..
Louisiana, New Orleans	Nov. 18–24	3	..
Shreveport	Nov 18–24	1	..
Missouri, St. Louis	Nov. 18–22	3	..
New York, New York	Nov. 18–24	1	.
North Carolina, Greensboro	Nov. 18–24	5	.
Ohio, Cincinnati	Nov. 24–30	1	.
Virginia, Richmond	Oct. 1–31	1	.
SMALLPOX—FOREIGN.			
Africa, Cape Colony	Oct. 14–22	15	..
Brazil, Rio de Janeiro	Oct. 22–24	5	..
Chile, Coquimbo	Oct. 22–31	28	1
Iquique	Oct. 29–Nov. 4	..	Present
Ecuador, Guayaquil	Oct. 24–31	14	..
France, Paris	Oct. 28–Nov. 17	7	1
Gibraltar	Nov. 12–18	1	.
Greece, Athens	Nov. 9–15	.	2
India, Calcutta	Oct. 21–27	.	3
Madras	Oct. 27–Nov. 2	..	2
Russia, Moscow	Oct. 28–Nov. 3	1	1
Odessa	Nov. 4–10	4	..
Spain, San Feliu de Guixols	Oct. 11–17	..	1
Seville	Oct. 1–31	..	28
Turkey, Beirut	Nov. 6–10	..	..
YELLOW FEVER.			
Brazil, Rio de Janeiro	Oct. 28–Nov. 4	1	1
Ecuador, Guayaquil	Oct. 15–30	..	4
Cuba, Habana	Nov. 28–Dec. 4	5	..
Matanzas Province—			
Jovellanos	Dec. 3	1	..
Union de Reyes	Nov. 26–29	3	1
Santa Clara Province—			
Isabela de Sagua	Nov. 29	1	..
CHOLERA.			
India, Bombay	Nov. 1–6	..	
Calcutta	Oct. 20–28	.	28
Karachi	Oct. 20–26	..	4
Madras	Oct. 27–Nov. 2	..	1
Rangoon	Oct. 21–27		3
Nagapatam	Sept. 22–Oct. 19	..	10
PLAGUE.			
Australia, Cairns	Oct. 21–27	3	..
Sydney	Sept. 25–Oct. 1	1	..
Brazil, Rio de Janeiro	Oct. 28–Nov. 4	34	10
Egypt, Alexandria	Oct. 30–Nov. 3	1	1
Minieh Province	Oct. 30–Nov. 3	..	..
Suez	Oct. 30–Nov. 5	1	1
India, General	Oct. 14–20	7,876	6,216
Calcutta	Oct. 14–20	..	7
Japan, Fukueka	Nov. 3	2	..
Iida	Nov. 3	..	Present
Osaka	Oct. 10–Nov. 6	24	17
Waykama Kan	Oct. 2–Nov. 6	4	3
Straits Settlements	Sept. 4–10	1	..
Turkey, Beirut	Nov. 6–10	1	..

Medical Record

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Original Articles.

SOME NOTES ON THE DIAGNOSIS AND THE RESULT OF SURGICAL TREATMENT OF CEREBELLAR TUMORS.

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NEW YORK.

NEUROLOGIST TO MOUNT SINAI HOSPITAL; CONSULTING ALIENIST AND NEUROLOGIST TO BELLEVUE HOSPITAL, ETC.

THE question of the surgical removal of cerebellar tumors has given rise to considerable discussion. The difficulties of diagnosis are somewhat greater than those commonly met with in the case of other intracranial neoplasms. Not infrequently the diagnosis is made by exclusion, and strictly localizing symptoms are less certain than they are, for instance, in the cases of tumors affecting the motor or occipital areas. The peculiar position and the safe intrenchment of the cerebellum have rendered every attempt at interference more difficult and more hazardous than is the rule with tumors situated in the cerebrum. During the past few years I have seen twenty-two cases, sixteen in hospital,* and six in private practice.

The recent writings of Stewart, the symposium on this subject by Philadelphia physicians, the still later article published by Putnam (*Journal of Nervous and Mental Disease*, May, 1906) would seem to make any further consideration of this subject almost useless. But the more one sees of brain surgery in general, and of cerebellar surgery in particular, the more one becomes convinced that the report of single successes leaves an incorrect impression upon the minds of medical men. The successes are, after all, the exceptions, and if a true account is to be rendered of what can be expected from cerebellar surgery, the entire experiences of one or more men must be detailed without fear and without prejudice. It is necessary to speak of failures just as frankly as of the few cases which succeed tolerably well. Of the twenty-two cases above referred to, operative interference was urged in only seven of them. Among these the tumor was correctly located (as was proved by autopsy), but not found at time of operation, in two cases. The first of these cases was reported with great care in the second volume of the Mount Sinai Hospital Reports (p. 108) by Dr. H. W. Berg, and was also referred to in the report of the surgical service of Dr. Howard Lilienthal (p. 387). The facts of this case, briefly told, are these:

CASE I.—H. H., Russian, 36 years of age. Admitted August 22, 1900. Seven days prior to admission, severe frontal headaches over right eye chiefly; three weeks previously increasing tinnitus in left ear, accompanied by deafness on that side; daily vomiting. Vertigo in walking. Objective symptoms were: Slight dragging of right foot; no other weakness in legs; no ataxia of lower extremities. Both knee-jerks increased, right greater than left; no Kernig sign; no ankle-clonus. No ataxia of upper extremities, but slight weakness of right upper extremity. Face slightly flattened on left side. Ocular movements normal. No deviation of tongue; numbness of left side of face. Left mastoid seemed painful on pressure. Dr. Koller excluded mastoid disease, but found moderate double optic neuritis. Medical treatment was given a conscientious trial; no change in symptoms, except that weakness of legs and cerebellar titubation became more marked. I was asked to examine the patient on September 16, and again on September 28. Symptoms as above; in addition there were present at this time slight lateral nystagmus on extreme lateral movements of the eyes; some vertical nystagmus. Both recti externi deficient. Grasp of both hands weakened, especially of left hand. Diminution of sensibility to touch and pain on left side of face. Slight ataxia in left upper extremity. Slight cerebellar titubation. Knee-jerks active. Diminished power of resistance on firm closure of the left eyelid as compared with the right. Diagnosis, cerebellar neoplasm in left half of cerebellum. Operation was done by Dr. Lilienthal, October 5, 1900, in a most careful manner. "A large Omega scalp and bone flap, its base downward, was made over the left occipital region," the "dura was freely incised, and an excellent exposure of the cerebellum obtained with plenty of room for manipulation. . . . Hemorrhage was insignificant. After several aspirations of the cerebellum (some bloody fluid withdrawn—cyst?) the cerebellum was incised and the finger gently inserted for exploration. Result negative. Patient died about eight hours after operation." A "limited" autopsy (Dr. Mandelbaum) revealed: "in front of the left lobe of the cerebellum, within the dura, a firm, whitish tumor measuring about 4 cm. in all diameters. The tumor lies on the petrous portion of the temporal bone just over the internal auditory meatus. The pons is indented on its left side. The nerves at the base are pressed upon. Gliosarcoma."

No case could have illustrated more convincingly the difficulties encountered in cerebellar cases. I quote from Dr. Lilienthal's self-criticism: "The diagnosis having been well-established . . . . the exploration of the cerebellum should have proceeded until some satisfactory exploration of the symptoms . . . . had been encountered. Had the cerebellar tissue been cut away a little further, the tumor must have been exposed and *might* have been removed." There's the rub! The shock would have been still greater and the fatal issue just as certain. The moral is that, while every step in the entire course of the disease was most carefully considered the result was entirely satisfactory. The second case may be detailed more briefly:

*The full histories of some of the hospital cases will be published in a forthcoming volume of the Mount Sinai Hospital reports. The operations were done either by Dr. Gerster or by Dr. Lilienthal, to both of whom I am indebted for many courtesies.

Case II.—N. K., 17 years. Admitted December 19, 1903. Ill eight weeks with severe occipital headaches and almost daily vomiting, difficulty of speech, and unsteady gait with dizziness. During past four weeks, when headaches are worst, left arm "shakes," but no unconsciousness. During last week before admission both upper extremities felt "dead," the left more than the right. Examination:—Speech heavy, monotonous, scanning; pupils react sluggishly to light and during accommodation; ocular movements normal; "double optic neuritis with hemorrhages" (Gruening); uvula deviates to left; slight right facial paresis; gait, that of an intoxicated person, reeling always toward left side; no ataxia or spasticity; marked ataxic tremor of left upper extremity (psychical exaggeration); reflexes of upper extremities not increased; right plantar, left scrotal, both abdominal reflexes increased; no ankle-clonus; no Babinski. Diagnosis, tumor involving left half of cerebellum chiefly, some symptoms pointing to right side also. Operation was urged for the relief of pressure, with a faint hope that tumor might be reached. Patient was transferred to the care of Dr. Gerster, who operated upon him January 15, 1904. "Horseshoe-shaped incision over left half of occipital bone." Four punctures with needle in various directions, in the hope of striking more resistant mass, revealed nothing; "brain did not pulsate when dura was first exposed; at end of operation slight pulsation was visible. Patient's condition good during operation. About twenty minutes after patient had been returned to the ward, he began to breathe poorly, but pulse remained of good quality. Artificial respiration for fifty minutes stimulating enemata, camphor injections, oxygen, etc., without avail." Patient died evidently of direct respiratory paralysis, pulse remaining "fair" almost to the end.

Autopsy report: "Tumor about size of hen's egg, firm and lobulated, situated in posterior cerebellar notch, more on left side (¾ inches), compressing superior portion of vermis forward and to the right, causing a fold in the upper portion of right hemisphere; the tumor could be shelled out with ease, leaving quite a cavity in cerebellum. Sarcoma."

In this case, again, the localization was tolerably accurate; but even if the surgeon had been encouraged to remove much of the cerebellar tissue, the tumor could scarcely have been reached. The danger from hemorrhage would have been infinitely greater; as it was, the patient died from respiratory paralysis, probably due to secondary hemorrhage.

In one other case the author refused to urge operation; the patient was referred to another hospital, the operation was there attempted without success, and the patient died within a few days after the operation. In four cases a simple trephining operation was done over one or both lobes of the cerebellum; in these patients the operation was followed by marked improvement or, at least, temporary relief. In one instance the patient survived the first operation and succumbed to a second attempt to explore the tumor. In all the other patients in whom the clinical diagnosis of cerebellar tumor could be established beyond the shadow of a doubt, the operation was not urged, either because there seemed to be no possibility of finding the tumor, or because the tumor was supposed to be on the ventral surface, where one could not expect to reach it without incurring the risk of serious hemorrhage, or because the symptoms were too advanced, or were not so pressing that operative interference was imperatively demanded. One patient died suddenly on the day set for operation.

More than a year and a half ago, before the American Neurological Association, the writer reported upon this subject, and the publication of the article was withheld in the hope that further experience might possibly give better results. It is only fair to state that not a single one* of the twenty-two cases upon which these notes are based has been cured. Several have, however, been much relieved by operative interference, and, above all, impending blindness has in several instances been avoided by prompt surgical measures. In view of the alleviation which has been obtained, I shall be the last one to frown upon all surgical endeavors, but I cannot, on the other hand, concede that the removal of tumors of the cerebellum is a task upon which one can enter with a light heart and with any great hope of ultimate success. The results recorded by Horsley, Frazier, and others, will tempt every one of us again and again to advise operation in order to procure equally good results, but I must insist once more that if we are to judge of the matter fairly we must have complete statistics of successes and failures; otherwise we are bound to overrate the one and to underrate the others.

The symptomatology of cerebellar tumors has been so fully discussed by Dr. Mills (*New York and Philadelphia Medical Journal*, February 11 and 18, 1905; *University of Pennsylvania Medical Bulletin*, April and May, 1906) in his contributions to the symposium on this subject, that there would seem to be little to add to his statements. Cerebellar tumors present, first of all, the symptoms common to all intracranial neoplasms, viz., headache, nausea, and vomiting, double optic neuritis. As for the last it is to be noted that the optic neuritis appears almost invariably at an unusually early stage of the disease, that it leads with unusual rapidity, in many instances, to complete amaurosis, and that this physical sign is wanting less often in cerebellar than in other intracranial neoplasms. The intense headaches and the unusually rapid development of optic nerve changes have led me to advise trephining for the relief of pressure at the earliest possible moment in order to prevent complete amaurosis, and it is a satisfaction to know that in several instances blindness has been prevented and the optic neuritis has receded. A simple instance of this was the following case:

Case III.—I. R., 32 years of age, by occupation a tailor, who was admitted to Mount Sinai Hospital January 31, 1904, and discharged May 20, 1904. His illness had been of ten months' duration, and began with attacks of pain in the occipital region. At first he had two or three attacks of pain a day. At the time of admission to the hospital he had many such attacks. Vomiting was frequent, diplopia persisted, accompanied by flashes of light and pain in the eyes. His vision was rapidly diminishing. During the attacks of pain the patient could not speak. There was no motor paralysis and no sensory symptoms. His gait was typically cerebellar, and the patient exhibited a marked tendency to fall to either side; marked double optic neuritis with hemorrhages; distinct right-sided facial paresis; diminished grip in upper extremities with slight ataxia of both upper extremities; wrist reflexes and both knee jerks were increased, but there was no ankle-clonus or Babinski; hearing less on right side than on left; pupils were equal, action to light good, also during accommodation; ocular movements

*I admit that others have been a little more fortunate, though complete cures (not merely surgical cures) are rare indeed. In the discussion of the subject, Weir Mitchell, Starr, and others were inclined to share the writer's views.

were normal. On February 29 the patient had a general convulsion, was very weak, and vomited almost incessantly. March 11 a large bone flap was removed by Dr. Gerster in the occipital region, exposing both halves of the cerebellum. From this operation the patient made a good recovery, the headaches were distinctly lessened, the patient was able to walk better, and his eyesight remained stationary. On March 24 the second stage of the operation was attempted, the cerebellum was exposed, but the tumor could not be found. The dura mater was sewed up, the scalp wound closed, and after this second operation the patient made such excellent progress that he was discharged on May 20. He returned to his work and has been earning his livelihood ever since, his eyesight entirely satisfactory, his gait only a little unsteady, and his general health excellent.

In this case I believe that if the trephining had not been resorted to at an early day, the changes in the optic nerves would have rapidly progressed and blindness would have resulted. Such was the unfortunate result in a young girl who was seen in 1903, then eleven years of age, presenting all the marked symptoms of cerebellar neoplasm. A trephining operation was done to relieve pressure on January 4, 1904, and she had sufficiently improved on January 26 to be discharged from the hospital, but the disease had already advanced to such an extent that the double optic neuritis grew progressively worse, and although the child is still living—fully three years after she was first seen by me—she suffers less from headaches, but is bedridden, and has been absolutely blind for more than two and a half years.

Many of the patients with cerebellar neoplasm may live for years after the first symptoms appear, and in so many of them the optic nerve is threatened from the very outset that it is merciful to them to advise exploratory operation at the very earliest stage of the disease. There is practically no danger attending the cerebellar trephining operation (provided the surgeon will exercise a little care regarding hemorrhage), and the probability of blindness is so great that I would strongly urge that, if the patient present the marked symptoms of cerebellar neoplasm, and if the patient also exhibits the signs of a rapidly advancing optic neuritis, the attempt should be made in every single such instance to prevent the development of blindness by the surgical relief of pressure. In fact, other things being equal, rapidly advancing optic neuritis may serve as a symptom pointing to cerebellar tumor, for I have found this rapidly progressive form of double optic neuritis more regularly in cerebellar neoplasms than in tumors of the frontal lobe, and also more frequently than in cases of tumor in the temporosphenoidal region, or in the motor areas.

The early development of unilateral or bilateral rectus externus palsy is to be given due weight. I have been accustomed to regard it as almost pathognomonic of cerebellar lesions if it be associated with the general symptoms pointing to increased intracranial pressure. No doubt the peculiar position of the abducens nerve, the fact that it may be compressed very readily between the brain-substance and the base of the skull, will account for the frequent occurrence of this special form of palsy. An irregular lateral nystagmus is often observed in these cases on extreme outward movement of the eyes. This I hold to be due to the greater strength of the recti interni in the presence of weakened external recti muscles.

The authors on this subject are not yet agreed as to the importance to be attached to the side to which the patient sways in walking or standing. The evidence from my own cases would seem to be largely in favor of the patient swaying to the side in which the tumor is situated, but I would not allow any evidence of this sort to persuade me to determine the site of operation if other signs point to the opposite side of the brain. In several instances I have obtained much more valuable information as to the location of the neoplasm from the behavior of the facial nerve. Changes in the electrical reaction of the facial nerve often setting in before a marked facial palsy has been developed, have helped to corroborate a suspicion of cerebellar disease, and have pointed at the same time to the exact site of the neoplasm. This has been particularly true of tumors occurring in the cerebellar pontile angle. An instance of this I have reported more than ten years ago in the first edition of my book. The changes in the electrical reaction of the facial nerve may also occur with intracerebellar neoplasms on the side on which the facial nerve is affected. Early involvement of the auditory nerve is of similar value in determining the site of the neoplasm. If the progress of the disease is an unusually slow one, and if facial, auditory, and possibly trigeminal nerve symptoms are present; if, moreover, in such cases the symptoms are unilateral or bilateral, the diagnosis of a neurofibromatosis may be entertained. It is well to remember, however, that other forms of neoplasm (sarcoma in one of my cases) may occur in this very region, and may be of relatively slow growth, and may at times give rise to multiple lesions.

In view of the good results following upon prompt surgical interference in the cases here alluded to, it would be natural to state that much time is wasted by the routine administration of iodides and mercurials. In many cases this kind of treatment is adhered to merely to ease the conscience of the physician that he has given internal medication a fair trial before risking the life of the patient in his surgical endeavors, and yet, if I am to profit by my own experience, I must confess that in several instances much has been gained by this routine practice. Not many years ago Oppenheim reported cases of brain tumor occurring more particularly in younger individuals, who had the good fortune to get rid of all the symptoms at about the time set for the operation. In my own experience, exclusive of the cases here recorded, I have the records of three patients who presented all the symptoms of cerebellar neoplasm, such symptoms persisting for many weeks, and then, whether as the result of treatment or not, the symptoms subsided, and the patient practically regained normal health. In only one of these cases was there a distinct specific history. In the other two, one of them a woman, there was not a single reason to suspect specific infection, nor could there have been a shadow of doubt as to the correctness of the clinical diagnosis. In all three cases I entertained the idea of surgical intervention, and would have urged operation if the symptoms had not subsided within a few weeks from the time that treatment was begun. While I am, on the one hand, most anxious not to delay operation for fear of impending blindness, I am tempted, on the other, to be somewhat more conservative, and to give the patient the benefit of the possibility of spontaneous improvement, or of improvement due to drug treatment. In cases in which the headaches are intense, in which the gait becomes progressively worse and worse, and in which the optic neuritis is steadily increasing, in all such cases I believe it to be the better policy not to await the possibility of improvement without surgical intervention, but to advise

trephining as the first step toward a possible surgical removal of the neoplasm, and it is fortunate that we can nowadays undertake at least this operation without any material risk to the patient's life.

The difficulties of surgical interference are greatly increased because of the mere fact that in rare instances only can one predict with any degree of certainty the exact location of the tumor. In only four of the twenty-two cases upon which the conclusions of this paper are based was I absolutely certain of the cerebellar area affected. As recorded above, in two cases operated upon, the tumor could not be got at during the operation, but at autopsy they were disclosed in the exact position where they had been supposed to be. In another case the tumor was not found, despite the removal of a portion of the lateral lobe of the cerebellum, but the patient was so much benefited by the operation (evidently by the relief of pressure) that he was doing unusually well when last heard of—twenty-six months after the operation. Even tumors in the cerebellar pontile angle, easy to locate, are difficult to reach. Recent reports, more particularly those published by Frazier, have urged the removal of a portion of the cerebellum to get at cerebellar and cerebellar-pontile tumors. Some German writers (notably Borchardt) have been much impressed by this, and have insinuated that the lesser daring of German surgeons is responsible for the meagre results obtained by them in the removal of cerebellar tumors. I believe, however, that I am not the only one among the American neurologists who feels a peculiar aversion to the removal or mutilation of any part or area that is not distinctly diseased, and I for one should hesitate to advise such a procedure unless the symptoms point with absolute certainty to the presence of a neoplasm in a definite region, and unless there is also a tolerable certainty that when the tumor is found it will prove to be of such size and so conditioned that it can be removed. It does not ease one's conscience particularly to have removed a portion of the lateral lobe of the cerebellum, to come down upon the tumor, and then to find that the tumor cannot be enucleated. Moreover, it is well to remember that in cerebellar operations the danger from postoperative hemorrhages is greater than in the operations for the removal of other intracranial neoplasms. No doubt the proximity of the medulla oblongata has much to do with this, and not a few cases of cerebellar neoplasm that have been operated upon have died suddenly two or three hours or several days after the operation from causes "unknown or unsuspected."

I yield to no one in the desire for advance in brain surgery, but there will be little gained by claiming more than the facts warrant. At the present time cerebellar surgery is in a sad plight. Surgical measures will be resorted to in suspected cases, and it is probable that with the accumulating experience of years, provided such experience be recorded in full, we may succeed far better than we have in the past. The chief satisfaction that I have personally felt in my relations to cerebellar surgery has been in the prevention of blindness and the relief of headaches. I would strongly urge exploratory operation, palliative trephining, with this end in view. This has been well demonstrated in several cases in private practice, particularly in a girl now fifteen years of age, who is completely paralyzed as the result of a slowly growing cerebellar tumor. Her eyesight was threatened at the start, and yet has been preserved in consequence, as I firmly believe, of a large exploratory trephining, which was done primarily for the purpose of relieving pressure, and only secondarily in the hope of finding the tumor. Let me refer again to the patient thirty-two years of age, in whom the symptoms of cerebellar tumor were beyond doubt, who was operated upon twice, and in whom even at the second operation it was impossible to disclose the exact site of the tumor; great improvement has taken place since the operation, the man has been doing his work for two and a half years, is rid of his headaches, and his vision is satisfactory.*

While I firmly believe that the cure of cerebellar tumors is difficult to attain, except in a very small proportion of the cases, I believe that when the diagnosis of cerebellar tumor is made, and when there is a fair degree of certainty as to the special part of the cerebellum which is involved, a large trephine opening should be made over the suspected area; and, even if at the first or at the second stage of the operation the neoplasm is not found, much good will be done by the relief of pressure, the headaches will disappear, or will at least be diminished in severity, and blindness—the greatest of all scourges in these cases—may thereby be prevented or considerably deferred.

21 East Sixty-fifth Street.

2. 1906.

CHRONIC URETHRITIS AND AN IMPROVED METHOD OF APPLYING MEDICATION TO THE URETHRA.†

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I DESIRE briefly to call your attention to certain exceedingly important conditions in cases of urethritis which are frequently overlooked and seemingly most difficult to eradicate. It is not unusual—in fact, it is quite common for the practitioner in his treatment of urethritis to find that the patient improves up to a certain point but continues to have the so-called "morning drop" or that shreds persist in the urine. He finds it practically impossible to get him beyond this stage. Both the patient and the surgeon become tired and discouraged and the patient drifts away. In examining for life insurance, shreds in the urine are often found although the applicant has believed himself perfectly cured. The symptoms referred to indicate that there still exists an inflammatory condition in the uretha. The inflammatory exudate may form a stricture. Under proper stimulus the discharge will return and the patient, ignorant of the danger, becomes a source of infection. I believe the method of treatment which I will describe will prove useful and efficacious in this class of cases. If it is used sufficiently early it will prove a preventative of the organization of the exudate and the formation of stricture.

The methods most commonly used in the treatment of subacute and chronic inflammatory conditions of the urethra are irrigations, passing of cold sounds, application of ointment by means of tubes and various shaped sounds, and packing the urethra with gauze impregnated with various medications. All these have their advantages and disadvantages, but the latter method has appealed to me for a number of years as the ideal one, if it could be used without irritating the patient. At first I used half-inch bandages and packed them through an urethroscope. Then Dr. Rucker's

* Word was received to this effect from the patient in December, 1906.

† Read before the Academy of Medicine, Buffalo, October

straight glass tubes came to my notice and the packing cord manufactured for use with them. These tubes and the packing cord proved much more efficacious than the former method, but could not be used in a great many cases. I found that the straight tubes were satisfactory in the pendulous portion of the urethra and although they could be used in the deeper parts, they caused too much irritation in the passing. To overcome this difficulty Jeffrey-Fell Company made for me some curved tubes which could be inserted into the deep urethra without any more damage to the inflamed surface than was occasioned by the passage of the straight ones in the anterior part (See Figure 1).

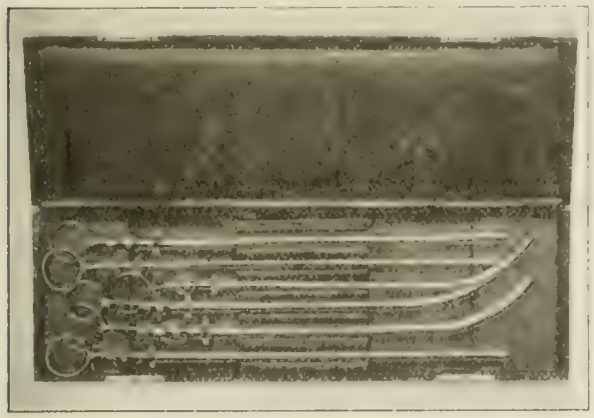

Fig. 1.

The glass tubes are of distinct value in treating subacute and chronic urethritis for the following reasons: they are easy of application and combine more valuable features than any other single remedy; the mucous membrane is stretched to whatever extent is desirable; the medication enters into the recesses and follicles where the organisms are usually protected from treatment or the urinary stream. The action of passing the instrument and the cord distending the walls of the canal hasten the absorption of the inflammatory exudate.

In case of a stricture in the formative stages from a granular patch or from localized inflammation, this is the treatment for curing the discharge and removing the shreds as well as preventing by its prompt absorption the organization of the exudate and the formation of stricture. If a stricture has already formed, the dilatation, with a local application to the mucous membrane to allay the inflammation and gentle massage at the point of constriction to increase the reaction, brings into action more factors towards its cure than any other single treatment.

Nodular masses and thickening of the mucous membrane are more promptly absorbed because the lymphatics and blood-vessels are toned up by the massage, cold, and medication. A great variety of medication may be applied by this method. The most satisfactory base of the medications I have used has been an oil, so that the patient upon removing the packing in from three to eight hours after treatment will find that it has not dried out enough to adhere to the mucous membrane. The patient is instructed to empty his bladder just previous to the treatment, the packing remaining in as long as he can go without urinating. He then passes a small amount of urine, which, as a rule, forces out the packing, though in some cases where it has been rather tightly packed he may need to assist by pulling gently on the end after it has been moistened by the urine. My method of inserting the packing is as follows:

I select a tube as I would a sound, according to the size of the urethra. If the condition is subacute I use a tube of smaller size, to cause as little irritation as possible in the passing. The cord consists of four strands. I use either two strands or the full size, whichever size fills the tube selected. The cord is then inserted in the handle end of the tube and forced through the tube by the obturator. As much of the cord is now pulled out at the distal end as is intended for use. (See Fig. 2.) If the localized inflammation or stricture is situated in the first three inches, I pull out three inches of cord; if it is further down the urethra, more is used. The cord and tube are placed in the medication until the cord is thoroughly saturated. The cord at the handle end is now pulled out until but an inch or so of the saturated part remains in the tube. The cord is then cut at the junction of the medicated with the nonmedicated portion. In pulling the cord through the tube it has acted somewhat as a piston and has drawn some of the medication with it. (See Fig. 3.) The tube is inserted and passed down the urethra beyond the area you wish to medicate. Because of the oily base of the medication no lubricant has been used. The obturator is then inserted into the cord near the distal end and pushed down the full length of the tube, carrying the cord with it, and at the same time forcing ahead into the urethra such medication with it. (See Fig. 3.) The tube is obturator is now withdrawn half an inch and pushed forward again; each time as the obturator

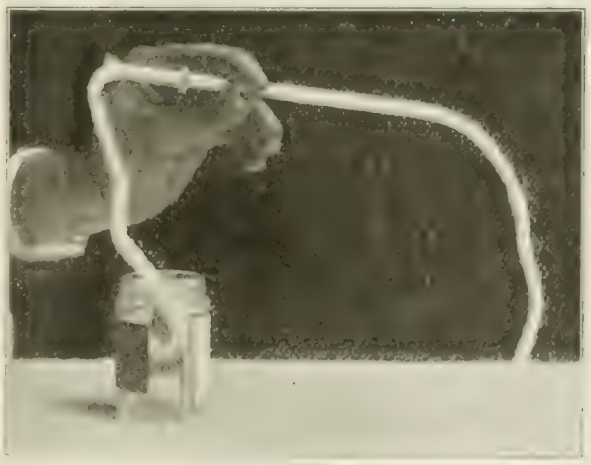

Fig. 2.

is pushed forward the tube is withdrawn the same distance. This leaves the cord in position. Force of any kind should never be used, nor is the treatment applicable in an acute condition. Unless this is borne in mind much harm can be occasioned by the use of this method at too acute a stage. The intervals between treatments vary according to the reaction which follows and the conditions being treated.

The following solutions have been found satisfactory in many cases, although, of course, various combinations may suggest themselves to the surgeon: Ichythol, one dram; resorcin, forty grains; balsam Peru, three drams; castor oil q.s., four ounces; lignol, one dram; balsam copaiba, one

dram; castor oil, one ounce; olive oil q.s., four ounces.

Chronic Urethritis and Gleet.—These terms have long been shown not to be synonymous, for a gleet may exist where a persistent search fails to show gonococci, and, on the other hand, chronic gonorrhea may not cause a discharge. Lydston divides these conditions into three varieties: (1) When the inflammation remains subacute with occasional acute exacerbations accompanied by more or less pain and smarting on urination, the prostate often being involved with a feeling of fullness in the perineum, together with frequent urination. (2) The discharge becomes thin and watery, being sometimes so scanty that nothing is visible, save a drop of mucopurulent fluid in the morning. This is the most frequent form, and depends upon: simple catarrh, involving constitutional and local predisposition; congested and granular patches of mucous membrane; organic stricture; abscesses or fistulæ; dilatation with chronic inflammation of the lacuna magna; chronic follicular prostatitis; urethral folliculitis; cowperitis; tuberculous infection. (3) A form of urethritis in which there is apparent recovery. After a variable period of time, a thin mucopurulent discharge develops as a consequence of sexual

Fig. 3.

excess or intemperance. The causes of chronic urethritis in a large majority of patients are inefficient treatment and excesses during the acute attack or the convalescent period; too early cessation of treatment, and the resumption of the ordinary modes of life, resulting in frequent relapses, each more stubborn than its predecessor; frequent repeated fresh infections, each attack being milder than the previous one but more prolonged. These conditions often leave submucous thickening and granular patches, and may lead to infiltration and subsequent sclerosis and contracture of the periurethral connective tissue—strictures. These are the most important factors in causing chronic discharge. The starting point is usually in the mucous depressions, where the inflammation persists and the organism is protected from the urinary stream, as well as urethral irrigations and injections. Here the gonococci lurk ready to increase their virulence at the proper stimulus. After a period of quiescence more or less complete, a stimulant is received in the form of congestion from dietary or alcoholic excesses, or sexual excitement, and what has been but a small, smouldering flame now assumes the character of a forest fire, and inflammation soon spreads to the adjoining urethra. Because of a certain amount of immunity of the tissues, having but recently been swept by this same flame, the length of time necessary to get it under control is not as long as in the primary attack, but each fresh attack increases the inflammatory condition of the mucous or granular patch, and assists in forming an organic stricture. Of 164 cases of stricture, Sir Henry Thompson gives the period of development as follows: Ten occurred during acute gonorrhea; 71 cases developed in one year; 41 cases in three or four years; 22 cases in seven to eight years; 20 cases in twenty to twenty-five years.

Duration of Contagion.—Johnson says, "If we were asked to define the most characteristic trait of gonorrheal infection, we would be obliged to say its tendency to persist and recur," but upon this point there is great diversity of opinion. Finger requires the absence of gonococci, pus corpuscles, and periurethral complications before allowing patients to marry. He believes that the newly-formed epithelial cells growing from the deeper layers carry the germs to the surface, and in this way tend to throw them off unless there is an acute invasion again of the deeper layers. Keyes is more liberal and allows his patients to marry when there is prolonged gleet of unknown origin, if no gonococci are present, and he believes it has a beneficial effect upon the discharge. White and Martin say it is safe to forbid coitus as long as gonococci can be demonstrated in the artificial acute cases from strong injections. The retention of a full-size sound for fifteen minutes, with massage along the urethra and prostate will usually aggravate the condition when gonococci are present if no attempt is made to destroy the organisms expressed from the follicles, and they are left in the urethra. Three or four glasses of beer usually increase the discharge to be examined. A patient should never be allowed to marry if gonococci can be found in the discharge or in the secretions massaged from the prostate, or in the semen collected in a condom during coitus.

Pathology.—The lesions usually appear as "intense congestions, excoriations, granulations, epithelial thickenings, papillomas, follicular, and lacunar involvement, or infiltration of the submucous periurethral connective tissue, resulting ultimately in a stricture." There may be a general leaky condition of the mucous membrane, due to some systemic weakness without any proof of localized inflammation. The most frequent cause is the glandular involvement with an exudate thrown out around the gland. Finger says that "chronic gonorrhea is essentially chronic inflammation of the subepithelial tissue, which passes through two stages, that of infiltration and contraction." Gouley says, remembering that a chronic mucopurulent discharge is nearly always a sure indication of the existence of a granular urethritis, which is the formative stage of certain strictures, the surgeon should direct his attention to the cure; if this is accomplished there will be no stricture.

All authorities agree that recent strictures can be cured by dilatation, therefore I claim that the treatment with the tube which dilates and also leaves a medicated dressing for hours in contact with the inflamed surface, not only cures the discharge, but will at the same time cure the worst complication that could arise—that of a stricture. The follicular involvement which is also constant

in these prolonged cases and which is so often the starting point of a stricture, can be massaged and the follicles freed from their secretion and filled with the medication. The massage and pressure are undoubtedly the most efficient means for removing the submucous and perifollicular exudate. This digression into the treatment is to emphasize the pathological points that are to be considered in the management of these cases, hoping that I may more deeply impress the importance of doing something for these patients instead of allowing them to continue an astringent injection or irrigation, taking balsams, etc., until the development of a stricture, with all its far-reaching effects. The epithelium of the urethra proliferates and degenerates, the cylindrical form changing to the squamous. The favorite seats are the posterior urethra and the bulb. The inflammatory process may be limited to the anterior or the posterior urethra, but usually involves both. The epididymis, prostate, seminal vesicles, and bladder may be affected.

Symptoms of Anterior Urethritis.—There is nearly always a history of recurrent attacks without sufficient reason. A slight discharge of mucus is generally present, but it may be of so small a quantity that it is seen only as the "morning drop." There may be only a stickiness at the meatus and yet the presence of shreds will show conclusively that the anterior urethra is involved. The discharge usually appears thin and watery, or whitish in color, until an exacerbation is brought on and it becomes more profuse, yellow, and thick, clouding the urine. Microscopically, it shows large number of pus cells, desquamated epithelium, intracellular gonococci, and other organisms in varying numbers. Shreds are invariably present in the urine, and are usually in proportion to the inflammation, and their decrease and final absence is a much better index to the progress and cure of the disease than is the discharge, for they persist long after the discharge has ceased. The shreds are analogous to the mucus that collects in the nasal cavities or the scabs which form on lesions exposed to the air where the serum and débris dry, but in the urethra they are washed out by the stream of urine. Their character varies from pure mucus which appears clear in color, often long and floating near the surface, to those loaded with pus, which readily sink to the bottom. Under the microscope they show mucus, pus cells, epithelium, gonococci, and other organisms, and should always be carefully studied in determining the diagnosis, prognosis, and treatment. There is usually some redness around the meatus, and slight burning may be felt on urination.

The symptoms of chronic posterior urethritis are unfortunately more or less vague and indefinite in mild cases, and it is these that are most dangerous in carrying disease to innocent wives. If urethritis is limited to the deep part of the canal, there will be no discharge, not even a "morning drop" to warn the patient of the danger. There is nearly always a history of a recurring discharge of varying degree of intensity from a mild, acute attack to a mere drop. These relapses are likely to be set up by alcoholic and especially venereal excesses, and usually yield promptly to treatment, the patient thinking many times he has contracted a fresh attack. There may or may not be a frequency of micturition which increases with the degree of urethro-cystitis. The desire to urinate is often imperative, and may be associated with pain in starting or completing the act. This may be a severe burning, with more or less straining to expel the final drop. If there is an acute exacerbation and the inflammation is marked, a drop of blood may be squeezed out of the congested verumontanum by the muscular contraction. The involvement of the sexual function is variable, and, as a rule, but not always, in proportion to the depth of the inflammatory process and the extent to which the prostate is involved. Ejaculations may be either premature or unduly prolonged or attended with pain. The normal sensation may be lost or altered. "So extensive is the nervous connection of the deep urethra and so depressing and widespread are some of the symptoms that it may be well considered the solar plexus of the pelvis." Pain may be felt in the lumbar or sacral region, down the thighs, above the pubis, or back toward the rectum. These pains may be mild and intermittent or dull and "uneasy" or neuralgic in character. Mental depression and neurasthenia are frequently seen, especially if nocturnal emissions are frequent. Indigestion, constipation, disturbances of the general health with loss of flesh are found in severe cases.

Diagnosis.—The histories of these cases are usually characteristic, shreds in urine constantly, a slight discharge if the anterior urethra is involved; no discharge if limited to the deep urethra, but recurrences are caused from alcoholic or venereal excesses when the patient thinks perhaps he is well. The discharge and shreds should be examined microscopically and strained for gonococci. In reaching a diagnosis not only locate the trouble, but determine if possible the cause of its persistence, as a urethral contraction, involvement of the prostate or any adjacent structures. Wolbarst's three-glass catheter test may now be used. Briefly, the test is as follows:

"The anterior urethra is washed out carefully until the washings come out clear—glass No. 1; this shows the condition of the anterior urethra. A soft, sterile catheter of small caliber is now passed into the bladder, and the bladder contents are drawn off into glass No. 2; this shows the bladder urine plus any possible drippings from the posterior urethra, or any possible urethral detritus carried in by the catheter; the catheter *in situ*, the bladder is washed out thoroughly, until the washings come out clear; this shows us that the bladder is empty of all pus or shreds; we now inject about eight ounces of clear fluid into the bladder, and withdraw the catheter; we have thoroughly washed out the anterior urethra and the bladder. The patient now passes two ounces of the fluid into glass No. 3; this shows us the condition of the posterior urethra. We therefore have obtained mechanically the separate fluids from the three portions of the urinary tract. If we decide to go into further detail, we may massage the prostate and have two ounces of fluid passed into glass No. 4; this will show the prostatic condition after massage." A bulbous bougie should be passed and any constrictions, tender points, or other abnormalities noted. A microscopical examination of the discharge brought out on the shoulder of the bulb is made. If the discharge has been persistent and ordinary treatment has failed, the canal should be explored with the urethroscope and a search made for congested or granular patches, etc. Some of these cases

have a persistence of shreds, but with symptoms so mild that frequently they are not noticed until perhaps a complication as impotence or prostatitis calls the patient's attention to these organs. Usually the sexual and urinary symptoms are well marked and point immediately to the deep urethra, although undoubtedly many of the patients are treated for cystitis by careless observers who do not examine the urine properly, a precaution so simple and yet very important.

Prognosis.—The time required to cure a chronic urethritis is usually in direct proportion to its duration and the complications. It is well never to promise to cure a patient in any given time, for there are so many factors under his control that may not be properly carried out, and then the surgeon is censured for failure to cure in the time specified. The average time for the cure of an uncomplicated urethritis is from three to seven weeks. Occasionally, however, there will be intractable cases, disappointing to both the surgeon and patient. If a stricture is beginning to form or is the actual cause of the discharge, the prognosis depends upon whether or not the surgeon realizes the importance of adopting a line of treatment to eradicate the inflammatory exudate while it is recent and soft. If it has undergone complete organization the prognosis as to the discharge is greatly altered, and it depends upon the curability and complication of the stricture. This is the most serious condition that could arise from a chronic anterior urethritis, and yet is often completely ignored in the management of these cases. If the deep urethra is involved all the factors in the case must be considered, such as age, general health, complications as prostatitis, cystitis, conditions of the kidneys and ureters, and here also is the question of stricture of great importance, the success depending upon attacking both simultaneously, as well as any other complication, if a prompt and permanent result is desired. The complication rather than the urethritis determines the prognosis. Dissipation, excesses, or irregular treatment will always prevent a satisfactory result.

Treatment.—No routine treatment can be used with these patients, but it must be selected after a careful examination of the anterior and posterior urethra, and a consideration of the previous history and treatment. The social condition, habits of the patient, and his general health are all important. The possibility of a stricture being the cause of a persistent discharge or the danger of the gleet resulting in a stricture must always be borne in mind. Fresh air, moderate exercise, nourishing but nonstimulating food, plenty of plain or lithia water are essential. If the patient has been overtreated the discharge will often cease if all treatment be stopped and the digestion and urethra allowed to become normal. Excessive sexual indulgence and excitement are always harmful. The bowels should be regulated by aperient waters or salines. Hot enemas alone or in conjunction with hot sitz baths may be found useful in certain cases, especially where there is a tendency to an irritable condition of the bladder. Oil of sandalwood and balsam of copaiba are probably the best drugs to use internally at this time, and they should be given in capsules. Methylene blue has also proved of service in these conditions. These drugs should be pushed to the full extent to obtain results. Many patients cannot take oil of sandalwood because of irritating nepthritic pains. In selecting remedies the milder ones are to be used first and the more radical measures adopted subsequently. For an uncomplicated anterior urethritis with only a slight mucopurulent discharge or a "morning drop" one may start the treatment with injections three times daily of a weak astringent solution. It should be strong enough to cause a slight smarting sensation, but not a positive pain. The latter generally means that some chemical violence has been done, which may be the starting point of a stricture by prolonging the inflammation. It is only by abuse of injections that harm results, for properly used they are very valuable in the treatment of gonorrhea, both acute and chronic. When given the patient should be instructed to urinate first and then the meatus should be held together for fifteen or twenty minutes.

Among the useful astringent solutions may be mentioned zinc sulphate 1-500, 1-100, lead acetate 1-500, 1-100, hydrastis muriate 1-500, 1-100. The strength of these should be increased gradually and the patient instructed always to dilute any injection that causes pain. If after two weeks' trial the discharge still persists, hot irrigations may be given once or twice daily of either potassium permanganate 1-4000, zinc permanganate 1-4000; silver nitrate 1-8000, or copper sulphate 1-10000.

In case the deep urethra or bladder is involved these irrigations may be forced back into the bladder, by having the patient relax the compressor urethra muscle by attempting to urinate. This treatment, unless contraindicated, may be continued for two or three weeks and if shreds and a discharge, or shreds alone, are found the urethra should be packed once a day after irrigation. If the reaction is excessive the interval may have to be increased to two, three, or four days. In some cases cold sounds passed followed by the packing is found to have a beneficial effect in stimulating the absorption of the exudate. After the first or second treatment, when the novelty has worn off, the patient having emptied his bladder previous to the packing is usually able to retain it from four to eight hours.

This treatment of packing the urethra makes it possible to apply to the inflamed portion a surgical dressing which remains there for hours in contradistinction to the usual injections or irrigations, which merely bathe the part for a few minutes. If used in the management of persistent discharge it is the most efficient means of preventing one of the worst complications that could arise—that is, stricture. All authorities agree that these soft, recent exudates may be absorbed before organization is complete. Therefore, this method is the most rational treatment for a prolonged discharge. This exudate is usually most abundant around the follicles, and, as the ordinary treatment has very little effect upon the deep infiltration, or the inflammation of the follicles, we have still further reasons for adopting this as a routine treatment of these cases. It is not to supplant but to supplement the other remedies.

Conclusions.—(1) The worst complication that is likely to follow a chronic urethritis is a stricture, consequently this should be borne in mind during the entire treatment.

(2) The pathology is essentially a chronic inflammation of the subepithelial tissue (and especially around the follicles), which passes through

two stages, that of infiltration and that of contraction.

(3) All authorities agree that these soft recent exudates may be absorbed before organization has set in. The most rational method of forestalling a stricture is by packing the urethra.

(4) The medication is in close contact for hours with the follicles and depressions, where germs are protected from irrigations and injections. The exudate thrown out around these follicles is frequently the starting point of stricture.

(5) No other treatment combines so many beneficial factors, *i.e.* dilatation, massage, medication uniformly applied to the entire membrane and depressions and for a considerable length of time.

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THE GELATIN METHOD OF PRESERVING SPECIMENS.

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On account of the large number of inquiries concerning the method employed by the Boston University School of Medicine in preparing the specimens recently exhibited at the meetings of the American Medical Association in Boston and of the British Medical Association in Toronto, this article has been written. Its aim will be to explain as fully as possible the origin, technique, and value of the method. The first description will be found in an article by the present writer that appeared in the *New York Medical Journal,* August 3, 1902. Several important changes have since been made that appear to require accurate description if satisfactory results are to be attained.

Before detailed consideration of the technique, a few preliminary notes may be of service in explaining why a new method was needed. As was pointed out in the original article, "certain things are essential to a satisfactory medium used in the preservation of specimens. It must prevent decomposition, conserve normal relationships with as little shrinkage as possible, and preserve the normal colors."

Let us consider how far the heretofore common methods reached to these requirements. *Alcohol,* one of the oldest of the preserving media, destroys color, causes much shrinkage, often macerates, renders thin membranes opaque, and rapidly evaporates. In some cases this may be satisfactory and adequate. Much more frequently, however, by bleaching all the tissues, it completely ruins the specimen to be preserved. *Formalin* was at first thought to be the long-sought-for color fixative, but the hopes so highly elevated were soon overthrown. To-day, much superior to alcohol, its place is recognized and its scope limited. When carefully used, it does not render thin tissues, as fetal membranes or the cornea, opaque; it fixes well, and in correct solutions does not cause objectionable shrinkage. The gas is very penetrating and objectionable to the oral and nasal mucosa, as well as to the skin. Many specimens can be excellently preserved in weak solutions which, when so prepared, require little subsequent attention.

Numerous other solutions might be mentioned, each satisfactory in a limited field, usually more used by the originator than by anyone else.

In addition to these, one more must be mentioned, as it is probably the one most widely used by the majority of modern museum workers. We refer to the Kaiserling method. Here the specimen is placed for a varying length of time in a solution containing a large percentage of formalin. By this means the hemoglobin is changed into methemoglobin, an insoluble substance of a brown color. Subsequent immersion in alcohol gives to the methemoglobin a red color, essentially the same as the original hemoglobin color, but now insoluble. The tissue is then placed in a solution of glycerin and potassium salts for permanent preservation. It may preserve a good color for years under favorable circumstances. Light will soon fade many specimens; others will become macerated by the preserving fluid, which also often becomes cloudy. Anyone who has had experience with glycerin will know how difficult it is to seal perfectly a jar containing this medium so that none will work its way out. And even in the most favorable cases the result is far from perfect from the standpoint of the demonstrator, a large, awkward jar, in which the specimen is rolling about at random. It is not necessary to enlarge upon this

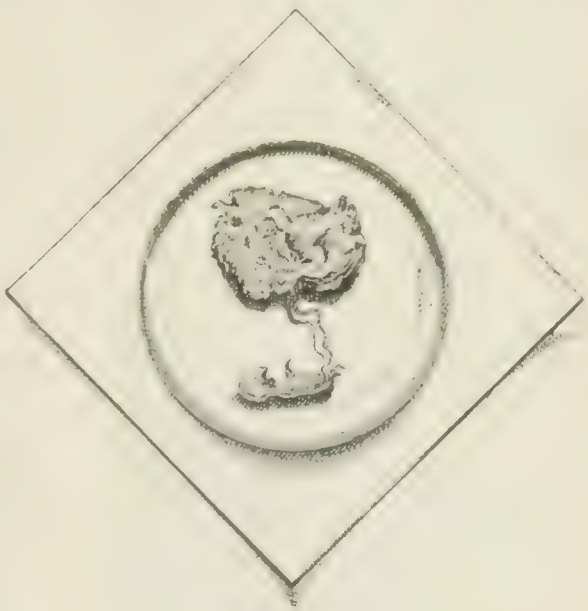

Fig. 1.

point to those who have tried to demonstrate pathological conditions under these circumstances. How much more desirable is a specimen firmly fixed in a solid medium, so that it can be turned upside down, or viewed from any side with ease. That some such solid medium might be advisable was long ago recognized, and a form of glycerin-jelly was suggested by Nettleship in 1871. This was used to a very slight extent, limited, as far as we are aware, to the preservation of eyes. It should be noted that no attempt was made to retain colors, the eyes being fixed in bichromate solution, and then placed directly in a carbolic-glycerin jelly. For general pathological purposes, therefore, the method possessed but few advantages over the more common media. Early in 1901 the writer, becoming much dissatisfied with all the then known methods, began a series of experiments that culminated in the process about to be described. This process has now successfully withstood the tests of nearly six years, has been adopted by many of the leading laboratories, and has received a very flattering amount of commendation from many of the best pathologists of the world.

The Method.—(It will be seen that the prelimi-

nary steps coincide accurately with the Kaiserling method.) Care should be taken to secure the specimen to be mounted in as fresh a condition as possible, for the color once lost can never be regained. The best results are obtained when less than ten or fifteen minutes elapse between the time that the tissue is removed and its submersion in the fixing fluid. If several hours must intervene, dry cloths or cotton should completely envelop it to absorb the moisture. Refrigeration, while preserving the color temporarily, should not be employed on specimens to be thus prepared. All free blood adherent to the surfaces, due to the surgical or post-mortem operation, should be gently washed away, and the tissue placed in a relatively large amount of the following solution:

No. 1: Potassium nitrate.. 15 grams
Potassium acetate.. 30 grams
Formalin ..... 200 cubic centimeters
Water .....1,000 cubic centimeters

At this time care must be taken to have the various parts placed exactly as they are finally to remain, for within a short time they become fixed in whatever position they happen to be, and cannot be altered thereafter. If the specimen possesses a cavity, as does the gall-bladder, appendix, intestine, etc., the contents may be carefully removed and replaced by some of the above solution. A very successful way to preserve the natural contour of the unopened gall-bladder is to introduce the fluid through the cystic duct with an injecting syringe, its subsequent escape being prevented by a ligature or an artery forceps. A large, firm organ, such as the liver, should be sectioned before immersion, in order to allow the solution to penetrate equally every part and give uniform results. In the case of the lungs, the trachea and bronchi may be utilized as channels through which the liquid may be forced to every minute part. Metals should not be used here, or at any other stage of the process, to force light tissues to sink. We have found that in these cases the specimens, if allowed to float after lightly wrapping in a considerable amount of gauze, will be satisfactorily preserved. The length of time essential for complete fixation of color varies with the size and variety of specimen. About twelve hours will usually prove sufficient for the majority. Brains, blood clots, and very large specimens require from one to two days. At the end of this time the object, which should now be comparatively firm, is removed from the liquid, immersed for a few minutes in water, and then placed in

No. 2: Alcohol.

From the color standpoint, this is the most important part of the entire process, as the return of the color temporarily lost in No. 1 solution will be partial or complete, according as the alcohol is applied for an improper or a proper length of time. And the only way to determine that proper time is to watch each individual case. When the tissue is removed from the fixative fluid, the blood is of a dark-brown color. Upon submersion in alcohol this is gradually replaced by a light-red one, essentially the same as normal blood. As soon as this tint is seen the alcohol may be known to have acted sufficiently long, and should be removed at once. From one to five hours will probably be a fair average for the majority of preparations. Prolonged immersion will cause the color to fade, after which it cannot be regained. Others have recommended two alcohols of varying strength, but if the amount of fluid in proportion to the size of the specimen be large, a single solution will give practically as good results. Occasionally, the selected surface will not look very fresh, even after the use of alcohol, probably on account of overfixation. This may often be remedied by cutting a thin slice from the edge, thus exposing an area on which the fluids have not acted so intensely. In fact, it is our custom, in preparing kidneys, livers, and similar specimens, to preserve intact that part through which the section is to be made until after the alcohol has acted for a few minutes. By this means a freshness is secured that is not otherwise attainable.

Fig. 2.

The colors having now returned, whatever excess of alcohol is present is washed away by water, or the specimen may be placed without washing into

No. 3: Potassium acetate.. 100 grams
Glycerin ..... 200 cubic centimeters
Water ..... 1,000 cubic centimeters

Here it may remain for days or months as a permanent mount (Kaiserling), or it may be continued to the final step. The sooner this last step is taken, however, the better will be the preservation, as No. 3 tends to macerate tissue. Some of our best specimens have been subjected to this solution for less than one hour.

No. 4: Gelatin ..... 200 grams
Solution No. 3 ... 3,000 cubic centimeters

As great care is required in the preparation of this last mixture, its technique will be described in full before commenting upon the mounting of the specimen. For some time we recommended soaking the gelatin in No. 3 for one or two days, but have later obtained better results by combining the two and immediately heating. About three or four liters are placed in a good agate-ware pail, which is placed directly over a gas stove, the entire solution being brought to the boiling point in the shortest possible time. Care must be taken to prevent burning, although the danger is not great. When a temperature of about 55° C. has been reached, and the gelatin is nearly all melted, the white of one egg is added for every liter present, and the entire solution is rendered strongly acid by acetic acid. The coagulated white of egg helps to clarify, as does also the acetic acid. In addition, the acid probably renders the medium a better color conserver. As soon as boiling becomes active, the hot preparation is poured into a filter with two thicknesses of paper, and the clear solution is collected in the stock jar. When ribbed funnels are used no difficulty is experienced in the process, but with the smooth ones more rapid results are attained by placing the whole apparatus into a large steam sterilizer, where the gelatin will not solidify. After solidification, a crystal of thymol placed on the top of the stock solution will effectually prevent the appearance of fungi.

In a container holding about two liters there should be but little more color to the solution than there is to pure water. In smaller amounts there should be practically no color at all. Having now prepared our medium we will proceed to the permanent mounting. This may be performed in square museum jars, round jars, test tubes, etc., according to the nature of the specimen, but will be probably more attractive and useful if made in a Petri dish,

as described in our article of 1902, to which reference has already been made. The thymol is now removed from the stock solution of gelatin and the bottle is placed in a steam sterilizer for liquefaction. When completely liquid, and at a temperature of about 45° or 50° C., a thin layer is poured into a Petri dish, and to it is added about one drop of formalin to each 20 c.c. of the solution. Into this is placed the specimen, face downwards, where it is allowed to stay till the gelatin has become solid. More of the formalin-gelatin solution is now added, sufficient to almost, but not quite fill the dish. This should be allowed to solidify thoroughly for ten or twelve hours in the ordinary room temperature. More of the same preparation is finally added, till a slight convexity is formed above the edge. A wet plate glass is now quickly placed on the liquid gelatin in such a way as to force out all the air bubbles and rest evenly upon the upper edge of the dish. This may be performed in one of two ways. The plate may be allowed to touch first one side of the dish and then gently lowered in such a manner as to form a wave of gelatin that will drive out all bubbles. (Fig. 2.) Or it may be pushed on from one side, the plate and dish being parallel, if an excess of the solution be maintained in front of the advancing edge. (Fig. 3.) This being completed, it is set aside for an hour or more, with the plate still on top. The superfluous gelatin is now gently removed with a coarse brush, and a cement of Canada balsam, with 20 per cent. clove oil, is applied around the entire circumference. The next day the glass is carefully washed, another coat of balsam is applied, and the specimen is permanently mounted.

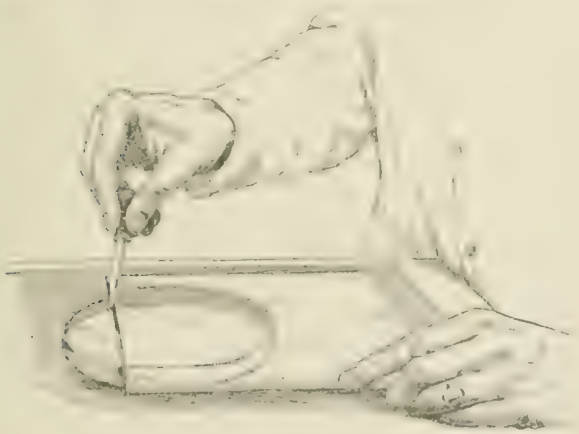

Fig. 3.

Petri dish-mounting is more complicated and requires much more practice than do the jar mounts, but, as stated above, is much more attractive.

Great care must be taken in using the formalin. Too much will cause undue contraction of the gelatin and appearance of air bubbles; too little will allow liquefaction with its resultant disadvantages. Just enough will (and has) preserved the specimen in practically perfect condition for years. Another point to be noted is the complete solidification of the full dish of gelatin before applying the cover. This allows of about all the contraction that will naturally occur, thus tending to prevent the entrance of air bubbles. The Petri dishes are the same as ordinarily used in bacteriological work, and may be obtained in various dimensions. With the smaller ones common window glass may be used as bases, but for the larger ones plate glass will be preferable. If the side away from the specimen be ground it provides a good background and brings the specimen into greater prominence. Its only objection is that it obscures one face of the object, which usually is not of great importance. The shape of this plate is optional, some preferring it to be square, others giving preference to the rectangle. Canada balsam, even with the addition of clove oil, is not a perfect sealing agent; it is, however, so much more pleasing in appearance than the various gutta percha compounds that it is preferred. A fresh, thin coat, quickly applied with a camel's-hair brush every six to twelve months, will usually be successful.

For labels, we use white zinc to number the specimen (Abbott's classification) and ordinary white ink for the name and diagnosis. The former is permanent, the latter easily removed with the moist finger—a very convenient thing when quizzing a student. Others attach typewritten cards to the glass with balsam, which is often an excellent method.

Much simpler than the above is the mounting of specimens in jars and large test tubes. Here all that is required is to fill the container with a sufficient amount of formalin-gelatin, place therein the specimen, allow to solidify, and put on the top. In the majority of these cases a small air space is left at the top of the jar. Various parts of plants have been mounted in this No. 4 solution after fixation in a single formalin solution, with good results. The same statement will apply to preservation of flies, leeches, fish, snails, cockroaches, and many of the other lower forms of life.

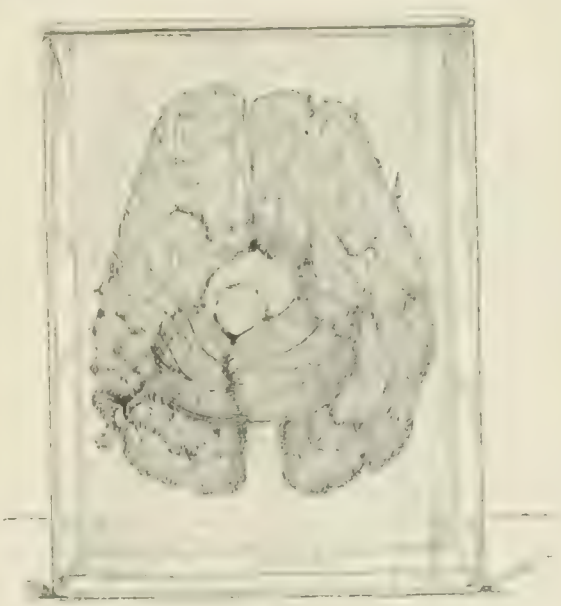

Fig. 4.

At the recent meetings of the American and the British Medical Associations, the effect of direct sunlight and heat upon these mounts was well shown. In both places many specimens were purposely placed in the place of greatest exposure. The balsam in one case became soft, allowing the Petri dish to slide off, but except for this, not one showed any effect, and in none did any air bubbles appear. Extreme cold may at times cause so much contraction as to crack the glass. This is not common, much less so within the past two years than in the earlier ones when we were less accustomed to the method.

In our first article four advantages were claimed. Let us see if these claims have been proven true.

1. The permanency of the mounts. There are now in our museum mounted specimens that have made all the following return journeys: Saratoga, N. Y.,

1902; Cleveland, O., 1902; St. Louis, Mo., 1903 (six months exposed to light at the Exposition); Portland, Ore., 1904 (six months same as at St. Louis); three Boston exhibits apart from the University buildings. Four hundred specimens were packed by ordinary workmen and shipped by freight from Oregon, with breakage of less than ten. Surely these facts should be conclusive.

2. The compactness and neatness. This assertion to those who have seen the preparations needs no further explanation.

3. The easy adaptability for class demonstration. Interest with understanding has increased much in those classes where these preparations have been used. In addition to their use as hand specimens, we use them in our reflectoscope, thereby throwing upon the screen a reflection of the real object in its natural colors, more satisfactory than any picture.

4. The successful preservation of color. Specimens first mounted nearly six years ago, which have been almost continually in the light, show no appreciable loss of color.

Much credit for useful suggestions and assistance in working out the practical details must be given to my assistants, Drs. F. S. Morris, now of Pittsburg, and C. A. Eaton, of Boston. Grateful recognition is also given to others working with the same method in other laboratories, since our first publication. Many valuable ideas have thus been obtained from Prof. W. M. L. Coplin of Jefferson, Dr. Henry Albert of Iowa, Dr. Wolbach of Harvard, and Prof. Leary of Tufts, for which the writer expresses his sincere appreciation.

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THE TREATMENT OF LA GRIPPE.*

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THERE is neither a prophylactic nor a specific for influenza. It is obviously impossible to formulate a specific plan of treatment for an acute infectious disease, occurring in widely-extended epidemics, characterized by catarrhal inflammation of the mucous membrane of the entire respiratory tract, and less frequently of the digestive tract, and attended by quickly oncoming debility, and by nervous symptoms. Not only is the disease exceedingly variable and protean in its manifestations, but we must differentiate, in the individual instance, between a case occurring during a pandemic invasion, as an endemic incident, as an epidemic occurrence, or as a sporadic outbreak. In the first instance, the element of panic enters largely into the calculation. In the second, the environment must be considered. In the third the prevailing type of the epidemic must be estimated. In the fourth we must carefully differentiate the ordinary catarrhal respiratory inflammation, which has an obvious exciting cause—usually changeability of the weather, lacks the characteristic depression, does not attack many members of the same family, and has, as a rule, a lower range of temperature and less involvement of the nervous system. I will say nothing here about the necessity for excluding acute miliary tuberculosis, typhoid fever, malaria, or one of the ordinary infectious eruptive fevers.

Having decided that we have to deal with a case of general influenza due to Pfeiffer's bacillus, or probably to the residual germs which remain after a pandemic invasion, our first duty is to endeavor to prevent the spread of the disease. To this end, we should isolate the patient, even though we cannot reasonably hope, by this measure, to diminish either the activity of the infecting principle or the susceptibility of other individuals. The nasal and bronchial discharges should be disinfected with the same careful attention to detail that is shown in other acute infectious diseases. The patient himself should be at once put to bed, for, although prophylaxis against the attack is theoretical and to a great extent impracticable, prophylaxis against sequels is in the highest degree practical and useful. Those who continue at work and endure exposure not infrequently suffer at a later period of the disease from the most serious results. A fair-sized, single dose of calomel, followed if necessary by a saline draught, will help to eliminate some of the infection, if given at the time of the initial chill. The patient's bed should be warmed, and he should receive, in the bed, a footbath of hot mustard water with rubbing of the extremities, and a hot drink. Alcohol will be useful in those accustomed to its use, also in the aged, and in the weak. Young, healthy, abstemious patients will not need it at this stage. The diet should be restricted to milk, albumen water, gruel, and the ordinary fever foods. The use of milk should not be pushed in those who have a heavily-coated tongue, for it will only cause indigestion. Concentrated meat broths can be used, unless active diarrhea or the condition of the kidneys should be a contraindication. Acidulated drinks will relieve the thirst in some, and also soothe the stomach, and flush the kidneys. Others will be benefited by alkaline fluids, such as vichy, or by bland waters. Cold baths and cold compresses are generally not well borne, and increase the discomfort.

The average patient will expect to swallow drugs, and the atrocious pains sometimes present will suggest the use of analgesic antipyretics. It is my personal conviction that drugs of this class contributed more to the death rate during 1889-1890 than did Pfeiffer's bacillus. At the present time their use is not so general, but they still occupy too prominent a place in the lay mind. Pain which is severe enough to require drugging will be better managed by Dover's powder or codeine. Another drug largely used by self-prescribers in this affection is quinine. There is not the slightest evidence that quinine in any dose favorably modifies the course of the attack, or shortens its duration, although it may be useful during convalescence. The old rule that "the physician is to be a watchman all the time and a therapeutist only when occasion arises" applies with striking force to influenza, yet the symptoms of this affection cry aloud for relief, and of these symptoms the depression and the respiratory catarrh will in most cases be prominent. I usually meet these symptomatic indications by a prescription containing five grains of ammonium carbonate, five grains of ammonium salicylate, and half an ounce of the aromatic wine of erythroxylon coca (of the National Formulary) in each dose. This may seem like active therapy, but this combination has done me yeoman service during many years in private practice, and in

*Read before the Eastern Medical Society of the City of New York, November 9, 1906.

dispensary and hospital services. It will relieve headache and neuralgia and stimulate the heart, respiration, and kidneys. Incidentally, I may remark that it is sometimes fearfully and wonderfully made by apothecaries who are pressed for time. When this combination fails to meet the indications mentioned, the case is serious enough to require constant attention, and the hypodermic use of strychnine, caffeine, or camphor. The stage of convalescence must be carefully managed by tonic and supporting treatment, especially addressed to the nervous system, in order to avoid the formidable array of complications and sequels, any of which may develop even in mild cases.

The most common complication is bronchitis. This will require its usual treatment, with the important reservation that no remedy should be employed which is a sedative to the nervous or circulatory system. This reservation excludes antimony, aconite, veratrum viride, potassium salts, and large doses of ipecac, and compels us to fall back upon steam inhalations, hot drinks, counterirritation, rest in bed, and codeine for excessive cough. Should bronchopneumonia develop, strychnine and aromatic spirits of ammonia, well diluted with water, are indicated. Oxygen inhalations, though much derided, are advantageous in some cases. The presence of profuse bronchial secretion in the smaller tubes positively contraindicates morphine.

The poison of influenza is capable of setting up serious changes in the intracardiac ganglia and in the myocardium; therefore, the pulse and the heart sounds must be carefully studied, and all unnecessary movements on the part of the patient absolutely prohibited until the rhythm and force of the heart have been restored. The three tinctures, nux vomica, belladonna, and digitalis, act well in bringing about this result, or a similar combination of strophanthus, cactus grandiflora, and belladonna, sometimes acts efficiently. The coexistence of valvular disease of the heart will add its own specific indication for treatment.

Kidney impairment will also supply a field for therapeutic intervention, which is too wide to be gone over within the limits of this paper. Symptoms referable to the nervous system may dominate the clinical picture from the onset, or may become prominent at any time during its course. It is no uncommon sequel to see robust, self-reliant men converted into feeble hypochondriacal valetudinarians by an attack of grip, which has weakened the general nervous mechanism, as well as the special nervous apparatus of the heart. This sequence of events seems especially liable to happen to scholars and brain workers, who should receive the benefit of a long period of rest with entire change of scene and employment before taking up again their life work.

The tragic results of the formation of a drug habit during this period should make us extremely cautious in inaugurating the use of hypnotics, sedatives or analgesics. Headache, insomnia, neuralgia, neurasthenia, hysteria, chorea, peripheral neuritic disturbances, and psychic disorders, may all seem to the patient to demand drugs, but the practitioner who relies upon outdoor life, freedom from worry and care, moderate exercise within reasonable limits, good nerve-building diet, and hydrotherapy, will leave in his wake the more grateful memories. In the stubborn neuralgias during the period of convalescence, quinine, in moderate doses, is more effective than its modern coal-tar competitors, and is frequently useful where they have failed.

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THE VALUE OF THE DIFFERENTIAL LEUCOCYTE COUNT IN GYNECOLOGY AND ABDOMINAL SURGERY.*

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It is a gratifying fact that since the publication of my first paper concerning the value of the differential leucocyte count in diagnosis and the added significance this gives to the leucocytosis, read before the Surgical Section of the Academy nearly two years ago, the matter has at least by some been given the attention I believe it deserves, with very happy results. Further evolution of this diagnostic aid has led to no change in the fundamental principles concerned as follows:

The increase in the relative number of polynuclear cells is an indication of the severity of the toxic absorption, and the degree of leucocytosis an evidence of the body resistance toward this absorption. It is evident from the above that neither the differential leucocyte count alone nor the actual leucocyte count alone is of any value, and if diagnostic data is to be had from the examination of the blood, it must be obtained from a consideration of these combined factors. Within reasonable limits the figures obtained justify an inference as to the probable presence or absence of a purulent exudate. Purulent exudates are rarely if ever present with low polynuclear percentages, irrespective of the height of the leucocyte count, while very high polynuclear percentages almost invariably indicate their presence even if the leucocyte count is low. My continued daily contact with cases in which this diagnostic aid is sought strengthens rather than weakens my belief in this valuable adjunct in surgical diagnosis, presenting as it does, diagnostic and prognostic data at a time when the clinical picture may be confusing.

Since that time a number of criticisms have appeared which would tend to prove this diagnostic help of doubtful value, and it is unfortunate that such statements are usually made without proper regard to the fundamental principles on which the method is based, and enumerate a series of pitfalls without any mention of the much larger number of happy results. It is so self-evident as to scarcely merit mention, that a blood examination can no more take the place of bedside observations than a urine analysis can indicate the presence of a diabetic coma without the bedside confirmation; still this is an argument frequently used against a purpose never intended by the most ardent advocates of the method. Figures have been quoted of cases where purulent exudates have been found without a relative polynuclear increase in the blood, with evident disregard of the fact that the pus was enclosed in such a way that no toxic absorption occurred which explains the blood picture. Other groups of cases are mentioned in which high polynuclear percentages were unaccompanied by purulent exudate or gangrene, not mindful of the fact that such polynuclear increase may also be seen in other than suppurative conditions. As in every other technical procedure, these different counts, in order to be at all accurate, demand a certain amount of technique and faithful execution, frequently ascribed to the hospital interne, undeservedly in many instances, as I know from personal experience.

While it is true that pitfalls and errors surround this as all other diagnostic methods, and it is of use only to the discriminating clinician who learns to

*Read at the meeting of the Obstetrical Section, New York Academy of Medicine, November 22, 1906.

apply it, still nobody can gainsay the fact that it fills a place occupied by nothing else. A few examples may be quoted to emphasize this point.

Take a case of severe pneumonia, with high leucocytosis and pronounced relative polynuclear increase. A fall in the leucocyte count with an increase in the polynuclear percentage is a sign of impending danger, and often precedes the clinical signs of this danger by twelve to twenty-four hours.

A case of appendicitis, with possible gangrene, or a case of otitis media, with possible mastoid involvement, may present a complex of symptoms which possibly are coupled with conditions somewhat opposing operation, so that the surgeon is really in doubt as to the absolute necessity of interference. The differential count, together with the leucocyte count, particularly if repeated, has been the direct cause of saving many of these cases by immediate operation of which I have record. In none of the examples quoted has the blood examination given any aid in the direct diagnosis, nor has it detracted one iota from the necessity for careful bedside observation, and still it is impossible to deny that it has been of great value to the clinician. Concerning the practical application of the method, I can use no more fitting words than by quoting from Dr. C. L. Gibson's paper in the *Annals of Surgery* of April of this year. The higher the polynuclear percentage as compared to the leucocyte count, the greater the probability of a purulent exudate. It is of value chiefly in indicating fairly consistently the existence of suppuration or gangrene, as evidenced by an increase of the polynuclear cells disproportionately high as compared to the total leucocytosis. The greater the disproportion the surer are the findings, and in extreme disproportions the method has proved itself practically infallible. As the relative disproportion between the leucocytosis and the percentage of polynuclear cells is of so much more value than the findings based on a leucocyte count alone, this latter method should be abandoned in favor of the newer and more reliable procedure.

Dr. Gibson has also advocated the use of a standard chart which I heartily indorse; by means of it the important factor of the relation between polynuclear increase and leucocyte increase is graphically demonstrated.

Concerning the direct diagnostic and prognostic aids obtained in the different classes of cases from the use of this method, it was essential for me to tabulate in my earlier papers such cases in which I could obtain the necessary clinical data. This is obviously a difficult matter for the laboratory worker, and as it has been done by clinical authorities and we are to have the pleasure of hearing from Dr. C. L. Gibson and Dr. H. C. Taylor in the discussion this evening, I will not pursue this branch of the subject. I should like, however, to refer to Dr. Gibson's paper just quoted, as well as to a paper by Dr. Taylor read before the New York Obstetrical Society in February of this year.

Dr. J. F. McKernon has given this method of examination a careful trial in suppurative conditions associated with or following middle ear disease, and is also enthusiastic on this adjunct in diagnosis. He intends voicing his opinion and results at a meeting of the Surgical Section of the Academy in December. In a general way I may add that suppurative bone processes do not give us figures as high as we generally see in suppurative conditions in the soft tissues, probably on account of slower toxic absorption.

With my enthusiasm in advocating this diagnostic help in acute inflammatory lesions and differential diagnosis, I grant you that the procedure is still crude, and that many refinements are necessary in order to make it as useful as we would like, but this is only a question of research.

In closing, I should like to add a few words concerning the disappointments and failures encountered in the application of the method. Children, particularly infants, do not give the uniform results obtained in adults. It must be recalled that in these the normal polynuclear percentage is a more variable quantity, and when they are severely infected it seems that a drop in the polynuclear percentage may be due to a lack of ability to further absorb toxic material, thus indicating a graver rather than an improved condition. When pus is confined in such a way that no toxic absorption occurs, or when a purulent exudate is the result of a tuberculous or typhoid infection alone, there is no leucocytosis and no polynuclear increase. Experience also teaches that a mixed infection with or following tubercle bacilli or typhoid bacilli, does not show the high polynuclear percentages obtained in primary staphylococcus or streptococcus infection.

It is also found that the exact nature of the infection has a direct bearing on the degree of polynuclear increase, some organisms causing higher percentages than others, everything else being equal. A very small percentage of cases of error remains unexplained by the above, and in these one must conclude that we are led astray by drawing inferences from a specimen which does not happen to be a proper indicator of the circulating blood, even if the technique is as good as understood.

From my experience with the method I feel firmly convinced that it has gained a place as a diagnostic aid, that it merits every effort in the direction of improvement, and that the disappointments encountered should stimulate such effort rather than tend to condemn the procedure.

THE PSYCHIATRIC CLINIC AT MUNICH, WITH NOTES ON SOME CLINICAL PSYCHOLOGICAL METHODS.*

By G. H. KIRBY, M.D.,

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The psychiatric clinic at Munich is probably attracting to-day more students of psychiatry than any other institution in Europe. One meets indeed a cosmopolitan assemblage in the laboratories and lecture rooms, among which a goodly number of Americans are to be found. In the building of the clinic many of Professor Kraepelin's ideas and suggestions were carried out, and certainly its admirable construction and complete equipment as well as the usual facilities for teaching and investigation give to the Munich clinic a unique and foremost position. A location was chosen in close proximity to the other medical buildings of the university, which are found not far from the center of the city, yet an agreeable distance from the noisy business districts. The city of Munich has about half a million inhabitants and the clinic was designed to accommodate one hundred patients—the annual number of admissions is about 1,200. The building itself consists of a central part with two wings, in the latter of which the wards are located. The central division of the building contains the administrative offices, an out-patient department, the psychological laboratory, a large auditorium, library, and histological laboratory.

* Read before the New York Neurological Society, October 2, 1906.

In the wards the dormitory system prevails almost entirely, and exclusive of the division for private patients there are only two single rooms in the whole clinic in which patients can be placed; these are, however, never used for purposes of isolation. The dormitories contain from ten to twelve beds each, and upon visiting the wards one is struck by the prevailing quietness and good conduct of the patients. One hardly believes that he is in the reception wards for acute cases. The foreign students, that is some of the Americans, were inclined to attribute this good order to perhaps some characteristic of the German race; Professor Kraepelin, however, ascribes it entirely to the methods of treatment in vogue, especially to rest in bed, the dormitory plan for observation, and the continuous baths, and also to the fact that most of the patients enter the hospital without going through the hands of the police and the trying circumstances of arrest and perhaps detention in prison. Both admission and discharge of the patients from the clinic is made as easy as possible; many come voluntarily to the hospital, and more are brought by friends; a legal process for detention is resorted to only when necessary.

The Kraepelinian school has been criticised for a lack of interest in treatment. Indeed one quickly observes that drugs are rarely prescribed and then only to meet definite physical conditions; on the other hand hydrotherapy is carried out in the clinic probably more extensively than in any other institution in the world. Tubs suitable for the continuous bath have been liberally provided, there being no less than eighteen available for this purpose. There appears to be no contraindication to the continuous bath; all forms of excitements and agitations are favorably influenced—manic attacks, delirious alcoholics, anxiety psychoses, and excited general paralytics are treated by this method. No drug sedatives or restraint of any kind are used.

As regards the organization of the clinical work, mention can be made of only a few points. There are about twelve physicians on the staff and the principle of rotation on the services obtains. Besides looking after his service, each physician carries on some fairly definite line of investigation. Each man has every year a period of three months during which he is relieved from the care of his service in order that he may take up some special problem or finish some work already started. The records are still written in long hand, and this, of course, makes them to a certain extent inaccessible to the foreigners. The anamneses and observation notes are probably less full than the records which we are at present making in our New York State hospitals. The clinical material met with in Munich differs in several respects from the ordinary run of cases as seen, for instance, at the Manhattan State Hospital—dementia præcox, manic-depressive insanity, general paralysis, alcoholic and hysterical psychoses, with a large number of epileptics, form the bulk of the diagnoses; the delirious forms and the infective-exhaustive psychoses so frequent in the material coming from our American cities are remarkably scanty. The involution melancholias are extremely rare. During the past year considerable interest has been aroused in the clinic through the finding of several cases presenting the syndrome described by Adolf Meyer in 1901 in connection with his work on "Central Neuritis." The anatomical findings as well as the clinical picture correspond to Meyer's description.* Kraepelin inclines to the view that one deals here with a disease entity and proposes the name of anxiety psychosis, disregarding the fact that this name has already been applied by Wernicke to an altogether different symptom-complex.*

One of the assistant physicians is doing special work on the pupillary reactions; he has constructed an apparatus which is probably an improvement on Bumke's. The pupils are viewed through a small telescope, definite amounts of light can be thrown in either eye and the alteration in size of the pupils accurately measured in millimeters. The behavior of the pupil can also be easily observed under emotional stimuli and painful cutaneous impressions. The reaction to which I wish to call special attention has been designated the "secondary light reaction," and is described as follows:

Illumination of, say the right pupil, with a definite amount of light causes, as would be expected, a contraction of the left pupil as well as the right (ordinary consensual reaction). If now the left pupil is illuminated with the same strength of light as the right, then the left pupil contracts still further, and likewise the right pupil, and in a sufficient degree to be measured. In other words, a definite amount of light thrown into one eye causes both pupils to contract equally, and then a further equal contraction of both pupils occurs when the other pupil is subjected to the same amount of light. This constitutes the secondary light reaction. The failure of this reaction was not observed in any healthy individual nor in any of the psychoses examined, except general paralysis. A series of general paralytics was examined in whom the ordinary light reaction was still present.

In 96 per cent. of these cases the secondary light reaction was absent. The investigator thinks that this sign is of importance because in a series of over 500 general paralytics examined in the ordinary way, 18 per cent. of the pupils reacted normally and in another 40 per cent. a reaction to light was still present. The so-called psychic and sensory pupillary reactions are being studied in dementia præcox, epilepsy, and hysteria.

I wish to refer briefly to some of the recent work in lumbar puncture. The use of platinum needles is recommended. In addition to the cover slip preparations obtained in the usual way from the centrifuged specimen the number of cells is also estimated per cubic millimeter by means of a specially constructed Zeiss counting chamber similar to that used in ordinary blood work, except that the chamber is deeper and the ruled surface larger.

In order to make this estimation, ten parts of fresh cerebrospinal fluid are mixed with one part of a staining fluid in an ardinary blood counting pipette, and from this the counting chamber is filled. The staining fluid consists of methyl violet and acetic acid. Above six to nine cells per cubic millimeter is considered abnormal. In counting, the results are tabulated as: Polynuclears, large lymphocytes, and small lymphocytes. Fischer of Prag recently read before the German Psychiatrical Society, which met in Munich, a paper on the anatomical basis of the cell findings in the cerebrospinal fluid of general paralysis. He compared the findings in the fluid drawn shortly before death with the findings in the meninges of the brain and cord in twenty cases examined post mortem. In the study of the cellular elements of the spinal fluid he used a method which it is claimed allows a satisfactory differential cell count. To the freshly drawn fluid some formalin

*Meyer, Adolf: On Parenchymatous Systemic Degenerations, mainly in the Central Nervous System. *Brain*, 1901.

*Wernicke: Grundriss der Psychiatrie: Angstpsychose, p. 227.

is added in order to at once fix the cells. The specimen is then centrifuged and cover slip preparations made and stained in the customary way. One finds then usually three types of cells, viz., lymphocytes, large plasma cells and polynuclear leucocytes. Fischer found an agreement to exist between the cellular contents of the fluid and the infiltration of the membranes covering the lower parts of the cord, while this agreement did not exist between the fluid and the condition of the membranes of the brain and upper parts of the cord; that is to say, an infiltration of the meninges of the brain and upper cord alone did not yield a positive cell count. Further, he observed that when a lymphocytosis predominated in the fluid, a lymphocytic infiltration of the membranes could also be demonstrated. If the spinal fluid was rich in plasma cells then this type of cell predominated in the pia. He concluded that the cytological elements indicated nothing more than the state of infiltration of the meninges of the lowest cord sediments.

Alzheimer in discussing this paper said that his experience did not lead him to believe that the cells in the spinal fluid originated from the neighboring membranes. He had found in brain abscess an increase in the polynuclear leucocytes in the spinal fluid without any corresponding increase of the same elements in the meninges of the cord. He also knew cases in which a lymphocytosis was found in the fluid during life, but in which the diagnosis was arteriosclerosis and not general paralysis. These were old syphilitic cases and post mortem he did not find any increase in the lymphocytic elements of the spinal meninges.

To Kraepelin is due the credit of having established the first laboratory where the methods of experimental psychology could be applied to the study of insanity. The organization of the psychological laboratory in the Heidelberg Clinic in 1890 opened a hitherto neglected field of investigation. Following Kraepelin's lead similar laboratories have been established in connection with several other psychiatric clinics.

On the question as to what psychiatry can expect to get from the psychological laboratory, Kraepelin takes, I think, a healthy attitude. Laboratory methods certainly offer no easy road for the solving of the problems of psychiatry and can never replace accurate clinical observation, but if we can learn in the laboratory how to better understand some symptoms, or if we are able to analyze certain mechanisms more satisfactorily, then the method has proved its usefulness. The great amount of time and the equipment required in this line of work practically precludes its being done except under special conditions, yet there are some methods in use which can be applied easily and quickly enough to be practicable in any hospital for the insane. I wish to refer to a few of these.

As a measure of the amount of mental work which an individual is capable of doing, Kraepelin and his pupils have developed and extensively applied the so-called method of continuous addition.* Sheets with single rows of figures are placed before the patient, who adds each two figures together and the number of additions accomplished in every minute is indicated by a stroke of the pencil which the patient makes as each minute is called off by the physician. The experiment lasts ten days, the patient works ten minutes daily, adding as many figures together as possible in that time. On alternate days a pause of five minutes follows the first five minutes of work, then after this rest another five minutes' work is done. With this method we have a simple, yet probably the best way of estimating fatigue and at the same time we are able to determine the influence of practice and the restorative action of a pause during the work. Curves can be easily plotted to show the results. Because of the strong complaints of fatigue made by patients suffering from a traumatic neurosis Specht* examined a series of these cases. Increased fatiguability was indeed found to be present, but because the patients failed to show improvement with practice Specht thought he had discovered a means of uncovering dissimulation and malingering. A recent investigation, however, of Plaut, in the Munich Clinic, seems to show that other factors may account for the absence of improvement with practise. In the further application of this method a variety of psychoses demand study, especially the psychasthenics, hysterias, the affective melancholias, alcoholics and perhaps the group of dementia præcox.

For the study of apprehension and retention a fairly simple apparatus is used. By means of a shutter arrangement a number of letters, usually six, are exposed to the eye of the patient for a known length of time. In this way is determined the number of letters correctly perceived and the length of time they are retained in consciousness. By this method it is possible to study the delay in apprehension and the memory disorder of the alcoholics, especially the Korsakoff delirium.

Another means which Kraepelin has used in the analysis of certain symptoms, especially motor phenomena, is furnished by the "writing-balance." With this apparatus one can measure the rapidity with which the patient writes as well as the pressure of the pencil on the paper, duration of pauses, and the size of the letters.

As one of the most important aids which we have at hand to-day in the analysis of certain mental conditions must be mentioned the "association tests." As this work has recently been thoroughly reviewed in the Psychological Bulletin,† I will refer here to only some of the interesting results obtained by Aschaffenburg and Jung.

Aschaffenburg studied the types of associations obtained in states of fatigue, in alcoholism and mania with especial reference to the reaction time and the occurrence of sound associations. On the ground of these experiments he based his belief that flight of ideas was a phenomenon secondary to the motor disorder. Jung has used the association tests for a different purpose, and has led the way into one of the most promising fields in which we are to-day working. He has shown how we can by this method discover undercurrents of thought or uncover hidden complexes existing in the patient's stream of mental activity. He has been working especially with hysteria and dementia præcox. By a recent clever psychophysical experiment he has been able to show in another way the existence of these complexes. During the association experiment a weak galvanic current is allowed to pass through the patient's head. Now when a sensitive spot or a submerged complex is touched upon by one of the words given for association, not only is the reaction time prolonged, but a corresponding alteration occurs in the electric current.

* Kraepelin: Die Arbeitskurve, in Wundt, *Philosophische Studien*, Bd. XX.

* Specht: Uber klinische Ermüdungsmessungen. *Archiv für die gesammte Psychologie*, Bd. 3, S. 245.

† Meyer, Adolf: Jung's application of association studies. *Psychological Bulletin*, August 15, 1906, and July, 1905.

PRURITUS ANI.*

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THE writings and teachings of our most eminent dermatologists as well as proctologists would lead one to infer that the annoying symptom known as pruritus ani might be caused by any one of an enormous number of distinct diseased conditions, both local and constitutional, and the various plans of treatment advocated are so numerous that the whole subject, to the general practitioner at least, is enshrouded with a great deal of mystery. To the writer it would seem especially fitting, because of the more satisfactory methods of treatment that have been originated largely by members of this society, that an attempt should be made to classify more definitely the common causes, and outline what we consider the more approved methods of treatment.

The habit of attributing aggravated cases of pruritus to constitutional diseases, such as diabetes, rheumatism, gout, tuberculosis, and syphilis, or to such gross lesions as internal hemorrhoids, anal fissure, fistulæ, prolapsus recti, etc., should be regarded in the light of our present knowledge as antiquated theories. Pruritus ani is the symptom caused by an unnatural moisture or discharge produced either by lesions about the anus, or by congestion or some pathologic condition in the rectum or sigmoid. This constant and irritating secretion, even though slight and scarcely discernible, eventually brings about pathognomonic changes of a mildly inflammatory nature in the structure of the epidermis of this region, which result in the typical chronic and subchronic dermatitis of the rectal pruritic.

The purpose of these remarks is to mention under five divisions my own views as to the cause of pruritus ani, in order if possible to get the sentiment of this Society upon the subject.

1.—First, and by far the most important causes of pruritus ani, are superficial ulcerations or abrasions of the anal canal. This lesion is very constant, and should always be sought for. Mr. F. C. Wallis of London first called attention to the frequency with which it occurred in pruritus. He maintains that it is present in 90 per cent. of all cases, and attributes the frequency of its occurrence to the method of fusion of the proctodeum with the blind end of the gut. He says: "The fusion takes place at a variable line between the sphincters. The lining membrane of the proctodeum is thin, and, unlike the mucous membrane, is scantily supplied with blood-vessels, and thus abrasions in this locality are easily brought about. But, because of the ever-altering condition of the sphincters, and because of the contents of the bowel, they rarely heal of their own accord." His method of treatment, briefly described, is as follows: The ulcer is cocainized by the injection of a few drops of the solution immediately beneath it. This elevates the lesion so that it can the more readily be cauterized with the galvano-cautery knife. After this it is smeared with vaseline, and an opium suppository is inserted in the rectum. In very bad cases, when there is considerable ulceration, Mr. Wallis is in the habit of using a general anesthetic in order that the sphincters may be stretched and the actual cautery used.

Three years ago I had an opportunity of seeing Mr. Wallis treat a large number of patients* by this method, and was greatly surprised that the cure of such a small lesion as was sometimes discovered would so quickly relieve the patient of the intense itching. Since then, in my own practice, I have often demonstrated the fact that the whole cause of the pruritus may be attributed to a very small ulcer or abrasion of the mucous membrane of the anal canal.

2.—Catarrhal Diseases.—The rectum in such instances is never entirely free from feces, a condition which is productive of chronic forms of proctitis, sigmoiditis, superficial ulcerations, etc. The passage of flatus at such times allows a small quantity of mucus to escape, thus irritating and rendering moist the anal region. These patients are best treated by securing soft evacuations of the bowels at least once in every twenty-four hours, by means of a suitable aperient taken at bed-time. After the bowels have moved in the morning they should be washed out with a half pint of a 4 per cent. boric acid solution. Furthermore, it will be found beneficial to make stimulating applications of silver nitrate or balsam of Peru to any abrasions or ulcerations which may remain. This is best effected with the proctoscope, with the patient in the knee chest position.

3.—External hemorrhoids are more frequently the cause of pruritus than internal ones. These ragged tags of redundant skin render it almost impossible for the patient to cleanse properly the anal region after defecation. This persistent fecal soiling sooner or later produces a dermatitis in persons predisposed to its occurrence. This variety of hemorrhoid may easily be removed after injecting with a one-quarter or one per cent. solution of eucaine. The wound may be allowed to heal by granulation, yet, if the base of the hemorrhoid was broad it is better to close it with catgut sutures. When the folds are numerous only two or three should be removed at one time, lest anal contraction take place.

4.—Situated from 3-9 mm. above Hilton's white line are several small pockets, the functions of which, so far as the writer is aware, have never been satisfactorily explained. It is asserted that they have something to do with either the secreting or the storing of rectal mucus, while, on the other hand, Stroud suggests "that they are simply the mechanical result of constricting the wide rectal tube to its small rectal orifice." The free borders or valves of these small pockets consist chiefly of nerve fibers, ganglion cells, and a very small amount of connective tissue elements. These little pockets will admit a probe which has been bent upon itself from one-quarter to one-half an inch, and with the windowed anoscope may be readily seen and explored. The thought had frequently occurred to the writer that these little crypts with their valves, when inflamed or infected, might be the cause of a reflex nervous disturbance manifested by a pruritus of the perianal skin. Keeping this idea in mind, I have in two instances, which resisted other treatment, succeeded in quickly allaying the itching by swabbing out these little pockets with a 1 per cent. solution of nitrate of silver, or a 15 per cent. solution of ichthyol in glycerin. While not wishing to convey the impression that any considerable number of cases of pruritus are due to disturbance of this portion of the anal canal, yet I am of the opinion that if a routine anoscopic examination of the crypts was made upon cases whose etiology was obscure, this condition

*Read before the American Proctologic Society, Boston, Mass., June 6, 1906.

*These patients were treated at St. Mark's Hospital for Diseases of the Rectum, London.

would occasionally be observed. In the two cases of this kind which I have treated the patients seemed to get very little relief from local applications, but by inserting the finger in the rectum relief and sleep were best obtained. Therefore I would suggest this as a symptom of irritation in this locality.

Growing from the margins or surfaces of these valves one frequently finds little white projections or *teats,* which can be made out by the exploring finger. Stroud explains their presence here as "accessory sense organs of a higher degree of development than the major part of the pecten, and not pathological outgrowths." When hypertrophied or elongated they cause many distressing sensations about the anus. Among them may be mentioned uneasiness in the rectum, such as a "creeping, crawling" sensation, and a feeling of incomplete relief after defecation. Quite frequently pruritus is the most prominent symptom. The treatment of these cases by ablation is very satisfactory. It consists in snipping the growths off with a pair of anal scissors as they protrude through the window of the anoscope. It is best to apply a strong solution of cocaine before removing them.

5.—Small polyps of the anal canal, protruding internal piles, prolapse of the rectum, and anal fissures, as well as other conditions, do doubtless occasionally cause itching about the anus, but very seldom in the writer's experience are they the cause of an old chronic or inveterate pruritus ani. When encountered, however, associated with pruritus they should be dealt with according to their special surgical indications.

Now, notwithstanding the fact that the exciting cause has been discovered and eliminated, it is necessary to direct appropriate treatment to the unnatural skin before much amelioration of the itching can be expected. It seems probable that it is the product of a chronic inflammation of the skin, with more or less thickening and infiltration, which in some way throws out of gear the "simple nerve endings which exist so abundantly in the epidermis." It is this departure from the normal which produces the sensation of itching; therefore it is our task to make such applications as will restore the skin to normal. The patient should be instructed to cleanse thoroughly the anal region after defecation, preferably with absorbent cotton which has been wrung dry of some antiseptic solution. The parts should be protected from friction and the irritation of the discharge by wearing day and night an anal pad held in place by a T-bandage. The pad is best made with absorbent cotton wrapped with but one thickness of sterilized gauze. Too many thicknesses of gauze, when ointments are used, absorb the greasy portion of the ointment, and shortly the anal region becomes dry and coated, with only its irritating mineral ingredients. The methods of applying and removing ointments are such important matters that in the first few weeks of treatment they should be seen daily by the surgeon. Simply to instruct the patient to use some of the ointment morning and night will inevitably result in failure.

Those cases in which the dermatitis is acute (eczema ani), accompanied by many excoriations from scratching and rubbing, require applications and ointments of a soothing and protective nature. However, in the class of patients who are here especially referred to, the skin is nearly always tough and leathery and covered with dead and sodden epithelium. The problem in these cases is to bring about a gradual destruction of this new formed epidermis, without too much inconvenience to the patient, and I know of no agents that serve the purpose better than nitrate of silver and citrine ointment (ung. hydrag. nit.), applied as suggested by our worthy President, Dr. Adler.*

It has been my experience that in those cases in which the skin was considerably thickened and tough, the saturated solution of silver is the more satisfactory. On the third day after its application, by placing hot fomentations over the anus for a few moments, a layer of exfoliated epithelium may be removed almost in toto.

In those cases, however, in which the skin was more delicate the same purpose is served equally well with the weaker solution.

For this class I have found an ointment composed as follows, more suitable than the citrine: red oxide of mercury three drams, Venice turpentine one ounce, lanolin three ounces.

*Dr. Adler's method: At the first visit the perianal skin is painted with a saturated solution of nitrate of silver. Provided any abrasions present are previously anesthetized with a 10 per cent. solution of cocaine this should occasion no discomfort. The application of the silver should be repeated at intervals of four or five days until all the dead epithelium has been removed. After the silver has dried the anal region is smeared with citrine ointment. The patient is seen daily for the first two weeks and then every other day for a like period. After this, once or twice a week until the skin has regained its original color, suppleness, and elasticity.

Anatomico-Clinical Forms of Congenital Malformations of the Heart.—After speaking of infantile cyanosis due to cardiac malformation, Jules Sebilleau says that besides this classic malady there exist several varieties of congenital cardiac malformations which can be diagnosed during the life of the patient. Among these he discusses the persistence of the ductus arteriosus. Normally this structure is transformed a few days after birth into a fibrous cord. In certain cases, however, it persists; this persistence may constitute the only congenital lesion. During life the diagnosis is based on the following signs: the existence of a systolic murmur behind the lung to the left of the vertebral column between the spinous processes and the spinal border of the scapula, at the level of the third and fourth dorsal vertebræ; distinct inspiratory reinforcement of this murmur; a marked influence on the arterial pulse of the two periods of respiration, the pulse being weaker during inspiration and stronger during expiration; complete absence of cyanosis which is explained by the passage into the ductus arteriosus of blood which comes from the aorta; red blood from the aorta mixes with dark blood from the pulmonary artery and cyanosis cannot occur.—*Gazette Médicale de Nantes.*

Deep Injections of Alcohol at the Point of Emergence of the Facial Nerve in Cases of Blepharospasm.—Valude has been using deep injections of alcohol as a therapeutic measure in cases of blepharospasm. This operation consists in injecting one and one-half cubic centimeters of 80 per cent. alcohol, together with .01 gr. of cocaine. The needle is inserted at a point between the anterior surface of the mastoid process and the inferior surface of the external auditory meatus. It is so directed that it glides behind the styloid process. In this way the point of emergence of the facial nerve is reached. Gentleness should be used in making the injection. At first .20 gr. is injected, and after a few moments the rest is injected in smaller quantities. In the two cases of blepharospasm in which Valude has used this treatment the pain of operation was very slight. At first a complete facial paralysis developed on the side in which the injection had been made. This paralysis rapidly cleared up. The palpebral spasm has not reappeared. In case of its recurrence it would be easy to make a new injection.—*Revue Française de Médecine et de Chirurgie.*

MEDICAL RECORD.

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THE TRYPSIN TREATMENT OF CANCER.

THE reports which have appeared recently in the MEDICAL RECORD on the result of the injection of pancreatic ferments in the treatment of cancer are exceedingly interesting, even if not conclusive. They are certainly of such a nature as to demand further essays of the remedy, though the lessons of the past should not be forgotten, and while trypsin is still on its trial it will be salutary to remember that there have been other remedies which seemed to promise well at first, but which are now, figuratively speaking, collecting dust on the top shelves of the pharmacies, out of sight and out of mind. The weak points in the case of trypsin, so far as it has been presented, are three: the small number of cases, the short time that has elapsed since the reported cures have taken place, and the lack of anatomical confirmation in most instances of the diagnosis of malignancy.

In some of the cases the diagnosis was established by a microscopical examination, and in others, such as the interesting laryngeal case reported by Dr. Rice, the clinical evidence of malignancy would have been accepted as conclusive had the disease run its usual course. But clinical evidence is insufficient in dealing with what is, according to all past experience, so improbable a fact as the absolute cure of cancer. Even a microscopical diagnosis in isolated cases would be brushed aside by the sceptical, if not by the judicial, as possibly erroneous, and the objectors will not be silenced until this diagnosis has been made a number of times by a number of competent microscopists.

The diagnosis being accepted, the number of cases in which the growth has disappeared after the use of trypsin and the other pancreatic preparations must be many times what they now are before the medical world will admit that a cure for malignant disease has been discovered. The instances of spontaneous cure of cancer are not few, and the disease has been seen to disappear under many and various forms of treatment. Violet leaves, condurango, thyroid extract, and even soap have been reported as effective in a number of cases, and it is possible they may have given the fillip needed by Nature to enable her to work a cure. Trypsin may act in the same way, or it may be endowed with a specific curative action. The cases thus far reported are too few to warrant a definite opinion.

Time alone can determine the actuality of the reported cures. Recurrence is the rule in all cancer therapy, whether by the knife, the *x*-ray, Coley's fluid, or other remedies, and few, even among those who are convinced that the cases treated were malignant and that the growths have disappeared under trypsin injections, will maintain that there is no possibility of recurrence. Yet, that is what we should expect if the theory of Prof. Beard, upon which the present experiments are based, is true. It is his belief that if the left-over asexual cells, which are the cancer cells, are once destroyed by trypsin, any further cancerous growth is impossible. The theory, with all its corollaries, is entitled to respectful consideration in view of the reports, meager though they still are, of apparently successful results, but time alone will prove it.

It may be noted, though the fact is not of much weight, that the reports of the results of the trypsin treatment in England have thus far been uniformly unfavorable. The remedy has been tried at the Cancer Hospital, the Middlesex Hospital, and other institutions in London without success, and Mr. Edmund Owen, in a recent lecture on cancer, asserts that there is no known method of treatment of cancer "which can honestly and confidently promise a cure." In explanation of this failure it is contended that the pancreatic extract used was inert, and that it was not administered properly. We have seen no detailed reports of these experiments and so are not in position to judge of their value, but if the trial of this method of treatment in America should eventually prove its worth, it would not be the first instance of a prophet finding honor in a country other than his own. The results of the trypsin treatment of cancer in this country are not yet sufficient to carry conviction and further trials may result in another disappointment and lead to the abandonment of the method, but we believe such trials are fully justified by the apparent success already obtained.

THE FUNCTIONS OF THE OMENTUM.

ALTHOUGH it is generally assumed that the omentum plays an important rôle in the physiology of the abdominal cavity, we find but few satisfactory presentations of the subject. Numerous references are scattered throughout the literature, and many of these have been collected by G. K. Dickinson in the effort to arrive at some conclusions of value (*Annals of Surgery*, November, 1906). The various functions of the omentum are determined by the different tissues which go to make up its substance, and, as the organ is closely connected with others in the abdominal cavity, the study of its functions involves the study of all. Taking up first the question of the circulation, it is quite evident that the large blood supply of the omentum makes it an important factor in maintaining an equilibrium in the abdominal circulation. For the relief of arterial tension, it is important that some part of the circulatory apparatus be capable of storing up blood. This the intraabdominal vessels are ready to do, and chief among them those of the omentum. This organ is also capable of equalizing the circulation in another manner, by becoming adherent to some area of local inflammation, and in this way affording a collateral circulation sufficient to relieve a localized venous tension. Another important function is attained through the vascular system in conjunction with the lymphatics, for as its extensive

surface is continually exposed to surrounding parts plenty of opportunity is given for absorption of fluids by the blood stream.

The adhesive property of the omentum is one peculiar to itself, and is well known. When irritated by some regional inflammation an exudate appears on its surface, which subsequently leads to an attachment and encapsulation of the offending area. The majority of the phagocytes extruded into the peritoneum for its protection have been shown to come through the omentum, and it has also been demonstrated that lack of development in the omentum, or loss through operation, renders the patient less resistant to peritoneal infection. Finally, it has been found that if the circulation of the spleen is entirely cut off the omentum gradually encapsulates the organ, and in time complete absorption of the latter occurs. Warthin believes that there are hemolymph glands of the splenic type existing in the base of the omentum, which may become enlarged and even functionate for the spleen if the latter is removed or its functions are interfered with. All of these collected facts show that in the omentum we possess a structure which is associated with a multitude of functions beyond that of mere protection to the abdominal viscera.

SCHOOL BATHING.

The establishment of a sufficient number of public baths in New York City is a matter of slow progress and the slipshod manner in which some of them are managed, in comparison with the efficient conduct of those under the charge of the Association for Improving the Condition of the Poor, is not calculated to increase enthusiasm over their further extension. We undoubtedly have much to learn from Continental countries in this respect. The working classes of Germany and France certainly keep themselves cleaner than do those in England and America. More recently the effort has been made on the Continent to supply the schools with baths and thus develop in very young children a practical knowledge of the pleasures of cleanliness.

An interesting report on this matter was not long ago presented to the London County Council by Dr. Kerr and Mr. Rose, who officially visited thirty-five schools in twelve cities of Germany and Holland—namely, Wiesbaden, Mannheim, Frankfort, Karlsruhe, Munich, Nuremberg, Halle, Berlin, Hanover, Cologne, Düsseldorf, and Amsterdam. "In all these, as generally throughout the countries visited, baths are provided in every school and every child, with the exception sometimes of the very young, bathes once a week. The precise arrangements differ, but as a rule the children stand in tanks of warm water to soap themselves and then have the soap washed off by a warm shower bath, gradually cooled as it is continued. There is a plentiful supply of towels and the bathing is controlled by a sufficient number of careful attendants. It is manifestly so conducted as to be pleasant to the children and to give them a constantly recurring experience of the comfort attendant upon a clean skin, so that it can hardly fail to lay the foundations of a habit likely to be enduring."

The problems of modern life are increasing here in this town with bewildering rapidity and complexity. We are all becoming more and more crowded and personal cleanliness is becoming more and more a necessity. We cannot make men good by mere legislation, but we can make it easier for them to be clean. If our Board of Education would take some steps in the direction indicated above, no one would call its members "fad-chasers." The enmity to soap and water is confined to an infinitesimal portion of the population. Unfortunately the average tenement offers few facilities for comfortable bathing. They are generally limited to the family washtub, which for various purposes does almost daily duty. No wonder then that the average child in such surroundings regards the bath as a penance instead of a pleasure. If we can inculcate a love of cleanliness in his mind and demonstrate that its attainment may be made a matter of actual pleasure we shall have gone far toward a solution of one of the perplexing problems of modern life in large cities.

THE FREQUENCY OF GONORRHEA AND ITS EFFECTS.

Of the lessons of modern medicine few have been deemed more important or have been emphasized with greater stress than the doctrine of the widespread prevalence of gonorrheal diseases among men, and consequently of the grave menace to the health of married women that this condition entails. While there is absolutely no reason to doubt the general correctness of this teaching or to question the wisdom of disseminating as widely as possible among the laity a knowledge of the perils that attend promiscuous sexual intercourse, there is a possibility that the numerical estimates of some of those who have interested themselves in the matter have been rather exaggerated. This at least is the opinion of Erb, who has of late years occupied himself very largely with the collection of statistics in regard to the prevalence of both gonorrhea and syphilis.

In a recent publication (*Münchener medizinische Wochenschrift,* November 27, 1906), he attacks particularly the results obtained by means such as those employed by Blaschko, whose horrifying figures have been quoted with great frequency and made the basis of sweeping generalizations that, according to Erb, are not justified by the facts. Blaschko, out of 10,000 male inhabitants of Berlin, found that eighty-three were suffering from gonorrhea in a single day, and by a series of multiplications which Erb considers unjustifiable reached the conclusion that every unmarried man, after five years of celibacy, contracts gonorrhea once, and after ten years twice. Furthermore, that every fifth young man after eight or ten years becomes syphilitic. Consequently, he says, every man who marries after the age of thirty years has had gonorrhea twice, and every fourth or fifth bridegroom is syphilitic. It is impossible to reproduce in detail Erb's arguments against the method of reasoning or to give all of his own statistics, which are much less pessimistic in tone. He contends that the only way to obtain reliable figures is not to begin with the young men and calculate what is likely to happen to them in the future, but to take the older individu-

als and find out what actually has happened to them in the past. The results obtained by investigating the past histories of 2,000 of his private patients lead him to the conclusion that only every other man has ever had gonorrhea, and that almost half of the male population has been entirely free from venereal disease of any sort. While these figures, though tragic enough, are much less alarming than those of Blaschko, the result of Erb's inquiries into the frequency of gonorrheal lesions among married women is still more encouraging. He found that among the wives of his gonorrheal patients only 6.25 per cent. had ever presented any symptoms that could be referred to gonorrheal infection, and that instead of "one child sterility" being the rule in these cases, as is often alleged, in 370 marriages in which the husband had had gonorrhea, 68 per cent. had had at the time of examination two or more children, and 25 per cent. had had four or more.

These figures of Erb's are certainly interesting, and though this method of investigation is by no means above criticism from several obvious standpoints, they probably may be taken as an indication that in their laudable zeal the alarmists have gone a little further than necessary. Still, even taking Erb's figures as correct, the showing is a terrible one and holds out a sufficient probability of punishment in store for the waywardness of youth. It is to be hoped that others who have access to a large clinical material in other countries will conduct similar inquiries, and especially is it desirable that other classes of society be investigated, for Erb's patients were almost entirely members of what he terms the cultured middle class.

Facial Erysipelas in a Mother the Cause of a Purulent Peritonitis in the Child.

Erysipelas, as generally observed in the newly born, occurs especially during the first few weeks of life. Although it may follow a wound or abrasion of the skin, it most often originates at the umbilicus. It then is frequently complicated by other lesions such as peritonitis and umbilical phlebitis. In instances when it originates in other parts of the body it may be uncomplicated. The tendency of erysipelas in the newly born is to spread with rapidity. The usual symptoms are well known, being great prostration, localized pain, and tenderness, restlessness, wasting, vomiting, and diarrhea. The prognosis is grave. L.-M. Bonnet in the *Lyon Médical* of November 25, 1906, reports a most unusual and interesting case of peritonitis in a boy about ten weeks old, whose mother had an attack of facial erysipelas. From birth up to the time of his death the child gained rapidly and regularly in weight. He appeared to be vigorous. He was born on July 19. About the end of August he became very subject to diarrhea. This condition ceased with treatment, but returned quickly when treatment was stopped. In spite of the recurring diarrhea his general condition remained excellent. It was while he was in apparently perfect health that the illness which caused his death developed. On September 30 the diarrhea increased and vomiting took place. The child was restless and was evidently ill. The abdomen was slightly distended. On the following day the patient was much worse and in the afternoon he died. Autopsy disclosed a purulent peritonitis. In its course and in its symptoms the peritonitis, in this instance of erysipelatous origin, resembled peritonitis due to puerperal infection. The whole course of events in this case appeared to take place inversely to the ordinary course of these phenomena. Erysipelas of the newly born is due most generally to a maternal septicemia, but in this case the mother who was attacked by erysipelas was the source of a subacute peritonitis in her child. The only case that the writer has been able to discover in the literature which at all resembles the one he reports was a patient of Meunier's. She was a girl sixteen years old and fell ill of erysipelatous peritonitis after nursing her mistress who was suffering from facial erysipelas.

Some Recent Observations on the Complement.

It has long been known that certain of the bactericidal sera were less potent for the protection of infected animals in large doses than they were when employed in comparatively moderate quantities. Apparently inexplicable, at first, this phenomenon was ingeniously elucidated by Neisser and Wechsberg in their work on the absorption of the complement, or thermolabile element of these sera, by the excess of immune bodies or amboceptors. The process, termed by them "Komplement-Ablenkung," or deviation of the complement, important in itself, has led to other observations of even greater practical value. One of the greatest of these is the recent discovery that the complement can be diverted from its amboceptor and rendered *hors de combat* by substances not at all participating in the immunizing or lytic reaction (as the case may be). Ehrlich and Sachs, Bang and Forsman had previously shown this to be possible for substances like yeast and extracts of red blood cells. Landsteiner and his associates, however, have made a distinct advance by proving within recent months that the complement of hemolytic sera may be absorbed by colloid and suspended substances normally present in the human body. Protagon, cholesterin, serum-albumin, peptone, and glycogen are among these, and the ease these observers seem to have experienced in finding substances which possess this inactivating affinity for complement renders it more than likely that there are a host of others, among the many and complex components of the tissues, which may act similarly toward the complements of many hemolytic and immune sera. The importance of this work lies chiefly in the explanation it offers for the failures of attempts at immunization by the ordinary methods in the case of many of the infectious diseases, and the hope it holds out of the overcoming of the difficulty by the concentration of the complement.

The Ocular Manifestations of Hereditary Syphilis.

An interesting and important contribution to the pathology of the various ocular lesions that are so frequently associated with hereditary syphilis is contained in observations made by Bab (*Deutsche medizinische Wochenschrift*, November 29, 1906), on the eyes of three syphilitic stillborn fetuses. Spirochetes have already been studied in the cornea by several investigators, notably Bertarelli, and Greef and Clausen, but these observations were the result of the artificial inoculation of the rabbit's eye, and therefore especial interest attaches to Bab's researches as being the first successfully carried out on actual clinical material. His preparations were made by means of the Levaditi modification of the silver impregnation method, and he deprecates

the view that to secure good results it is necessary to employ only very small bits of tissue. Instead of this he adopted the plan of placing the entire eyeball in the silver solution, and then searching through every portion of the organ by the very laborious method of making serial sections. In each case spirochetes were found in large numbers and could be demonstrated in practically all of the ocular tissues except the lens and the vitreous body. It is the author's opinion that the spirochetes through the blood stream are brought in large numbers to the eye, and then lodge in the tissues, multiply, and wander on into the neighboring structures. In accordance with the distribution of the vascular system of the eye they are found most abundantly in the choroid, from which they pass on into the substance of the iris, and into the sclerotic and deeper layers of the cornea. These facts seem to the author to explain satisfactorily the mode of formation of syphilitic keratitis, choroiditis, and iritis, while the demonstration in one case of spirochetes in the optic nerve, the retina, and also in the external ocular muscles throws light on the pathology of specific neuroretinitis, optic atrophy, and external ophthalmoplegia. Bab also discusses the allegations of those who claim that the "silver spirochetes" are only artefacts composed either of nerve fibrils or of portions of degenerated cells containing nerve terminations. He disposes of the first objection by stating that his preparations show the spirochetes in the middle of the lumen of blood-vessels, and of the second by stating that the cellular preservation in his specimens was perfect, and that all details of structure were most clearly defined. Like most investigators in this field, he believes that the spirochetes bear an etiological relationship to syphilis, and considers that the fact that they could not be found in the bodies of any of the nonsyphilitic infants also studied in the same way as controls argues against the possibility of their existing simply as chance parasites.

Separation of the Normally Inserted Placenta in the Course of Pregnancy.

This subject has for years excited the interest of obstetricians, and various opinions have been advanced regarding it. Jules Gaston, in the *Annales de Gynécologie et d'Obstétrique,* of November, 1906, gives a detailed résumé of this question. Many years ago Mauriceau reported in a treatise a certain number of observations of retroplacental hemorrhages. Following the appearance of this article were others by Peu, 1694, and Leroux, 1776. But it is J.-L. Baudelocque who handles this question with especial frankness in his treatise on the art of delivery. Some years afterward Mme. Boivin and Mme. Lachapelle, however, denied the existence of this affection. Later writers, since the observations of Winter, have made contributions to the study of placental separation. Among these observers are Tarnier, Mme. Henry, Pinard, Varnier, Ribemont-Dessaignes, and Champetier de Ribes. Gaston opens his discussion with a consideration of the etiology and pathogenesis. Under the first heading he considers anatomicopathological causes and ordinary clinical causes. Under the symptomatology he discusses the general condition, abdominal pains, the condition of the uterus, and accessory signs. An interesting section deals with statistics. That on pathological anatomy including reports on postmortem examination is of great interest. Gaston refers to the theory of Schickelé, who thinks that the placental separation may take place in such a manner that small effusions of blood on the interior of the decidua form progressively, so that coagulation follows and with it arrest of hemorrhage. He believes that the hematomata act like a solid foreign body in bringing about pain and consequently uterine contractions. Gaston believes that in cases in which the patient is suddenly attacked by intense pain in the abdomen with all the signs of severe internal hemorrhage the uterus has not had time to react. He thinks that the separation precedes all of the phenomena of contraction.

A Plastic Operation to Replace the Thumb.

The functions of the thumb are so important that it is usually considered that the loss of this member is equivalent to the loss of half the hand. The desirability of endeavoring to provide a suitable substitute in cases in which the thumb has been amputated either accidentally or by the surgeon is evident and an ingenious method has been proposed by Nicoladoni. This surgeon some years ago reported a plastic operation he had performed on a child in which he used the second toe to replace the thumb. The same idea has been applied by Krause (*Berliner klinische Wochenschrift,* November 26, 1906), who was consulted by a young clerk whose thumb had been amputated in childhood by a chopping machine. The deformity was so hampering to him in his work that he was willing to undergo any discomfort for the sake of securing a substitute for the missing member. Krause accordingly resolved to attempt to transplant the patient's great toe. The stump of the thumb contained a portion of the proximal phalanx and this was denuded of the old cutaneous scar. An incision was then made over the interphalangeal joint of the toe, and the skin, extensor tendon, and upper surface of the joint were divided. A short section of the proximal phalanx was excised and the stump of the thumb was inserted into the cavity so formed, the skin and extensor tendons of the two parts being united by sutures. The arm was then affixed to the leg by a massive plaster-of-Paris dressing in such a way as to secure complete immobility. It is stated that, although the cramped position required the use of opium during the first few days, the patient's discomforts after this were not severe. On the seventeenth day the exarticulation of the last joint of the toe was completed and the flexor tendon was sutured to that of the thumb. The wound healed without complications, and according to Krause's description the new thumb presents a very good appearance. Tactile sensation has developed over a portion of the grafted member, and although there is as yet but little or no power of voluntary motion of the transplanted phalanx, the operator is hopeful that under appropriate exercises this will be acquired. Even as it is, he says, the patient can use the hand for most of its ordinary functions.

Public Lecture at the New York Academy of Medicine.—The first public lecture of the winter will be delivered in Hosack Hall, in the Academy of Medicine, 17 West Forty-third street, on Saturday evening, December 29. The lecturer will be Dr. Wilfred T. Grenfell, C.M.G., physician to the missions of the Labrador Coast, who will take for his subject, "The Work of a Labrador Doctor." The lecture will be illustrated by lantern slides. Dr. Grenfell's work in the scattered Labrador settlements is of a unique character, and his account of the same promises to be of unusual interest. The lecture is open to the profession and the public.

News of the Week.

American Association for the Advancement of Science.—The annual meeting of the American Association for the Advancement of Science will be held at Columbia University From December 27 to January 2. The President of the association for the New York meeting will be Dr. W.H. Welch of Johns Hopkins University. J. J. Stevenson is the Chairman and Prof. J. McKeen Cattell the Secretary of the local Committee of Arrangements. The program of Section K, Physiology and Experimental Medicine, includes an address by Dr. William T. Sedgewick on "The Expansion of Physiology," and a symposium on the protozoa as factors in disease in which the following speakers will take part: Prof. E. B. Wilson, Prof. Gary N. Calkins, Dr. C. W. Stiles, Prof. F. G. Novy, Prof. James Ewing. The first session will be the business session, and will be held at Schermerhorn Hall, Columbia University, December 27, at 11 A. M. The second session, at which the protozoa will be discussed, will be held at the College of Physicians and Surgeons, December 27, at 2.15 P. M. The third and fourth sessions will be held at the Rockefeller Institute for Medical Research, on December 28 and 29, at 10 A. M., and will be joint sessions with the American Bacteriological and American Physiological Societies respectively. The Chairman of Section K is Dr. Simon Flexner, and the Secretary is Dr. William J. Gies.

The "Philippine Journal of Science."—Owing to the increase in the amount of material to be published, this journal will in future be issued in three divisions, devoted respectively to general science, medical sciences, and botany. The section on general science will include articles on chemistry, geology, and mineralogy, zoölogy (including entomology and ornithology), and a series on ethnological and ethnographical subjects. The section on medicine will be devoted to tropical medicine, studies in bacteriology, pathology, immunity, and work on serum production and therapy. The section on botany will include all botanical work issued from the Bureau of Science.

The Nobel Prize Awards.—As announced in a recent issue of the MEDICAL RECORD, the Nobel Prize in Medicine was divided between Prof. Golgi of the Pavia University and Prof. Ramon y Cajal of Madrid. Prof. Moissan of Paris received the chemistry prize for his experiments in the isolation of fluorine and his researches into its nature, also for his application of the electric furnace to scientific uses. Prof. Thomson of Cambridge University received the physics prize for his researches into the nature of electricity. The King of Sweden formally presented the prizes and medals on December 10.

The Yerkes Hospital.—The late Charles T. Yerkes provided in his will for a large hospital to be built in this city, but the carrying out of the plan has been delayed by litigation over several million dollars' worth of Chicago traction securities. It has now been decided in the federal court in Chicago that these securities rightfully belong to the estate, so that the erection of the hospital is assured. The counsel to the trustees states, however, that there are still a number of matters to be settled, the adjustment of which will require considerable time, before which work on the buildings can be begun.

A Perfect Method of Water Analysis.—In his message on the Panama Canal, sent to Congress on Monday of this week, President Roosevelt, speaking of the water supply of Colon and its purity, says, "I drank it and it was excellent." There is evidently no occasion for chemical and bacteriological tests after such a careful analysis, and any allusion to the *Bacillus coli* would be entirely out of order.

The Pope's Physician.—The position of pontifical physician left vacant by the death of Dr. Lapponi was first offered by the Pope to Prof. Di Venezia, who was his physician when he was Patriarch of Venice, but owing to his advanced age the physician declined the appointment. The post was then conferred upon Dr. Petacci of Rome. The salary paid to Dr. Lapponi was $1,200. It is said that applications for appointment to this honorable post were received by post and telegraph from nearly every country in Europe and America.

To Investigate the Pennsylvania State Hospitals.—A commission has been appointed by Governor Pennypacker to investigate the management of the institutions for the insane in Pennsylvania. The commission began its labors at the State Hospital at Harrisburg on December 17, and has subpœnaed great numbers of witnesses, including doctors, nurses, and officials.

Unlicensed Sanatoriums to Be Prosecuted.—The State Lunacy Commission has announced its intention of investigating and if necessary prosecuting two sanatoriums in New York and Brooklyn said to be receiving insane patients without being licensed to do so. The attention of the authorities has been directed to these institutions through the suicide recently of two of their inmates. It is expected that the entire matter of the conduction of private sanatoria in this city will be made the subject of an inquiry by the commission.

The Chicago Health Department recently sent its estimate for next year to the City Comptroller. Commissioner Whalen is asking for $788,840, as against $461,845 for this year. One hundred inspectors are requested for work in the public schools to prevent the spread of contagious diseases. There are sixteen men in the department so engaged at this time. New inspectors will be paid $75,000 if the appropriation is carried. The department wants $25,000 for public baths in the Twenty-fourth Ward, and $43,000 to take over the ambulance service from the police.

Need for Another State Institution.—In the opinion of the committees of the State Board of Charities conditions in this State demand the construction in Eastern New York, at a point preferably in the vicinity of New York City, of a State institution to be devoted to the custodial care of the senile and feeble minded and epileptics who are not proper subjects for the overcrowded institutions already maintained by the State for that class. At a conference between the State Board of Charities and the heads of the present institutions it was ascertained that there were 481 inmates of the Craig colony at Sonyea who should be cared for at such a new institution, and that there were 200 such inmates in the institution at Syracuse for the feeble minded, 200 in the Newark State Institution, and 200 in the Rome Custodial Asylum. In addition there are at least 600 inmates of almshouses throughout the State who need such custodial care, and it was stated that the work of all of these institutions was greatly hampered by the overcrowding due to the presence of patients of this class.

Woman's Hospital.—The vacancy in the Medical Board of the Woman's Hospital, New York, occasioned by the resignation, several years ago, of Dr. Thomas Addis Emmet, has been filled by the nomination and election, December 10, by the Board

of Governors, of Dr. J. Riddle Goffe, to the position of visiting surgeon. The new hospital was opened for the reception of patients December 6.

Craig Colony for Epileptics.—According to the thirteenth annual report of the Craig Colony for Epileptics just issued the present census is nearly 1,300 all told; when the new buildings are completed the total census will be approximately 1,500. The subject states that the new hydrotherapeutic plant recently installed has been found very valuable in the treatment of certain types of epilepsy. The net per capita cost of keeping each patient at the Colony last year was $141.38.

The Spread of Glanders in England.—The increasing use of automobiles in London is said to be responsible for the dissemination of glanders among horses all over the Kingdom. Formerly glanders was rare outside of London, but since horse traffic in the metropolis has been largely and increasingly replaced by motor omnibuses and motor cars, the disease has been scattered through the county by the sale there of London's abandoned horses.

Ambulance Accident.—A Kings County Hospital ambulance in charge of Dr. Albert and carrying a patient to the hospital was run into last Friday by a trolley car. Dr. Albert, the driver, and the patient were all thrown to the street, and the former received a fracture of the skull and internal injuries. The driver's left arm and right leg were broken and his head cut open, but the patient escaped further injury.

A Serum for Cerebrospinal Meningitis.—The press despatches state that Dr. Kolle, Professor of Bacteriology in the University of Berne, Switzerland, has announced that he has been able to produce a curative serum for use in cases of cerebrospinal meningitis.

Wishes Divorce at 105 Years.—It is reported that an application for divorce was filed on December 14, in a Kansas court, by a woman aged 105 years. The cause given is extreme cruelty, and the plaintiff alleges that since 1898 she has been unable to live with her husband, who is fifteen years her junior, on this account.

Dr. Thomas Addis Emmet of this city has been made a Knight of St. Gregory by Pope Pius X., in recognition of his devotion to his profession and his services to the Catholic Church.

Dr. D'Orsay Hecht has been appointed attending neurologist to St. Elizabeth's Hospital, Chicago.

Southern Medical College Association.—This association held its annual meeting at Baltimore, Maryland, December 10, 1906, under the presidency of Dr. Christopher Tompkins of Richmond, Virginia. All of the medical colleges belonging to the association were represented except the Fort Worth Medical College and the Medical College of Alabama. The resignation of the University College of Medicine at Richmond, Virginia, was presented and accepted. The following colleges were elected to membership: Medical Department of Southwestern University, Dallas, Texas; Medical Department of the University of Georgia, Augusta; Medical Department of Epworth University, Oklahoma City, Oklahoma. The following applications for membership were filed, to be acted on a year hence: College of Physicians and Surgeons, Atlanta; Mississippi Medical College, Meridian, Mississippi, and the Medical Department of the University of Arkansas, Little Rock. An amendment to the constitution looking to the making of the minimum preliminary educational requirement, a high school diploma, or its equivalent, was carried over until the next meeting. The President, in his address, advocated more rigid preliminary educational requirements. Hereafter the association will meet in connection with the Southern Medical Association in October of each year. Dr. Christopher Tompkins was reelected President; Dr. G. C. Savage of Nashville was reelected Treasurer and Secretary, and Dr. James B. Bullitt, Jr., of Oxford, Miss., First Vice-President.

American Laryngological, Rhinological, and Otological Society.—The annual meeting of the Eastern Section of this society will be held at Providence, Rhode Island, January 5, 1907. The Chairman is Dr. Frank B. Sprague, 27 Stewart street, Providence, Rhode Island.

Claiborne County (Miss.) Medical Association.—At its annual meeting, recently held, this organization elected the following officers: *President,* Dr. J. F. McCaleb; *Vice-President,* Dr. E. D. Barron; *Secretary,* Dr. George W. Acker.

Orleans Parish Medical Society.—The newly-elected officers of this society are: *President,* Dr. John J. Archinard; *First Vice-President,* Dr. John B. Elliott, Jr.; *Second Vice-President,* Dr. C. J. Landfried; *Third Vice-President,* Dr. John Laurans; *Secretary,* Dr. Amedee Granger (reelected); *Treasurer,* Dr. E. O. Tranan.

Graften County (N. H.) Medical Society.—The following officers have been elected by this society to serve for the ensuing year: *President,* Dr. F. Von Tobel, Lebanon; *Vice-President,* Dr. G. W. McGregor, Littleton; *Secretary* and *Treasurer,* Dr. G. A. Weaver, Warren.

Gregg County (Texas) Medical Association.—This society elected the following as officers at its recent meeting, held in Longview: *President,* Dr. H. M. Lawrence; *Vice-President,* Dr. M. B. Feemster; *Secretary and Treasurer,* Dr. E. E. Terry.

Jackson County (Mich.) Medical Society.—Officers were elected as follows at the annual meeting of this society, held at Jackson, on December 6: *President,* Dr. Martha C. Strong; *Vice-President,* Dr. F. W. Rogers; *Secretary,* Dr. T. A. Longford; *Treasurer,* Dr. E. A. Martindale.

Lauderdale County (Miss.) Medical Society.—At a meeting held December 7 officers for this society were elected as follows: *President,* Dr. H. F. Tatum; *Vice-President,* Dr. W. J. Anderson; *Secretary-Treasurer,* Dr. J. Bennett.

Massachusetts Surgical and Gynecological Society.—The thirtieth annual meeting of this organization was held at Boston on December 12, and the following were elected as officers: *President,* Dr. Frank A. Gardner of Salem; *Vice-Presidents,* Dr. Amanda C. Bray of Worcester and Dr. A. Howard Powers of Boston; *General Secretary,* Dr. Frederick W. Colburn of Boston; *Associate Secretary,* Dr. Herbert D. Boyd of Boston; *Treasurer,* Dr. Isabel G. Webster of Wellesley.

Macon (Ga.) Medical Society.—At the recent meeting of this society the following officers were elected: *President,* Dr. James T. Ross; *Vice-President,* Dr. G. P. Gostin; *Secretary,* Dr. J. C. McAfee; *Treasurer,* Dr. R. B. Barron.

Portland (Me.) Medical Club.—The election of officers, held at the recent annual meeting of this society, resulted as follows: *President,* Dr. C. R. Burr; *First Vice-President,* Dr. E. G. Abbott; *Second Vice-President,* Dr. F. Y. Gilbert; *Secretary-Treasurer,* Dr. W. W. Robinson.

Obituary Notes.—Dr. William W. Purssell of Whitehouse Station, N. J., died on December 8. He

was a graduate of the Normal Institute at Carversville and received his medical education at Jefferson Medical College in Philadelphia. He had practised in Whitehouse for thirty-two years, and was well known throughout Hunterdon County.

Dr. Alfred Wilde Gardner of this city died on December 10 of sepsis following an infection received while performing an operation. Dr. Gardner was graduated from the College of Physicians and Surgeons in 1890 and during the summers was resident physician at Sharon Springs.

Dr. William James Herdman, professor of nervous diseases and electrotherapeutics in the University of Michigan, died on December 14 at the age of fifty-eight years in a private sanatorium in Baltimore, where he had gone to have an operation performed.

Dr. George H. Sholters of Washington, D. C., died on December 14 at the age of fifty-eight years. He was born in Burlington, Vt., and after receiving a legal education and practising law for some years in Albany, was graduated in medicine and began practice in Washington. Some years ago he was made examiner in the Patent Office.

Dr. Ira P. Coller of Adrian, Mich., died on December 9 at the age of forty-one years. He was graduated from the Michigan College of Medicine in 1903.

Dr. Charles W. Bowker of Bernhardston, Mass., died on December 10 at the age of eighty-two years. He was graduated from the Berkshire Medical College at Pittsfield in 1854, and after practising in several Vermont and Massachusetts towns became a contract surgeon in the United States Army. He began practice in Bernhardston in 1865 and had remained there ever since.

Dr. S. W. Turner of Chester, Conn., died on December 9 at the age of eighty-five years. He was a graduate of Yale University in the class of 1842 and received his medical degree from the Yale Medical School four years later. He had held many professional and official positions.

Dr. C. C. Bradley of Manchester, Ia., died on December 8 at the age of sixty-four years. He was born in Alleghany County, New York, and was graduated from the Bellevue Hospital Medical College in the class of 1867.

Dr. Hiram R. Mills of Port Huron, Mich., died of heart disease on November 29 at the age of sixty-nine years. He was born in Salina, Mich., and received his medical education in the University of Michigan, graduating in 1866. He was for three years in the regular army and held the position of post-surgeon at Mackinac. In 1871 he came to Port Huron and practised until about five years ago, when he was made surgeon at the Soldiers' Home. During his residence in Port Huron Dr. Mills served as pension surgeon, marine surgeon, supervising inspector of the immigrant service, and health officer.

Dr. Alonzo Garcelon of Lewiston, Me., died from accidental asphyxiation by gas on December 8 at the age of ninety-three years. He was born in Lewiston and entered Bowdoin College in 1832. His medical education was obtained at the Dartmouth Medical School and the Medical College of Ohio at Cincinnati. In addition to his eminence in practice, Dr. Garcelon was a prominent figure in public life, and had been president of the American Medical Association, member of the State Legislature and Senate, surgeon-general of the State during the Civil War, and Governor of the State.

Dr. Joseph D. Nash of Philadelphia died of apoplexy on December 10 at the age of seventy years. He was born in Plumstead, Bucks County, and was graduated from the Jefferson Medical College in the class of 1865. He was secretary of the Philadelphia County Medical Society.

Dr. Thomas F. McCleary of Brooklyn died on December 15 at the age of thirty-six years. He was graduated from the Long Island Hospital Medical College in 1893, and was visiting surgeon to the Bushwick, Eastern District, and Williamsburg hospitals.

Dr. J. H. Keever of Oak Cliff, Texas, died on December 8 of cerebral hemorrhage. Dr. Keever was born in Catawba County, North Carolina, in 1869, and came to Texas when about twenty years of age. He was a graduate of the Baltimore Medical College and took a post-graduate course in the College of Physicians and Surgeons in this city.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

EVOLUTION OF STREPTOCOCCI—CLINICAL STUDY—GENERAL MEDICAL COUNCIL—NEW LORD MAYOR'S HOME FOR CRIPPLES—HOSPITAL SUNDAY FUND—HOSPITALS; MANCHESTER FOR SKIN, MIDDLESEX, CHELSEA—OBITUARY.

London, November 30, 1906.

The Horace Dobell lecture for this year was delivered on the 15th inst., by Dr. F. W. Andrewes of St. Bartholomew's Hospital, and in it he endeavored to lay down the history of the evolution of the streptococci. Starting with the assertion that "no biologist nowadays believes in the absolute fixity of species," he pointed out that there are three modes of life among bacteria, viz., those feeding (a) on minerals, (b) on dead organic matter, (c) on living organic matter, these last being true parasites. There are in class (a) the nitrifying bacteria at this day, but most of these organisms have progressed to (b), and some have specialized as far as (c). The streptococci have cut themselves adrift from mineral food and grow best under such saprophytic conditions as are found in the alimentary canal of man and animals. Dr. Andrewes had found them far more abundant there than *Bacillus coli*. Inasmuch as bacteria are of far greater antiquity than animals, these streptococci or their antecedent forms must have waited for ages for the chance of being swallowed, the fortunate individuals at once adapting themselves to their new environment. Many varieties remain at this stage, but some have advanced to the parasitic stage, and are pathogenic. Dr. Andrewes here described the means of the body for dealing with these intruders, phagocytosis, opsonins, etc. He infers that certain common streptococci have developed into weak facultative parasites, but are not yet able to attack healthy tissues. They cannot produce acute suppuration, but they can and do multiply in the blood of the dying, and further can establish themselves in weak spots in the body, where moisture is lowered and cause a chronic inflammation. The final stage of the streptococci shows them with active aggressive powers (*e.g.* the *S. pyogenes* and pneumococcus) against the defences of the body. These properties, Dr. Andrewes said, must be due to natural selection, and he gave a picturesque account of the struggle for existence between them and the defensive mechanisms. But he admitted a difficulty: it is not a question of their taking an unoccupied nook. Pathogenic bacteria do not permanently establish themselves; they succeed only for a time, and the fight ends either by the extermination of the invaders or the death of the host. If they fail they are not driven back, but perish—every one. So if they succeed it is only a useless conquest, for they are just as surely exterminated in the orgy of putrefactive processes which follows the death of the body. This difficulty, Dr. Andrewes held, was apparent rather than real, and he calls in the millions of years for the body to perfect its defensive mechanisms against bacteria, and says it is inconceivable that the first assaults of these organisms occurred when the defences were fully developed, for these last must have been evolved in response to the assaults. He added that these views hold good for all pathogenic organisms. An infective disease is therefore a battle between the two opposing forces, which ends now in the triumph of one side, now of the other. The business of the doctor is to turn the scale, if he may, against the invader. It is not very long since the efforts of the body were mistaken for the essence of the disease and war waged against fever and inflammation. We have begun

to realize that the reactions may be on our side and the day has begun to dawn when we may do more than follow the expectant treatment. We can, said the lecturer, "at times directly assist the patient in the development of antibodies against the persons or the poisons of his enemies. We can even present him with ready-made antibodies where he has not time or power to elaborate them for himself."

In his second Fitzpatrick lecture Dr. Norman Moore gave prominence to the study of clinical medicine in Ireland. The object of his lectures was, as he stated, to make clear the growth of clinical study in the British Islands from its commencement to the time when it was fully established as an essential part of the work of all who pursue any part of medicine. Yet, having first described the attainments of Sir T. Molyneux, the first great figure in medicine in Ireland, he promised to consider the earlier state of medical knowledge there and diverged into the history of learning in that country, including the medical branch. Here the lecturer gave many interesting particulars which will be read when the lectures appear, as by the endowment they must do, in book form, and will strongly appeal to all who appreciate such historico-literary learning. Irish medieval literature, beginning with the introduction of writing, lasted as long as books were circulated in manuscript only. The language was never, like Anglo-Saxon, permeated by other tongues so as to lose its identity, and it gives us now a preserved specimen of a literature unaffected by the printing press.

The early Irish physicians had brethren in Wales and Scotland, and of these the lecturer also gave particulars. But I pass on to Edinburgh University, which derived the medicine which made it famous from Holland. Its systematic teaching began with the first Monro, who studied under Boerhaave in 1718, and afterward lectured for thirty-nine years. He edited in 1732 the first volume of "Medical Essays and Observations Published by a Society in Edinburgh." Alston, Rutherford, Sinclair, Plummer, and other Edinburgh physicians were pupils of Boerhaave, whose aphorisms were published in 1708, to hear whom men flocked to Leyden from all parts.

Though the followers of the Leyden school seemed to be more on the lookout for something startling than those of Glisson and Sydenham, who were content to mark and describe every circumstance of a case, yet the effect of the teaching of Boerhaave and of the Edinburgh University, which was derived from him, was to increase the enthusiasm for clinical observation. Clinical methods have since been elaborated and improved, but, concludes the lecturer, it is for the physicians of the present day to see that the precise observation of disease at the bedside is never displaced in teaching or practice by other studies.

The General Medical Council began its winter session on Tuesday, when Dr. MacAlister delivered another presidential address. In the course of it he mentioned that when in Canada at the meeting of the British Medical Association he was able to meet ministers of the crown and other influential persons interested in medical reciprocity between Canada and the mother country. He had reason to believe that explanations he had given in reply to inquiries had been serviceable in removing certain misconceptions. He had since heard that in one province active steps were now being taken to bring about mutual recognition of medical qualifications.

The Council is still sitting, but a good deal of work has been got over, and it is hoped the present session may be a short one. A proposal to obtain a report on the advisability of dispensing with systematic lectures in the schools did not receive much support. A motion to ask the examination committee for a report on the inclusion of clinical and practical work in midwifery and gynecology at qualifying examinations was adopted. Alterations in the standing orders were considered and part of the penal work has been concluded.

The new Lord Mayor, Sir William Treloar, has determined to signalize his year of office by establishing an institution for the relief of cripples. He appeals for £60,000 for the purpose. The King and Queen have each sent £100, and the success of the scheme seems assured. Sir William and Lady Treloar have long been known as deeply interested in cripples. For some twenty-seven years they have obtained subscriptions for sending Christmas hampers to crippled poor children.

The Council of the Hospital Sunday Fund met yesterday, the Lord Mayor presiding. There was, it was stated, a falling off in the church collections of above £4,000, compared with the previous year. The late Mr. George Herring's donation was £11,000. One of his executors reported that the fund would benefit under the will by a sum of about £600,000. In the event of the "back-to-the-land" scheme of the Salvation Army failing, there would be a further sum of £60,000, but it was hoped this would not occur, as Mr. Herring was deeply interested in its success.

On Wednesday, Sir Thomas Barlow, speaking at the opening of the Manchester New Hospital for Skin Diseases, commended the committee for fitting up a room for research which he held was the very best way to put down quackery, so rampant in connection with skin diseases. The English people, he declared, though very benevolent, had not yet learned to give money for research as the people across the Atlantic had. Practical as the English were, they had not yet got hold of the importance of research in connection with the study of disease.

At a meeting of governors of the Middlesex Hospital yesterday it was said that to meet current expenses the committee had been obliged to borrow. A donation of £2,500 had been received and a legacy of £5,000 for the cancer fund had been announced. Nevertheless, the needs were urgent. The special committee appointed last year had been able to discover methods of reducing expenses by nearly £2,000. The researches in the cancer laboratories were being carried on with unwearied vigor.

The governors of the Chelsea Hospital for Women yesterday resolved on an alteration in their by-laws whereby all the members of the medical staff, whether physicians or surgeons, will in future be termed surgeons. It was suggested that other institutions would probably follow suit in recognizing to how great an extent gynecology has become surgical. During the year the hospital had expended £1,600 in alterations and repairs to render its sanitary condition perfect.

Dr. Symes Thompson, consulting physician to the Consumption Hospital, Brompton, and Gresham professor of medicine, died on the 24th inst., aged 69. He was a son of the late Dr. Theophilus Thompson, F.R.S., whose lectures on consumption formed an authoritative work in his day. Dr. Symes Thompson took M.D., London., 1860; M.R.C.P., 1862, and was elected to the Fellowship in 1868. Since 1875 he has given the Gresham lectures, but though fluent and possessed of a good voice, he could not do more than fulfill the duty of the endowment which has become a sinecure. He was a genial, courteous, and upright colleague.

Dr. Andriezen has died at the early age of 36. He had achieved so high a reputation as a neuropathologist and psychologist that it seems surprising he was not older. As a student he carried off many distinctions, including the Liston gold medal, for research in pathology. He took first class on honors at the University of London and worked strenuously at scientific research ever since. He had seen asylum work, and of late helped in the cancer laboratories of the Middlesex Hospital. His contributions to biology, neurology, and pathology are too numerous to mention, and you must know many of them.

Dr. E. B. Ferguson, surgeon of the Cheltenham Hospital, died on Tuesday in a tragically sudden manner. He was in the midst of an operation for hernia and had resected a long length of gangrenous intestine. He was just tying the mesentery when he fell dead in the presence of the house surgeons assisting him. In 1901 he was president of the British Medical Association, meeting at Cheltenham, and greatly contributed to its success. He had suffered for some time from heart disease.

Mr. Everett Norton, anesthetist for many years to the Middlesex hospital and greatly esteemed by the staff, died suddenly on the 17th inst. He slipped and fell down as he was leaving a patient's house, wounding his face, which bled profusely. He was taken home, and went to bed, but soon collapsed and died. He had suffered from heart disease, but had seemed to improve of late.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

TYPES OF DYSENTERY BACILLI—LATENCY AND RECURRENCE IN MALARIA—CONGENITAL ABSENCE OF THE VERMIFORM APPENDIX—BERIBERI—CHOLERA—ATTACK ON THE HEALTH BOARD BY THE NATIVE PRESS—PERSONAL.

MANILA, October 15, 1906.

THE regular monthly meeting of the Manila Medical Society was held October 1, 1906, at 8:30 P. M., at the St. Paul's Hospital. A paper entitled "The Types of the Bacilli of the Dysentery Group," prepared by Dr. Ohno, a Japanese physician of this city, was read by the secretary. The author was unable to be present, owing to an attack of cholera. The opinions expressed in the paper agreed very closely with those advocated by Shiga. The next paper, entitled "The Relation of Intracorpuscular Conjugation in the Plasmodia of Malaria to Latency and Recurrence," was read by Captain and Assistant Surgeon

Charles F. Craig. The author reaffirmed the views previously expressed in his published articles.

Drs. H. T. Marshall and Ralph T. Edwards, pathologists of the Bureau of Science, presented a specimen of an intestine which showed a congenital absence of the vermiform appendix. Dr. Marshall stated that literature revealed only six cases of this kind, and that four of these were not very well authenticated, thereby emphasizing particularly the rarity of the specimen. In Dr. Marshall's case every precaution was taken to demonstrate conclusively that no rudimentary appendix existed. Careful microscopical sections were made, the examination of which showed that no glandular or other structure characteristic of the appendix could be demonstrated. Drawings and photographs were also exhibited, which seemed to demonstrate that no appendix existed.

Dr. J. W. Madara, Physician-in-Charge of the Iwahig Penal Settlement on the Island of Palawan, reports that there has been much beriberi among the prisoners at that settlement, and that several buildings seem to have been infected. It was only after removing the prisoners to other quarters that the epidemic of beriberi was brought under control, thus adding additional evidence to the theory held by a number of distinguished writers, of house infection. The epidemic of beriberi which occurred among the lepers at the Culion Leper Colony has practically disappeared. In this connection it is interesting to note that during the first month of its existence it was confined to those persons who were brought from Cebu, and only after it had been present among them for a month or more, were cases noted among the lepers at Culion who came from other islands.

The cholera situation in Luzon is improving very rapidly. For the first half of October there have been in Luzon only 107 cases and 73 deaths, as against 185 cases with 145 deaths for the preceding two weeks. In Manila there were 15 cases with 13 deaths, as against 30 cases with 23 deaths for the last two weeks of September. In Iloilo the situation is not so encouraging. While there has been no great increase in the number of cases, yet more towns are gradually becoming infected. For the two weeks covered by this report there were 493 cases and 391 deaths. The lack of better success in combating the epidemic in that province is attributed by the Bureau of Health to the fact that many of the native physicians and other influential persons persist in stating that the disease is cholera nostras and not true cholera. These statements are made in spite of the fact that a short time ago, in a town of 2,000 inhabitants, more than 80 people died in the course of a few days.

The quarantine which has been imposed upon vessels leaving the province of Iloilo has given rise to considerable friction, and much dissatisfaction on the part of residents, but in view of the fact that it has proven entirely effective, so far as the spread of the disease by water is concerned, the health officials have not felt warranted in lifting the same.

During the past two weeks the native press of the city of Manila has been making severe attacks upon the Bureau of Health, it being claimed that the efforts made in the eradication of cholera had proven a most lamentable failure, and that Filipino physicians should be placed in charge, who would demonstrate their ability to handle a situation of this kind. It is alleged that the origin of these attacks may be ascribed to an alleged refusal of the Bureau of Health to appoint a number of native physicians to positions formerly held by Americans. The justice of the attacks and the ground upon which they rest may well be judged from the fact that there are no Filipino physicians upon the Civil Service eligible list, and from the statements made by the press representatives, to the effect that it would be much better to let cholera sweep unchecked and unhindered through the islands and have it over with, than continually to block its path with sanitary measures. The fact seems to have been lost sight of, however, that only dozens have died during the present epidemic, where hundreds and even thousands died in the previous epidemics, and that the disturbance to commerce and to business has been reduced to a minimum, and if it were not for a sensational press the average inhabitant would scarcely know that cholera was present. These ungrounded attacks only have the effect of giving expression to the opposition which seems to exist inherently in the Malay, to sanitary measures, and thereby the cause of public health is retarded and the work of the Bureau of Health made correspondingly difficult. Owing to the long-continued strain undergone by the medical and nursing staff at the San Lazaro Cholera Hospital, due to the great amount of continuous work caused by the cholera sick, the nurses particularly have become exhausted, so that it was almost imperative to provide means whereby rest and recreation might be had. In view of the fact that there were only a few patients left in the San Lazaro Cholera Hospital, it was deemed advisable to close the same for a while, at least, and have the few remaining patients treated at the Santiago Hospital of the city of Manila.

Major and Surgeon Edgar A. Mearns of the United States Army, who has been Chief Surgeon of the Department of Mindanao, has been relieved from duty in the Philippines and will proceed to the United States by first available transportation. Major Mearns is credited with being one of the leading naturalists in the army, and during his stay in the Philippines he has found a number of new specimens of rats and other animals which have heretofore not been described.

Dr. Thomas R. Marshall, the Chief of the San Lazaro Hospitals Division of the Bureau of Health, who has been engaged in health work with the Civil Government for the past four years, has resigned and returned to the United States, where he expects to engage in the practice of medicine at Richmond, Va.

Progress of Medical Science.

New York Medical Journal, December 8, 1906.

Relaxation of the Sacroiliac Synchondroses.—Four such cases are detailed by J. Dunlop, who believes that this injury results from accidents far more often than is generally recognized, and that the cases due to trauma are among the serious ones of the lesion. While the etiological factors may be numerous, the symptoms present a distinct type. Backache is nearly always the complaint. The usual history, especially, seems to date back to a definite injury, since which time there has been difficulty in all motions or postures requiring a movement of the sacral region of the spine, such as sitting, getting up and down, stooping, or even lying, especially when a soft bed is used and a certain amount of anterior bending of the spine is produced, and a relaxation of the lumbar curve causing a strain on the sacroiliac ligaments. On inspection there are found in varying combinations sacral prominence, rigidity of spinal muscles, lateral spinal curvature, obliteration of the normal spinal curve, and swelling due to the distention of the joint with fluid. On palpation there are noted tenderness to pressure over the joint and mobility. Differential diagnosis is called for from osteoarthritic spine, chronic sciatica, neurasthenic spine, lumbago, muscular rheumatism, and typhoid spine. Treatment consists in the use of a support which will properly hold the synchondroses in place.

Psychical and Medical Treatment of Conditions Underlying Gastric Peptic Ulcer.—According to M. R. Barker, gastric peptic ulcer is the culmination of a series of morbid events or underlying conditions, the scientific treatment for which would prevent ulcer formation. Worry, anxiety, heredity, dietetic errors, habits, etc., may, any or all of them, lead to a neurosis. This causes hyperchlorhydria, and this in turn the ulcer. Our starting point, then, is to prevent the neurosis. Care of the growing child should eliminate the factors which so often conduce to this result. A special system of psychological teaching may be instituted in our schools, so that the viciousness of morbid mental processes is impressed on the pupils, and they are taught how to grapple with the problems of school life, and after this in life's work, without apprehension; how the greatest successes are to be attained in life's struggle, with worry eliminated; that if they are to attain to their highest capabilities they must rise to a plane higher than that dominated by these morbid conditions. They should be taught to become mental masters of these morbid conditions, and never become their prey. Present pedagogical methods foster, promote, and develop these morbid instincts. Children are constantly overworked. If the hyperchlorhydria becomes established the same course of treatment should be persisted in, in changing morbid mental conditions change in environment will often work wonders. Some cases of hyperchlorhydria arise from overeating during periods of comparative relaxation, though the quantity of food taken may be all right for the strenuous periods. In some there is a hyperesthesia of the gastric mucosa. In some the condition arises from the abuse of condiments and alcohol. In all cases of gastric ulcer, however, one thing is always indicated, and that is rest. Whatever else may be done, this is the most important. This is secured by rectal feeding, and very little if any stomach alimentation for a week or two in aggravated cases. The patient should remain in bed during all this time. In conjunction with this any of the methods detailed may be adopted which in the judgment of the internist best suits his case.

Multiple Chancres.—After a reference to various authors who have written on this subject, F. C. Knowles

reports the case of a man, aged twenty-eight, with five undoubted penile chancres. The patient stated that two of the lesions appeared synchronously, the third in another week, and the remaining two in two weeks more. As far as could be learned, the period of primary incubation was about a month. The subsequent appearance of rash and the coincident adenopathy rendered the diagnosis certain.

Pyelonephritis.—A general paper on this subject is presented by E. Fremont-Smith, who quotes freely from various authors. He refers especially to the work of Lehr and Young, who have collected from literature reports of four cases, showing pure culture of the typhoid bacillus, and who report two cases in which the kidney manifestations were quite latent for some years after the fever had run its course. In the first of these two cases pyuria was noted at the beginning of an attack of typhoid in 1893. In 1898 the bladder was aspirated, and pure typhoid culture found in the urine, and it was then considered solely a bladder infection. In 1903, ten years from the original fever, the patient by accident discovered a mass in the right side. Up to this time his only symptoms had been frequent ill-defined fevers and lassitude. The urine was acid, and urinary symptoms were wanting. Nephrotomy revealed a large pus kidney, with pure typhoid cultures and a calculus, in the center of which was discovered the proteus vulgaris in pure culture. Thus the original infection of the proteus, which was responsible for the stone, had died out and been supplanted, on a favorable soil, by the typhoid bacillus during the fever attack. Manifestly the proteus developed stone, preceded the attack of typhoid. Recovery followed a final nephrectomy. The second case reported exhibited no physical signs or symptoms of kidney infection barring general low health for years, following an attack of typhoid fever, until six months before he entered the hospital, when he complained of slight irritation after urination, without unusual frequency, and of nausea, and vomiting. The urine was slightly acid and purulent. Death supervened before operation could be done, but autopsy revealed pure culture of typhoid bacilli from the pus of the kidney and a calculus, in the center of which was a nest of typhoid bacilli.

Journal of the American Medical Association, December 15, 1906.

Myasthenia Gravis.—Three cases are reported by C. E. Riggs, illustrating the bulbar and the ophthalmoplegic types of the disease. Although there were antecedent pathological conditions in two of the cases, Riggs considers the etiology of the disorder as still unknown. In two of his cases there was external ophthalmoplegia, and the "nasal smile," noted by Gowers, was marked in all three. The myasthenic reaction—the tetanizing of the muscle by faradism—was present in all three cases, and while not pathognomonic, its occurrence is significant and valuable for diagnosis. The greatest danger in diagnosis is that of mistaking the condition for hysteria, especially if the color reversal and other symptoms of hysteria are present, as in a case reported by Burr. Riggs thinks that the condition is best explained by assuming a toxin in the blood affecting the lower motor neuron, and refers to Taylor's suggestion, based on a not infrequent pathological finding, that this toxin is due to a diseased thymus or to an abnormal lymphoid tissue infiltration throughout the body and muscles, and that in myasthenia we are dealing with a disorder in a certain sense the converse of myxedema. Treatment has been usually ineffective, but in one of his cases, under his care for months, he found the most efficient agents to be strychnia, gentle massage, and galvanism.

Treatment of Nephritis.—F. M. Johnson is an advocate of the more extended use of lavage of the renal pelvis as an addition to the usual medication in the treatment of certain types of kidney disease. Lithemia and oxaluria, resistant to other methods, will often yield to lavage of the kidneys with warm boracic-acid solution; in pyelitis he advises thorough lavage and local medication before attempting a major operation, and in the earlier and milder stages of subacute parenchymatous nephritis and of chronic catarrhal nephritis, the added soothing and healing influence of lavage, given with due care and attention, seems to have a beneficial effect. Cool distilled water is best for the preliminary washing of the bladder before using the cystoscope, and for the kidney, whatever solution is employed, it should be warm and, in the beginning, mild in strength. Small quantities are better than too large.

The Treatment of Asthma.—De Lancey Rochester believes that most cases of asthma are due to neglect of catarrhal affections of the upper air passages in early life, producing pathological hypertrophies of the turbinates, of Luschka's tonsil, and of the faucial tonsils. These conditions tend to bring about a condition of pulmonary emphysema with imperfect oxygenation, resulting in the autointoxication, revealing itself in the asthma. Cases developing later in life are due to imperfect metabolism and autointoxication, the causes in such cases being the habits of life of the individual, among which Rochester includes overeating, constipation, sedentary life, and insufficient use of the lungs in an imperfectly oxygenated atmosphere. The chief evidences of the autointoxication are the degree of acidity of the urine and the degree of indicanuria present. He has never had a case of asthma under observation in which there was not, when first seen, a strongly acid urine which deposited on centrifugalization urates and uric acid or calcium oxalate, and showed a pronounced reaction for indoxyl sulphate. The treatment should consist mainly in proper attention to the upper air passages and nutrition in early life. If seen later, much can be done to prevent recurrence of the attacks by correcting obstructions in the upper air passages and other sources of irritation of the nervous system; but, above all, by so regulating the intake of food and stimulating the elimination of waste products that a proper metabolic balance can be maintained.

Malarial Hemoglobinuria.—Fourteen cases are reported and discussed in detail by W. V. Brem. The general results of the study of these cases are summarized, in substance, as follows: 1. A febrile affection resembling the estivoautumnal type of malarial fever was the only etiological factor discoverable. Previous attacks of malaria seemed to furnish a favorable ground. Quinine was not an etiological factor, either predisposing or exciting. The evidence favors the estivoautumnal parasite and not a special organism as the cause. 2. The symptoms and signs may be very mild and the grave condition be revealed only by the urinary examination. A history of dark or bloody urine can almost invariably be obtained. 3. The degree of fever bears no relation to the hemoglobinuria or albuminuria. A post-hemoglobinuric fever of a peculiar type occurred in four cases; it does not yield to quinine. 4. Blood examinations show that the primary event is destruction of the red blood corpuscles, with hemoglobinemia and subsequent hemoglobinuria. Anemia is exceedingly rapid, as is likewise recovery. 5. In well-defined cases particularly, an absolute diagnosis can be made by macroscopic examination of the urine, combined with the test for albumin. In border-line cases the hemoglobin test is necessary for an absolute diagnosis, but a probable diagnosis can be made from a brownish urine with 20 per cent. albumin or more. 6. The mortality was two in fourteen cases (14.3 per cent.). 7. A correct prognosis in individual cases is very difficult. 8. Intramuscular injections of quinine seem to act specifically. The best method is thought to be the injection of 10 grains every four hours for the first forty-eight hours (15 grains may be given for the first three or four doses), and then smaller doses may be given by the mouth unless vomiting prevents. Quinine bihydrochloride in an excess of acid is more suitable than quinine bimuriate with urea for intramuscular injection.

Multiple Fibrosarcoma of Tongue Treated With Trypsin.—F. H. Wiggin reports a case in which a patient with fibrosarcoma of the tongue was treated with trypsin, pancreatic extract, and amylopsin. A capsule containing pancreatic extract was given an hour before each meal. The tumor apparently ceased to increase in size and remained stationary until the injections were given daily, and the dosage increased to 15 minims. The dosage was gradually increased to 40 minims daily, and then the patient began to complain of headache and constipation, and looked anemic. Treatment was discontinued for a time, and then ampoules of trypsin, pancreatin, and amylopsin were given. For a time this seemed to bring about a decided improvement, but as the weather was very hot and trying at this time, the treatment was discontinued at the patient's request, and soon after she passed from observation. There were some differences of opinion among pathologists regarding the malignancy of the tumor.

Bradycardia in Appendicitis.—M. Kahn calls attention to slow pulse as a symptom of latent or incipient gangrene in appendicitis. How often it occurs cannot be said with present data, but it has been so frequently met in his series of cases that in the last six he made the diagnosis before operation on this symptom alone. It is true that we sometimes see cases with tachycardia, but he cannot recall encountering bradycardia in a case of appendicitis that did not present gangrene. Of course, the normal pulse of the individual must be known to avoid mistake. He attributes the symptom to some ptomain absorption acting on the cardiac centers or ganglia, such as is not infrequently seen in jaundice and chronic digestive disturbances. It is not akin to the slow pulse of convalescence from some acute fevers, which is probably due to failure of reactive power or inanition. The importance of the symptom, if it is found to be generally present, can hardly be overestimated.

The Lancet, December 1, 1906.

Rupture of the Trachea with Complete Detachment of the Left Bronchus Without External Injury.—The patient of J. L. Barford was a boy of four years, who was

run over by a heavy wagon, brought to the hospital in twenty-five minutes, and who died twenty minutes after admission. During this period the symptoms were dyspnea, intermittent cyanosis, affecting chiefly the head, neck and arms, the other bodily areas being of good color, hemoptysis (arterial), restlessness, and surgical emphysema. He died in a condition of extreme cyanosis and heart failure. On autopsy a mass of dark clot was found around the great vessels at the root of the heart, and, the heart having been removed, the left bronchus was found to be completely detached from the trachea at the point of bifurcation of the latter. The tongue, larynx, and trachea having been separated from above downwards and removed with the lungs, a rupture of the trachea was found extending from the point of bifurcation for fully an inch up the posterior surface along the left extremities of the tracheal rings, which themselves were uninjured. The detached left bronchus was also torn down its length posteriorly. The esophagus and spine showed no injury. The stomach was very full of food and altered blood. Externally the chest showed no changes, except a slight persistence of the emphysema toward the neck. The author notes that the causes of death are of interest. The dyspnea was probably due to combined causes, viz., (1) the partial nonapposition of the trachea and left bronchus, the left lung being thus thrown partly out of action; (2) blockage of the bronchi and bronchioles of both lungs with blood; (3) impaired action of the left side of the chest owing to fractured ribs; (4) deficient expansion of the left lung from bruising and consolidation with blood, and (5) impaired action of the diaphragm from acute overdistention of the stomach, vomiting of food, and swallowed blood being possibly prevented by impairment of the nervous mechanism. The cyanosis was peculiar in affecting chiefly the head and upper extremities, indicating obstruction to the superior vena cava rather than a more general derangement of circulatory or respiratory functions. Its intermittent character could be explained by the fact that the child in his efforts at times succeeded in bringing the bronchus and trachea into better apposition again. The fact that the blood escaping from the mouth was brightly arterial, even during considerable cyanosis, seemed to indicate some injury to the lower air passages. The restlessness, combined with the cyanosis and crying out, resembled very markedly the signs of pulmonary thrombosis, and these features were likely enough due to pressure of blood (and air) on the thin-walled pulmonary artery. The author also suggests that the escape of air from the trachea may have led to its compression from without by the accumulation of the air within the faucial sheath surrounding the trachea and esophagus. Another possible factor was pressure to, or injury of the vagi and cardiac plexuses.

Phlyctenular Ophthalmia.—J. B. Nias and L. Paton recall the fact that this form of ophthalmia has been referred to infarctions of dead or attenuated tubercle bacilli, and have recently tested the opsonic power of the blood against the tubercle bacillus in nearly 200 specimens taken from fifty different patients. They find that the blood of such patients behaved in a manner altogether typical of a definite tuberculous infection; that is to say, its activity in opsonic action on the *B. tuberculosus* fluctuated in a marked and definite manner above and below the normal, according to the progress of the case. They note that the blood of a patient suffering from genuine phlyctenular ophthalmia is generally found to be markedly deficient in opsonic power to the tubercle bacillus, but not to other bacteria, such as the staphylococcus, at the outset of the case, but if the patient be adequately treated (without recourse to tuberculin, be it understood) the opsonic index rapidly rises and reaches a maximum coincidently with the healing of the ulcers. It then begins to fall rapidly, and in a few days is far below the normal, as if from exhaustion of the mechanism. At this low figure it will remain if the observations be continued for an indefinite time, and if, as so often occurs, a relapse takes place the same sequence of phenomena will be reproduced. In a minority of cases, generally in older and more vigorous subjects, the opsonic index as regards the tubercle bacillus will be found to have risen already much above the normal. Here it will remain with temporary falls till healing occurs, and then take a terminal drop as in the former category. They have not yet met with a single exception to this course of phenomena in phlyctenular conjunctivitis. The authors present condensed histories of several types of cases, and earnestly request that the matter be taken up by other laboratory workers, so that their results may be either verified or disproved.

Lepra Tuberosa Treated with Chaulmoogra Oil.—One case is detailed at great length by J. A. Thompson. The patient was a soldier of fifty-eight years, whose disease came on in 1904. For some five months he was treated with gurjun oil, but without benefit, and the author states that this remedy has been valueless in his hands in this particular disease. At the end of the five months the chaulmoogra oil was begun in fifteen-minim doses three times daily. His daily dosage was increased, and in the course of the next few months varied from 150 to 315 minims. The immediate result was decidedly beneficial, though no claim is made that the case was actually cured. The details of the case must be consulted in the original paper.

British Medical Journal, December 1, 1906.

Intracellular Injections of Quinine in Malaria.—This method of administering quinine is commended by G. F. Darker. He prefers the use of a warm, dense solution of the hydrochloride (neutral salt), and gives the following directions for the preparation of the drug: (1) Place from 7 to 15 drops of water (by choice 10) in a test tube, and add 15 grains of quinine hydrochloride in crystals. (2) Shake the crystals down to the bottom of the tube; the water will be soaked up by the lower crystals. (3) Pass the tube through the flame of a spirit lamp until all the crystals have gradually dissolved; the fluid should then be made to boil. (4) The tube is now allowed to stand with a sterile cover placed over its mouth, until the end containing the fluid feels "just warm" to the hand (that is, 100° F.). The whole of the fluid should now be injected with an ordinary hypodermic syringe under aseptic precautions either into the cellular tissue under the skin of the anterior abdominal wall, in the case of a child able to walk, or into the deep tissues of the outer side of the thigh in the case of a baby in arms. The aperture made by the needle may be closed with a saturated solution of gum mastiche in rectified spirit, and a piece of lint applied. The quinine solidifies in the tissues, and is absorbed in about two months, during which time the child's general appearance greatly improves. When a number of children are being injected a sufficient quantity of the crystals can be kept in solution by placing the test tubes containing them in a water bath at 100° F. Care must be taken that the temperature of the fluid, even when in the syringe, has not fallen much below 100° F., otherwise solidification will take place; should this happen, warmth will again liquefy the crystals, which can then be washed out. The author notes that dense solutions of the acid salts of quinine such as are used for intramuscular injection in malignant malaria disorganize the tissues, and suggests that with malignant cases one grain should be injected in ten drops of water, and that several such injections should be made at the same time if necessary.

The Use of Digitalis in Valvular Disease of the Heart.—The uses of digitalis in valvular cardiac disease are summarized by E. H. Colbeck. He declares that digitalis should seldom, if ever, be given in cases of aortic regurgitation which have developed during or after middle life, since under these circumstances the ventricular wall is seldom sound. It should never be given in cases presenting evidence of myocardial degeneration or disease. If complete rest is obtained the drug is permissible, and even beneficial to a certain point in young and otherwise healthy adults who show signs of circulatory failure, more especially when aortic lesion is combined with mitral incompetence. The drug should be discontinued for some time before exercise is resumed. Neglect of this precaution is often followed by rapid ventricular failure and sudden death. In aortic stenosis the drug is contraindicated, as in this case the augmentation of the tonus of the heart and peripheral vessels (caused by the remedy) would merely increase the obstacle against which the left ventricle has to contend. In mitral incompetency the benefit of the remedy is universally admitted. On the left side of the heart, a rise of cardiac tonus resists the overfilling of the ventricle, which is the initial effort of the valvular insufficiency, while subsequent hypertrophy maintains the tonus of the ventricle and promotes the expulsion of its increased content. On the right side of the heart, a rise of tonus and consequential hypertrophy enable the right ventricle to cope with the increased resistance in the pulmonic circuit, and, by maintaining the blood pressure in the pulmonary veins and left auricle, it resists the reflux through the mitral opening and insures an adequate supply of blood to the left side of the heart. In uncomplicated cases of mitral stenosis the supply of blood to the systemic circulation tends to become increasingly restricted. A rise in the tonus of the left ventricle and peripheral vessels would still further diminish the charge of blood delivered to the aorta. No doubt the effect of increased cardiac tonus on the right side of the heart would be of benefit, provided the blood supply to the left ventricle could be thereby augmented. It may be inferred, therefore, that digitalis can be of no benefit to mitral stenosis in the absence of failure of the right ventricle, and in this event, so soon as the pulmonary blood pressure has been raised to the point at which the maximum charge of blood is delivered to the left ventricle, the drug would again act prejudicially.

Spirochetes in Hemoptysis.—A case of hemoptysis with numerous spirochetes in the sputa is reported by

C. W. Branch. His patient was a negro man of fifty-nine years, who was admitted to hospital with profuse hemoptysis. Examination showed a cavity below the right clavicle. Both legs showed tertiary scars. Malarial organisms were found in the blood. No tubercle bacilli were found in the first examination of the sputum, but numerous spirochetes were found which stained with methyl blue. No ova of parasites were found in the fresh sputa. On autopsy a collection of bloody pus was found under the sternum and a small abscess in the spleen. Smears from the pus under the sternum and the spleen abscess stained with Giemsa showed no spirochetes nor other organisms. In the blood from the cavity and in the bloody mucus from a small bronchus of the base no spirochetes were found. Squash preparations of tuberculous tissue from apex and base showed tubercle bacilli, but no spirochetes. Smears of the sputum taken before death were again examined, and tubercle bacilli were found. No spirochetes were found in the subclavicular cavity, in the lung tissues, or in the mucus from a small bronchus. From their position and associations in the sputum, as well as from their number, it is impossible that they were derived from the mouth. Their distribution in the sputum was very irregular, some smears containing none at all. While the author does not claim that the case proves anything but a saprophytic existence of the spirochetes in the large bronchi, he notes that their presence gives a peculiar viscous character to the sputa.

The Comparative Frequency of Impaired Nasal Respiration as an Antecedent to Pulmonary and Extrapulmonary Tuberculosis.—W. C. Rivers notes, with reference to this association, the following facts, his theses being based on a series of previously reported cases. (1) The condition in question presented itself nearly twice as frequently amongst some male phthisical cases as in a series of nontuberculous men, comparable in respect of age and of occupation and social condition. (2) Whereas several cases of nasal and of nasopharyngeal abnormality are known to be hereditary, a family history of pulmonary phthisis was found to be much more frequently given (except among those of very poor physique) by the subjects of impaired nasal respiration than by others; and this held good of nontuberculous as well as of phthisical males. It was therefore concluded that the initial channel of infection in many cases of pulmonary tubercle was almost certainly respiratory. In the foregoing cases, in the course of a comparison of phthisical with nontuberculous males, the percentages of the subjects of impaired nasal respiration were found to be respectively 56.7 and 30.8, and these proportions were found to be inherent fairly uniformly in each 40 or 50 cases examined. Thus it would not seem to be likely that mouth-breathing and "qualitative" impairment of nasal respiration are commoner in cases of extrapulmonary tuberculosis than in healthy people, who constituted the great majority of the nontuberculous males in question. It is concluded that there may exist, as between pulmonary and extrapulmonary tuberculosis, the following etiological point of differentiation—namely, that a certain mode of infection, a prerequisite of which is some abnormality of the upper respiratory tract, obtains more frequently in pulmonary than in extrapulmonary tubercle; and that perhaps, in the latter, it obtains very rarely, or never. As to the exact route of invasion, it must be remembered that there exists a body of evidence fairly conclusive as against direct respiratory infection of lung tissue. Conformably with the theory of intestinal origin, the common way in which the subject of impaired nasal respiration gets infected would seem to be by deposits left by unfiltered air in the mouth or nasopharynx or oropharynx reaching the alimentary tract. The anatomical relations of Waldeyer's ring and the mucous membranes to the lymphatic system may also be invoked.

Berliner klinische Wochenschrift, November 19 and 26, 1906.

Ozena as a Contagious Disease.—Lermoyez believes that ozena is a contagious disease, and in order to make his point he indicates a number of particulars in which the condition may be compared to syphilis and to gonorrhea in its clinical course. He also cites a number of instances that have come under his observation in which children have contracted the disease from each other, or from an infected mother or nurse, and married people have acquired it from a diseased partner. Apparently the intimate contact of constant living together is necessary for the infection to be transmitted, but Lermoyez believes that enough cases are on record in which ozena has developed as a consequence of continued association with another person suffering from the malady to dispel all doubt as to its contagiousness. The author speaks of four different microorganisms which have been described as the etiological agent, but expresses his own belief in the pathogenicity of the coccobacillus to which is attached the name of Perez. The cultures of this organism develop the characteristic fetid odor, and when inoculated into the veins of an animal give rise to atrophic rhinitis. The author accordingly concludes that persons suffering from ozena should observe all possible prophylactic precautions toward other members of their families, especially toward children.

The Protection and Repair of the Perineum.—Apfelstedt describes a method of protecting the perineum from rupture during the passage of the fetal head, which he considers has advantages over those now in use. It is a bimanual procedure, in which the operator, placed at the patient's left side with the left hand on the perineum, controls the advance of the fetal head, while with the right the soft parts under the pubic arch are crowded back toward the nape of the neck of the fetus. When the head is about to be born the patient is instructed to take rapid, deep breaths as forcibly as possible, and by this means the expulsive action of the abdominal muscles is reduced to a minimum. Under these conditions it is stated that the head can be perfectly controlled by the two hands, and be very gradually brought over the perineum and through the vulva at the discretion of the operator. The author also describes a method of perineal repair which requires the use of sutures of silkworm gut armed with a needle at each end. The laceration is opened up by spreading apart the vaginal walls, and one needle is entered at the apex of the V formed by the sides of the laceration. It is carried in a wide sweep through the muscles, and is then brought to the surface of the perineum a short distance from the edge of the tear. The other needle enters the tissues at exactly the same point as the first, but is carried through the tissues on the other side of the incision, and emerges on the skin at a point opposite the first. As many sutures as are required are passed all exactly parallel to this. If the tear is a complete one, the two lowest sutures are so placed as to pass through the ends of the torn sphincter. The author believes that it is safe to remove the sutures on the sixth day after operation.

Münchener medizinische Wochenschrift, November 20 and 27, 1906.

The Transmission of the Percussion Sound.—Hamburger says that the oldest theory relative to the nature of the percussion sound over the lungs was that of Williams, which was published in 1838. This observer considered that the percussion sound was the result of the vibrations of the thoracic wall that were set up through the percussion stroke. If these vibrations were unimpeded the note was loud, but if they were interfered with the note became dull. At about the same time Skoda put forward a different view to the effect that the only factor concerned was the vibration of the air in the lungs. Skoda considered that the chest wall had nothing to do with the formation of the note, and that the flatness obtained over solid organs depended on the absence of any air to be set in vibration. Mazonn in 1852 corrected both of these views by combining them in the dictum that the percussion note is evoked through the vibrations of the chest wall and through the vibrations of the pulmonary air that are set up secondarily. The author is in accord with this supposition, and discusses the physical considerations involved in the production of the liver and cardiac dullness, etc. He believes that vibrations are transmitted from one side of the chest to the other to a much greater degree than is generally believed, and says that, particularly in dealing with children, care must be taken to avoid possible sources of error through contact of the patient's thorax with solid objects. For example, if a child is examined while being held by the mother with one side pressed against her own body the percussion note over that side of the chest will be much duller. In percussing the left axillary region there is often a tympanitic quality to the note, owing to the presence on this side of the air-filled stomach. In order to make comparison possible between the two sides, it is advisable to have an assistant place his hand against the patient's side with the upper border on a line with the lower border of the lung. In this way the transmission of vibrations from the stomach is checked and accurate comparison between the two sides is made possible.

The Blood Examination in Nervous Persons.—Goett gives the results of the blood examination in four neurasthenic young males, which were remarkable owing to the fact that while the hemoglobin was high there was a very marked diminution in the number of red cells per cm. For example, in one case with a hemoglobin of 95 per cent., there were only 2,500,000 erythrocytes to the cm. In these four cases the hemoglobin index varied from 1.17 to 1.9, a result that was entirely incompatible with the general clinical picture. The author considers that errors of technique can be excluded in these cases, and explains the disparity by supposing that sudden vasodilatation took place in these very nervous individuals owing to the prick of the needle, and possibly the sight of the drop of blood. In each case the first drop taken was used for determining the hemoglobin percentage by means of Sahli's apparatus,

and the counts were made on the drops that emerged later, and the author believes that this interval of time was sufficient for a notable degree of dilution of the blood to take place through the entry into the capillaries of lymph in consequence of sudden vasodilatation. He points out that owing to this possibility the results of blood counts made in highly nervous individuals must be accepted with caution.

Experimental Tabes in Dogs.—Spielmeyer describes lesions he was able to produce in dogs by inoculating them with the trypanosomes of sleeping sickness. In the course of his experiments he found that most of the lower animals could not be used because they succumbed to the infection long before demonstrable lesions of the nervous system had been caused, and even with the dogs it was difficult to keep the animals alive long enough to obtain satisfactory specimens. In seven instances, however, he was able to demonstrate, by means of the Marchi method, degeneration of the posterior root tracts in the cervical region of the cord, of the sensory root of the trigeminal nerve, and, in two cases, of the optic nerve. While the clinical symptoms attending this degenerative process of the central nervous system were not those of tabes, the anatomical changes were so pronounced that the author considers it justifiable to speak of the condition under this name, and he compares the condition with the post-syphilitic tabes of man.

The Opium Bromide Treatment of Epilepsy.—Kellner considers that by combining the use of opium and baths with the bromides better results are obtained in the treatment of epilepsy than by the resort to bromides alone. Out of eighty patients treated according to the plan to be detailed, complete freedom from attacks during a period of from two to six years was obtained in 27.5 per cent., great improvement in 16 per cent., diminution in the frequency and severity of the seizures in 29 per cent., and in the others the treatment was either without effect or had to be abandoned. The treatment is as follows: During the period of fifty days the patient is given three times a day extract of opium, beginning with a dose of 0.05 g. and increasing every other day by 0.01 g., so that by the fiftieth day the highest dose of 0.29 g. is reached. On the morning of the fifty-first day a maximum dose of 0.3 g. is given, and this concludes the opium treatment. Bromides are now given as follows: at noon and in the evening of the fifty-first day 2 g. are given of a bromide mixture containing one part each of bromide of potassium and bromide of sodium, and half a part of bromide of ammonium. On the fifty-second and fifty-third days 6 g. of this mixture are given, on the next two days 7 g., on the next two days 8 g., and from the fifty-eighth day on 9 g. during a long period of time. During the opium treatment the patient takes three times a day a tablespoonful of 1 per cent. hydrochloric acid solution, and Carlsbad salt as needed. The third factor in the treatment is the use of baths, which are taken daily during the opium period. On the first day the bath has a temperature of 24° C. and lasts ten minutes, on the second day 23° and lasts 9 minutes, on the third day 22° and lasts 8 minutes, and so on until on the eighth day it has the temperature of 17° and lasts 3 minutes. This is continued until the fifteenth day, and then from the sixteenth to the twenty-third day the bath lasts 4 minutes, from the twenty-fourth to the thirty-first day 5 minutes, and from the thirty-second to the fiftieth day it lasts six minutes. In addition, the usual hygienic régime, comprising abundance of fresh air, suitable physical employment, diet, etc., is insisted on. The author subjects to this treatment only such patients as are physically well enough to stand the opium dosage, and whose mentality is sufficiently well preserved to make a return to the normal condition seem possible.

Deutsche medizinische Wochenschrift, November 22 and 29, 1906.

The Influence of Radiography on the Treatment of Fractures.—König says that one drawback which has attended the universal use of the *x*-ray as a diagnostic measure in cases of fracture has been the fact that at present there is a tendency for practitioners and students to consider that the thorough study of the subject of fractures, which was formerly requisite in order to make accurate diagnosis and correct treatment possible, is now no longer necessary since a brief examination with the rays will furnish all the information desired. König believes that this is a mistaken point of view, and states that in his clinic he requires his assistants and students to make every diagnosis as carefully and fully as possible before resorting to radiography. By this system the surgeon profits to an extreme degree, and soon acquires the ability to recognize minute alterations in contour, form, etc., that previously would have escaped his attention. For certain classes of fractures, such as simple breaks in the shafts of the long bones, the use of the *x*-ray is not absolutely necessary, and the failure to employ it does not lay the surgeon open to criticism. On the other hand, in all cases in which joints are involved, or in which any doubt as to the nature of the injury can exist, it is malpractice not to make use of the assistance afforded by the Roentgen ray. Through the application of the rays our knowledge of the pathological anatomy and the mechanics of fractures has been greatly amplified, and several types of fracture have been discovered which formerly were not recognized at all. In many instances the surgeon is by this means enabled to secure data which indicate the necessity for and the best means of performing operative procedures.

The Examination of the Blood and Tissues in Cases of Syphilis.—Neisser, Bruck, and Schucht describe a very intricate series of reactions used by them in order to determine whether extracts of organs or body fluids obtained from supposably syphilitic human beings or monkeys contain either the antigen or antibody of the disease. The reaction is essentially founded on the principle of the deviation of the complement, but as the authors themselves point out, it is still too complicated to be available for use by any but the most experienced investigators. They believe, however, that it promises well for the future as a clinical method, and that it is already possible to determine whether a remote syphilitic infection has been cured or is still present as a latent condition. As the result of over 200 experiments on human beings, and a very large series of observations on animals, the authors come to the conclusion that in cases in which the antigen reaction is positive antisyphilitic treatment should always be instituted. On the other hand, if no antigen can be demonstrated but the antibody reaction is positive, treatment is necessary only if the patient never has had antisyphilitic treatment, or if more or less indeterminate but suspicious symptoms are present. Negative reactions, it appears so far, are not to be considered as controverting the clinical diagnosis, and a negative reaction does not yet have sufficient weight in the authors' opinion to warrant the omission of syphilitic treatment if this would appear advisable from the clinical manifestations. It is desirable to repeat the tests at intervals of several weeks in negative cases, as it has been found that the antigen is variable in its appearance and may disappear for a time, only to reappear again later. An interesting part of the investigations is concerned with the examination of the blood and cerebrospinal fluid in cases of tabes, but the results obtained are not conclusive.

French and Italian Journals.

Pellagra.—According to M. B. Triller, who has written a thesis on this subject, pellagra may develop at any age. Women are more susceptible than men, especially between the ages of twenty and forty years. The disease is more frequent during the hot season, due doubtless to the increase in the toxic power of the injurious constituent of the maize. The characteristic erythema is aggravated or even caused by sunlight, although it may occur independent of this action. Alcohol acts strongly as a predisposing cause by its debilitating effect on the patient. The most marked lesions are those of the central nervous system. The lesions of the peripheral nerves are far less important and are probably secondary to those of the central nerve cells. The intestinal mucosa is generally atrophied. The cutaneous lesions have nothing characteristic about them. Not much study has been given to the condition of the blood. The disease may be divided into three stages. The diagnosis is generally easy in places in which pellagra is endemic. The prognosis is ordinarily grave. Recovery has never been observed after the third stage has been reached. The treatment of the disease is practically prophylactic. Maize should not be eaten, or it should not be allowed to become toxic, otherwise the treatment is purely symptomatic.—*La Tribune Médicale*, September 22, 1906.

Appendicitis Consecutive to Enteritis of Infancy.—Aug. Broca declares that in the greater number of cases an attack of acute febrile appendicitis shows itself in peritoneal symptoms. It is well known that constipation is one of the most ordinary symptoms of peritonitis. Appendicular peritonitis, severe or slight, follows this rule, and in crises of this nature obstinate constipation is habitual. However, diarrhea is probably more frequent than is generally believed. The writer calls attention to the septic diarrheas which occur when peritoneal or general infection is already clearly marked; he also makes allusion to those attacks which precede by some days symptoms by which appendicitis reveals itself; and to those attacks which together with vomiting mark the beginning of a crisis, sometimes continuing a short while and sometimes ceasing, giving place to constipation due to peritoneal reaction. The writer's observations show that in the midst of an attack of mucomembranous enterocolitis of the most chronic type and distinctly characteristic there may develop an appendicitis of the most serious form which may terminate fatally. As to the frequency with which this happens, Guinon has observed 20.7 per cent. cases of appendicitis in various forms of enterocolitis among children. The writer considers this a minimum estimate.—*Société de Chirurgie de Paris*, 1906.

Intestinal Occlusion.—H. Roger and M. Garnier state that the occurrence of intestinal occlusion is sometimes due to a reflex action, sometimes to an intoxication of the organism, and sometimes to an infection by intestinal microbes. The writers have conducted various experiments on the ground of the toxic theory as well as in relation to the theory of infection. It seems difficult to attribute to the common bacteria and to those slightly virulent the genesis of the phenomena which have been observed. As to the reflex theory, it scarcely lends itself to experimental researches. Facts prove, nevertheless, that the structure of the intestine and mechanical distention are incapable of causing any appreciable trouble. The toxic theory is the only one which is scientifically admissible.—*Revue Française de Médecine et de Chirurgie,* October 10, 1906.

Sweating Sickness and the Rat.—Chantemesse, Marchoux, and Havry have made a study of an epidemic of sweating sickness which occurred in May and June in the department of Charente. Within six weeks 6,000 people were attacked by the disease. The epidemic occurred especially in the villages. Blood examination and examination of the cerebrospinal liquid have not led to the discovery of any germ which could be inoculated and cultivated. This sickness seemed to propagate itself only where there were bridges. In character it was far more epidemic than contagious. Women are more susceptible than men, especially those that live in houses without floors. When there is an outbreak in a village it is the houses in the outskirts whose inhabitants are first infected. In view of these facts Chantemesse suggests that the rats and fleas may be the carriers of this disease. It is merely an hypothesis, but merits attention. The region invaded by the sweating sickness is exactly that which two years ago was overrun by meadow mice. Besides this the patients examined by Chantemesse showed numerous marks of flea bites. —*Gazette des Hôpitaux Civils et Militaires,* October 25, 1906.

Acquired Hemihypertrophy of the Face.—Fabio Rivalta finds in literature twenty-three cases of hemihypertrophy of the face, of which seventeen were congenital and only five acquired. To these he adds one acquired case observed by himself. This condition is exceedingly rare, especially in the acquired form. The patient observed by the author had a neuropathic heredity. His hypertrophy was left-sided and began at the age of fifteen years, progressing very slowly up to his thirty-third year, when it began to increase rapidly until the one-sidedness of the face was very marked. It involved the lower maxilla alone, with no increase of the soft parts. After a careful examination of the other five cases recorded and of the history of this case, the author gives us these conclusions as to the etiology of the affection: It is probably of central nervous origin; it is due to the trophic disturbances, trophic fibers being carried to the bone in the trigeminus; there is produced an increase of trophic function by some irritation of the nerve. The author's case had a lesion of sensibility in the trigeminus of the same side.—*Il Policlinico,* September, 1906.

Cancroprecipitins and Their Application to the Early Diagnosis of Gastric Carcinoma.—Dario Maragliano says that this method of diagnosis by cancer precipitins depends on two biochemical facts: first, that in the reaction of precipitation it is the immune serum that is precipitated by the albuminoid solution that has been used for immunization; second, that immune serum contains as many sorts of precipitable substances as there are precipitating substances injected, that is, the serum is polyvalent. Hence it is possible to precipitate and isolate from the immune serum the different precipitating substances and to remove them. Animals are immunized with the fluids derived from a stomach that is the subject of carcinoma, and their serum is then made to react with the gastric juice of the suspected patient. The author has obtained a serum that reacts to cancerous gastric juice, but does not react to the normal blood serum. With the juice of normal stomachs it does not react at all, but that of a cancerous stomach causes precipitation. The carcinomatous gastric juice precipitates the immune serum by the presence of special albuminoids of a cancerous nature independent of the albuminoids contained in the juice itself. He believes that this reaction should be tried in all suspected cases of cancer as the Widal reaction is used in typhoid. He has tested seventeen cases of stomach disease, and found the reaction positive in twelve of them, and in all these cases operation or autopsy showed that there was cancer of the stomach present.—*La Riforma Medica,* August 18, 1906.

Heredity as a Factor in Infantile Eclampsia.—Walfredo Chiodi says that, given the small resisting capacity of the infant, due in part to lack of development and in part to incomplete adaptation to his surroundings, slight stimuli will produce great nervous disturbances. He considers of great importance the stimuli which act on the child, but still more important is the ability to resist them, and that is supremely affected by the heredity of the child. All forms of neurotic conditions, not only of the parents, but also of the ancestors, affect this power of resistance. Whatever nervous disease exists in the ancestors may be transmitted in an entirely different form to the descendant, predisposing him to convulsions. Convulsions are found to appear in children of hysterical, epileptic, and eclamptic mothers, while the use of alcohol by the parents has a marked tendency to be transmitted to the child as a tendency to eclampsia in infancy.—*Giornale Internazionale delle Scienze Mediche,* August 15, 1906.

Sarcoma of the Labium Majus.—Siegel, Dalval, and Marie report this case. The tumor was removed by Riche from a woman forty-three years old. The patient had noticed the growth for the first time ten years before. Previous to this time she had always enjoyed good health. The growth first appeared as a small, hard, painless tumor, which increased in volume slowly without ever showing any inflammatory reaction. At the end of three years the tumor was extirpated. For about three years there was no recurrence. Then the tumor reappeared with the same characteristics that it presented in the first place. It grew to the size of a small orange. It was movable upon the tissues underneath. The skin covering it was thin, very adherent, of a violet color, dotted here and there by whitish spots due to small protuberances on the surface of the tumor. There was no ganglionic involvement. Histological examination showed that the tumor was sarcomatous in type, consisting of generally atypical cells.—*Bulletins et Mémoires de la Société Anatomique de Paris,* May, 1906.

Cysts of the Cerebral Apophysis.—Alessio Nazari reports two cases of cyst of the apophysis occurring in adults, in neither of which were they diagnosticated during life, owing to an entire absence of symptoms that might be referred to the organ. The literature of this form of tumor is very small in amount, very few cases having come to autopsy. In one of the author's cases there was present a tumor of the temporosphenoidal lobe of a gliosarcomatous nature, and the cyst of the apophysis was not suspected. In the other there was chronic pulmonary tuberculosis, tuberculous meningitis, infantilismus, persistent thymus, and hypoplasia of the thyroid gland. Here the tumor of the apophysis was of considerable size, four and one-half by three centimeters in diameter. The cysts were cholesteatomatous in nature, as was shown by the contents. The investing membrane was formed by a connective tissue membrane lined with a single layer of epithelial cells, not cylindrical or vibratile.—*Il Policlinico,* October, 1906.

Diagnostic and Therapeutic Value of Lumbar Puncture in Epidemic Cerebrospinal Meningitis.—Arturo Primavera gives the histories of four cases of epidemic cerebrospinal meningitis treated by him by lumbar puncture, and records his conclusions. There is no doubt of the therapeutic value of lumbar puncture in this disease. It should be made at the very beginning of the disease to get the best results, before anatomical lesions have taken place that prevent cure. The value of this procedure is not merely symptomatic or palliative, but is far wider. Extraction of fluid calms the nervous symptoms, relieves pain, diminishes cerebral tension, lessens the toxic condition of the cerebrospinal fluid, and helps the organism and the nervous system to react against the disease. It is of great value in assisting diagnosis by showing the presence of polynucleosis, which serves to distinguish it from the chronic inflammatory form of meningitis.—*Giornale Internazionale delle Scienze Mediche,* October 15, 1906.

Recurrences in Diphtheria.—Gino Menabuoni finds that in the Pediatric Clinic at Florence, from 1892 to the present day, there have been 2,300 cases of diphtheria treated, with 39 recurrences among them, all confirmed bacteriologically; that is, one and seven-tenths per cent. The author limits the term recurrence to cases of new infection, in which a considerable interval has elapsed since the preceding attack, and in which it has been ascertained that the bacilli were absent from the throat in the interval. Children are not allowed to leave the hospital until a clear culture has been obtained. The bacillus remains in the pharynx usually for from one to thirty days after the disappearance of the membrane. Among predisposing causes the author mentions the anatomical condition of the pharyngeal mucous membrane; the existence of other infectious diseases, such as scarlatina, and the presence of some milder form of respiratory infection. In general the second attack is much milder than the first one. Out of the thirty-nine cases there were three deaths, one from asphyxia, one in a case complicated with scarlatina, one with measles. Probably the mildness is due to a resistance of the organism to the poison, and not to a mild type of infection.—*Rivista di Clinica Pediatrica,* October, 1906.

Book Reviews.

THE DYNAMICS OF LIVING MATTER. By JACQUES LOEB, Professor of Physiology in the University of California, Columbia University Biological Series VIII. New York: The Columbia University Press, The Macmillan Company, Agents. London: Macmillan & Co., Ltd., 1906.

As is well known, Professor Loeb is the advocate of a robust optimism which regards experimental abiogenesis as the objective point of biological research and presses forward to this goal with an ardor that makes success seem rather more than a possibility. The present volume is founded on the series of lectures given by the author four years ago at Columbia University, though these have been amplified and broadened in scope so that the book represents a well-rounded exposition of the most recent work in experimental biology. After an introductory discussion of the modern notions of the mechanism of heredity and evolution, in which considerable prominence is accorded De Vries' postulate of the mutation of species by jumps, the following subjects are treated: The general chemistry of life phenomena; the general physical constitution of living matter; some physical manifestations of life; the rôle of electrolysis in the formation and preservation of living matter; the effects of heat and radiant energy on living matter; heliotropism; tropisms and allied phenomena; fertilization; heredity; the dynamics of regenerative processes. While, naturally enough, some portions of the book are of a nature to appeal particularly to laboratory workers, others should prove of great interest and value also to the general medical reader. Such, for example is the exposition of the considerations relating to the determination of sex, which lead the author to the conclusion that sex is, in all probability, already predetermined in the sex cells. The matter of regeneration is a subject fraught with practical possibilities, and the discussion of the effects of heat and radiant energy on the living cell also has a medical application. The work is an important contribution to a fascinating subject, and it may well be commended to the physician desirous of following the progress made in the sciences allied to medicine.

EATING TO LIVE, with Some Advice to the Gouty, the Rheumatic, and the Diabetic. A Book for Everybody. By JOHN JANVIER BLACK, M.D., Member of the College of Physicians of Philadelphia; Member of the Delaware State Medical Society; Author of "Forty Years in the Medical Profession," "Cultivation of the Peach, Pear, Quince, and Nut-Bearing Trees," etc. Philadelphia and London: J. B. Lippincott Company, 1906.

THE author in his preface likens human beings in their habits of eating and drinking to sheep, which have not the slightest idea of taking care of themselves. Many interesting problems such as personal idiosyncrasy are considered. The horrors of the quick lunch, the modern lunch, full late dinner, and heavy supper after the opera are all held up for criticism. There are various charts which make the text more graphic. In these are shown the average composition of common American food products; coefficients of digestibility and fuel values per pound of nutrients in different groups of food materials; composition of food materials, nutritive ingredients, refuse, and fuel values; food consumption of persons in different circumstances, and proposed dietary standards; pecuniary economy of food, amounts of actually nutritive ingredients obtained in different food materials for ten cents; comparative cost of digestible nutrients and energy in different food materials at average prices. Special diets for the conditions of corpulence and leanness, as well as for various diseases, are discussed. The characteristics of different kinds of food, including beverages, are given. There is a good index. The volume is helpful and interesting, but would be greatly improved as a book of reference if the text was arranged in chapters.

A TEXTBOOK ON THE PRACTICE OF GYNECOLOGY, for Practitioners and Students. By WILLIAM EASTERLY ASHTON, M.D., LL.D., Fellow of the American Gynecological Society; Professor of Gynecology in the Medico-Chirurgical College, and Gynecologist to the Medico-Chirurgical Hospital, Philadelphia; Formerly Lecturer in Gynecology in the Jefferson Medical College, Philadelphia; One of the Founders of the Congrès International de Gynécologie et d'Obstétrique; Member of the American Medical Association. With Ten Hundred and Fifty-seven New Line Drawings Illustrating the Text by JOHN V. ALTENEDER. Third Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1906.

THERE are two things doubtless that have won for this work such favor with students and practitioners as to demand a third edition within fifteen months after the original publication; these are the clear, direct style in which the author presents his subject and the excellence of the illustrations. The work is especially adapted for students' use by reason of the systematic arrangement of subjects and of the free use of side heads in heavy type facilitating ready reference and aiding memory.

After a number of preliminary chapters on the General Technique of Gynecological Examinations, Microscopical and Bacteriological Examinations, the Blood in Relation to Surgery, Hydrotherapy, Diet, Saline Injections, History Taking, the Causes of Diseases Peculiar to Women, etc., the discussion of the diseases of the various organs is taken up in anatomical order. This arrangement, though arbitrary and not always consistent, has the advantage that it permits a discussion of the methods of examining each organ before describing its diseases, and so does away with the necessity of a special chapter on physical examination, which, the author thinks, tends to confuse the student by reason of its broad generalization.

In this new edition certain changes have been made to conform to a change of views which the author's personal experience has led him to adopt, so that the book represents Dr. Ashton's "views at the present time, based upon an actual working knowledge of the advances that have been made in gynecology and abdominal surgery." This personal note adds greatly to the value of the treatise. The book is inordinately large—nearly 1,100 pages—and correspondingly heavy. It would, we think, have been wiser, certainly more kind to the reader, to publish the work in two volumes, even at the expense of an increase in price. A textbook should be literally a manual, a book that can be held in the hand when it is read, and not one that calls imperatively for a desk or some sort of book-rest. However, the road to knowledge is proverbially difficult, and the meat that is to be gotten out of this excellent work is worth the labor of getting it. The illustrations are numerous and most instructive.

A TEXTBOOK OF HUMAN PHYSIOLOGY. By ROBERT TIGERSTEDT, Professor of Physiology in the University of Helsingfors, Finland. Translated from the Third German Edition and Edited by JOHN R. MURLIN, A.M., Ph.D., Assistant Professor of Physiology in the University and Bellevue Hospital Medical College, New York City. With an Introduction by Professor GRAHAM LUSK, Ph.D., F.R.S. (Edinb.). New York and London: D. Appleton & Co., 1906.

IN presenting an English version of Professor Tigerstedt's textbook the translator has incurred the gratitude of all students of this subject who are unable to read the original. The work is one of those most widely used in the Continental universities, and is even supplanting the beloved Hermann's Lehrbuch der Physiologie which has so long been a universal favorite. No doubt it will meet with the same approbation in this country. Tigerstedt is at his best in the discussions of the general principles of physiology as related to biology as a whole, of the circulation, of metabolism, and of the nervous system, and these topics are treated in masterly fashion. The one subject which receives rather less space than it would seem to deserve is digestion, though this is perhaps due in large measure to the fact that the author has made it a point to omit as much as possible the more intricate chemical considerations that now constitute so formidable a problem for the advanced student. The work of translating and editing has been performed with praiseworthy skill and discretion. The English is excellent and has no Teutonic flavor, while Professor Murlin's decision to omit some of the more highly technical parts of the book, such as the mathematical considerations relating to the optics of vision and the mechanics of the circulation, is only to be commended. The editorial emendations are apt, and, like the illustrations that have been added, serve to enhance the value of the work for American readers. To borrow the phrase with which Professor Lusk closes his introduction to this edition: "The book may be earnestly commended to the medical student and to the practitioner."

TRAITÉ DES MALADIES DU NEZ. Par le Docteur A. Ménier, Ex-Interne des Hôpitaux de Paris, etc.; Introduction de M. le Professeur S. DUPLAY; Preface de M. le Docteur A. CASTEX. Paris: A. Maloine, 1906.

OF making many books there seems to be no end, especially in rhinology, and our Gallic friends seem determined to keep up with the procession. The present volume is an exhaustive exposition of diseases of the nose and goes somewhat more deeply into the general and plastic surgery of this organ than is usual with works of its class. It is well printed on good paper, but some of the illustrations are very poorly executed. One commendable feature is an index of authors referred to. The general index is complete. The chapters on nasal deformities, vestibular dermatoses, and tumors are unusually elaborate.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON GYNECOLOGY AND OBSTETRICS.

Stated Meeting, Held November 22, 1906.

DR. HERMANN J. BOLDT, CHAIRMAN PRO TEM.

Large Multilocular Ovarian Cyst in a Woman Over Seventy Years Old.—Dr. L. J. LADINSKI presented this specimen which he removed from a woman, 70 years old, who had been married 50 years and had had eight children, the youngest being 30 years. She had never had an abortion and all her labors were uncomplicated. She began to menstruate in her thirteenth year, and menstruation ceased in her fortieth year. Her family history was negative. For the past three years the patient had an abdomen moderately enlarged, but she complained of nothing except occasional stinging pain in the middle of the lower abdomen. In the past year the patient had a ventral hernia kept reduced by a truss, and which never caused any pain. There were no gastric disturbances, and no edema of the extremities. During the past two months the patient's abdomen had gradually and markedly enlarged until it became the size of a full term pregnancy, causing a feeling of extreme distention of the abdomen, and pain which was referred to the left side. Discomfort due to distention was felt par ticularly at the side of the abdomen, and in the past two months it had been impossible for the patient to recline on the left side. The urine had been diminished in quantity and had been voided every one or two hours without pain. Her bowels were regular and her appetite was poor. There was no loss of flesh, but there was of strength. On admission her temperature was 99.6°, pulse 108, respiration 30. Examination of the urine was negative. Hemoglobin was 60 per cent,, leucocytes 9,000, polynuclears 62 per cent., small mononuclears 16.5 per cent., large 16.5 per cent., eosinophiles 4 per cent, and transitionals 0.5 per cent. The abdomen was extremely distended by a tense irregular and nodular tumor. There was flatness over the entire abdomen except in region of umbilicus which presented a large hernia. There were no signs present of superficial or deep fluctuation or of free fluid in the peritoneal cavity. Vaginal examination revealed a very small uterus and a hard, immovable mass high up in the pelvis. No positive diagnosis was made and an exploratory laparotomy was advised. A median incision was made from just below the umbilicus which was displaced considerably upward to within 2 inches of the symphysis, encountering considerable venous bleeding. On opening the peritoneum a small amount of blood-stained serum escaped. A large cystic tumor was found, extending in all directions, filling the abdominal cavity, and thoroughly adherent to parietal peritoneum and intestinal coils. The incision was extended upward in the median line, the umbilicus being deviated to the left, and the upper part of the tumor was separated from dense adhesions with transverse mesocolon and intestinal coils. The entire sac of the tumor was bound down by adhesions to the surrounding parts, and by breaking up some of the adhesions and tying others the tumor was finally freed. Several large and small cysts were broken into which discharged dark-brown fluid containing gelatinous matter. The tumor was delivered, and the pedicle which sprang from the right broad ligament was clamped, ligated, and cut. Bleeding from separated adhesions was very profuse, especially in the upper part of the abdomen and from the transverse mesocolon, but was controlled by packing with very hot towels. An internal hernia was present, but it was not thought advisible to prolong the operation to cure the same. The abdominal wall was sutured in layers, using No. 1 iodine catgut for the peritoneum continuously, No. 2 interrupted sutures for muscle, and No. 2 chromic continuous for the fascia, and No. 1 iodine continuously for the skin. Subsequent to the operation the temperature ranged between 99° and 100° until discharged, although it was slightly above the latter figure for twenty-four hours after the operation. The pulse ran between 100 and 110 until the second week, when an average of 85 was reached and maintained. The respirations were normal. Her bowels were moved by calomel, salts, and enema twenty-four hours after the operation and spontaneously after the second day. There was primary union in the wound and convalescence was uncomplicated. The patient sat up in bed on the twelfth day, and was out of bed on the fifteenth day. She was discharged, cured, on the twenty-second day after the operation.

Fibrocyst of the Left Ovary, With Ventral Hernia, Complicating Pregnancy.—Dr. LADINSKI presented this specimen, which he had removed from a woman, aged 35 years, and who had been married fifteen years. She had had six children, the eldest being 12 years, and the youngest 5. Menstruation began at the age of 18, was normal in type, her last menstrual period occurring three months ago. Her family and previous histories were negative. Her present trouble dated back to her first childbirth, twelve years ago, when, after a prolonged labor, a large ventral hernia followed. This gradually increased in size, and during pregnancies would contain the uterus, becoming larger after each labor, none of which since the first had been spontaneous. During the past few months she complained of pain all over the lower abdomen, sticking in character. Her last menstruation was three months ago, and at present she felt an enlarged uterus in the hernia hanging down over the symphysis. She was constipated, but urination was normal. There was no edema of the extremities. On admission to the hospital her temperature was 99°, pulse 120, respirations 28. Physical examination showed relaxed abdominal walls, marked diastasis of the recti, and protrusion of abdominal contents into abdominal wall. Vaginal examination revealed a pregnant uterus of the third month, and a cystic tender mass, the size of a fist, freely movable in the left pelvis. The urine showed a faint trace of albumen, but no casts. A Pfannenstiel Stimson incision was made with its convexity downward and the other layers of the abdominal wall below the subcutaneous tissue were divided longitudinally. The left ovary was found to be enlarged by a fibrocyst; the cyst was distinctly pedunculated. The pedicle was transfixed, tied, and the tumor removed. The peritoneum was separated on either side of the incision and an attempt was made to bring it together by continuous suture; this was, however, abandoned after closing one-third of the wound because of the friability of the tissues. The interrupted sutures were left untied until the recti muscles were approximated by interrupted sutures, the peritoneal sutures being tied as muscle suturing advanced. The anterior layers of the sheaths of the recti were separated, and the left flap was made to overlap the right by mattrass sutures, and its free border united well over on the right side by continuous suture.

Hysterectomy for Placental Polyp.—Dr. LADINSKI reported the case of a woman, 35 years old, married eighteen years, the mother of five children, the last one six years ago. Since the birth of the last child she complained vaguely of not feeling well, and had had attacks of stabbing pain in the lower abdomen on both sides, at intervals of one to three months, these attacks being usually accompanied by slight fever, but with no chills. She complained acutely during the past five months. Up to this time the menses had been regular in occurrence, but profuse, lasting a week or more, and followed by a leucorrheal discharge. In the past four months, after an amenorrhea for two months, bleeding had been continuous, varying in amount from day to day, sometimes profuse with pieces of clotted blood. The pain in the lower abdomen was more acute and constant for a period of three weeks, two months ago, when she was curetted by her attending physician. She felt

improved as regards the pain, but it was without effect on the bleeding. On admission to the hospital the temperature was 100.2°, pulse 92, respiration 26. Examination of the urine was negative. The leucocytes numbered 10,600, polynuclears 62.5 per cent., small mononuclears 20 per cent., large mononuclears 14.5 per cent., transitionals 2 per cent., and eosinophiles 1 per cent. The patient was very anemic. Examination revealed cystic degeneration of both ovaries and the uterus was somewhat enlarged but normal in contour and baggy in consistency. The cervix was normal and the external os was contracted. A diagnosis of possible deciduoma malignum was made and an immediate operation was advised. The uterine cavity was curetted and swabbed with carbolic and alcohol. The external os was closed by a number of sutures. A circular incision was made in the cervical mucosa; the posterior cul-de-sac was opened and the anterior peritoneal reflection incised after lifting up the bladder. The patient was placed in the Trendelenburg position, and an incision made in the median line of the abdomen, below the umbilicus. The pelvic organs were exposed, the uterus drawn upward, the ovarian vessels ligated with catgut, and the broad ligament was severed down to the uterine arteries. The vaginal mucosa, previously separated, was pulled up and the edges brought together by interrupted and continuous sutures. The abdominal wall was closed and primary healing followed. The patient was out of bed on the eighteenth day and discharged, cured, on the twentieth day after admission.

Early Cornual Pregnancy.—Dr. Ladinski reported the case of a woman, married twelve years, the mother of two children, the last having been born seven years ago. She always had been in perfect health. While in the mountains she was suddenly taken at 5 A. M. with pain in the abdomen and entered into collapse. The case was diagnosed as extrauterine pregnancy. Dr. Ladinski was telephoned for and arrived on the afternoon of the same day. Her condition was then bad, but it improved. He made a diagnosis of internal hemorrhage, but he could not make the diagnosis of extrauterine pregnancy. It proved to be a case of isthmeal pregnancy. Examination under an anesthetic did not enable him to make a diagnosis because there was no tumor. The specimen was shown.

Four Cases of Cesarean Section.—Dr. S. W. Bandler reported these cases.

Case I.—This was a case of vaginal cesarean section for placenta prævia centralis with profuse hemorrhage at six and a half months. When sent into the hospital the patient was very anemic, pulse 120 and temperature 101°. A transverse incision was made on the anterior wall of the cervix and the bladder was dissected off from the anterior uterine wall. A transverse incision was then made on the posterior wall of the cervix with dissection up to the sac of Douglas. A median splitting of the cervix, anterior and posterior, was made up to the internal os, or lower uterine segment, without invading the peritoneum. The hand was introduced, the gestation sac was ruptured, and the fetus was removed by the legs, the membranes and placenta being removed manually. Another fetus and sac were found in the uterus and these were removed by the same procedure. Hot lysol douches were given and the uterus was packed with gauze. The cervix was sewn with six chromic sutures anteriorly and four posteriorly. The transverse vaginal incisions were also closed. The patient ran a high temperature for two weeks, which was controlled by intrauterine lysol douches and ergotole. Recovery followed.

Case II.—The patient was a multipara, pregnant at the eighth month. A large ventral hernia followed an operation for appendicitis. There was a very extensive ulceration of the skin over the hernial protrusion, due to intra-abdominal pressure. The cervix and lower uterine segment were packed with gauze; this packing was increased after two days. The cervix was then long and dilated only to two fingers. The uterus was atonic and a vaginal cesarean section was decided upon. The fetus was extracted and the placenta and membranes were removed manually. Hot antiseptic intrauterine douches were given and the uterus was packed with gauze. Ergotole was given hypodermically. A rapid convalescence occurred.

Case III.—This was a case of hyperemesis gravidarum. The patient was pregnant ten weeks. There was constant vomiting in spite of saline enemata. The temperature was 100°, and the pulse 100. The sensorium was benumbed. There was an acute retroflexion and a long narrow cervix. After proceeding as in Case I the middle finger was passed into the uterus, and, with the aid of the external hand, the ovum was completely peeled off from its uterine connections. The complete ovum was removed with the placental forceps. Intrauterine hot douches of lysol were given and the uterus was packed with gauze. A rapid convalescence followed.

Case IV.—The patient was a II-para and pregnant ten weeks. In her previous pregnancy albumin and casts appeared in the urine. There was a high general edema. In the present pregnancy albumin and casts were present. A minor vaginal cesarean section was performed and the ovum was removed complete by the middle finger *in utero*, aided by the external hand, as in Case III. Hot intrauterine lysol douches were given and the uterus was packed with gauze. Ergotole was given hypodermically. The anterior and posterior incision in the cervix were closed with chromic sutures and the vaginal incisions were also closed. Intrauterine gauze packings were introduced.

The Value of the Differential Leucocyte Count in Gynecology and Abdominal Surgery.—Dr. Frederic E. Sondern opened this discussion. (See page 989.)

Dr. Norman Edward Ditman said that he could not impress too firmly upon the minds of his hearers that surgical, gynecological, and medical leucocytosis were three very different things, and it was undoubtedly due to this little-recognized fact that so much discussion on this subject had been created. In the average surgical case the interpretation of the leucocyte count admitted of very little chance for error, realizing the usual influence of bodily resistance and virulence of the organism. It was only necessary to remind them of how the low counts and polynuclear percentages due to excessive virulence and diminished resistance might be altered by complicating conditions, as illustrated by the fact that a starving man might have as few as 861 leucocytes (Succi) and some conditions as few as 3 per cent. polynuclears. The latter occurred in a case of lymphatic leukemia and was most interesting when one remembered that inflammatory processes caused a diminution in the number of leucocytes in this condition. The leucocyte count in ordinary surgery ran almost with the regularity of clock work, and it was comparatively easy to sit down near a book of bedside notes, or in the laboratory, and make rules which would apply in most cases. Such was true also, to a large extent, in gynecology, although the counts in this branch did not bear so well the tests of the modern refinements of classification. The most marked and uniform response in gynecology was in conditions of pelvic abscess. While pus under pressure usually gave very high counts, in inflammatory conditions of the Fallopian tubes and ovaries the leucocytosis was usually of only a moderate degree, with none in the majority of the chronic cases. The early cessation of leucocytosis in these cases was accounted for by the fact that the inflammatory process became walled off, and that the organism which was usually the causative agent, the gonococcus, soon died. To show that his experiences had not been always the same as Dr. Sondern's, he quoted a few cases. The rule that Dr. Gibson launched, for pure surgical work, had far fewer exceptions, and he believed should prove a very useful adjunct to existing methods of surgical diagnosis. He referred to the use of his so-called "standard" scale. After

quoting Dr. Robert N. Wilson's conclusions to his paper on "The Meaning and Significance of Leucocytosis," he said that in a series of gynecological cases examined at Roosevelt Hospital there was some kind of response to inflammation by increase of leucocytes or per cent. of polynuclears, or both, in every case. In 11 per cent. of these cases, however, there was a leucocytosis of some form when no pus was present. The application of Gibson's "standard count" rule to this 11 per cent. would cause inflammation as a cause to be ruled out in all but 2 per cent. Of the gynecological cases where pus was present with high leucocyte count and high per cent. of polynuclears, 24 per cent. were above Gibson's "standard" line and 76 per cent. were exceptions to his rule. Taking into consideration pus cases with the leucocytes normal as well as high, 62 per cent. were exceptions to his rule. A fact he wished particularly to accentuate was that leucocytosis, in diseased conditions was not necessarily a result of infections, but might occur as the result of absorption of a number of chemical substances, some of which were the products of cellular or bacterial activity in or outside the body. After enumerating the conditions which might be confused with surgical inflammatory conditions, as well as those which might occur as complications of surgical conditions which must be taken into consideration at the time of making a diagnosis, he said that if the recently-formulated rules applying to the significance of high leucocyte and polynuclear counts were followed in these cases without due consideration of other factors, a great deal of unnecessary and useless operating would be the result. The great value of repeated counts was emphasized. By this means many of those confusing conditions which he had recited, occurring usually as medical conditions, or complications, might be excluded, as their leucocytoses were of short duration. In connection with the variation in repeated counts, a most important factor was the general condition of the patient, and it was by the heeding of these factors that a prominent surgeon, whom he had observed, had on a number of occasions procured resolution of inflammatory conditions without operating where, but for close observation on these two points in their mutual relationships, operations not indicated would have been performed.

Dr. Charles L. Gibson said that the polymorphonuclear count was of the greatest value, and, as ordinarily made, was fairly reliable, but not when made by a shifting personnel. Dr. Ditman had enumerated many pitfalls; but with him great familiarity with the methods employed gave him greater confidence. There were many things to be taken into consideration, as, for instance, the anesthesia. He presented several charts on which he had tabulated some of his results. He believed it to be better to carry some definite idea in one's mind, and, therefore, he tried to get up a "standard" chart which he considered to be of great value. There were three sets of lines: one running upward, the polynuclear, a rising line, showed some mischief or a lesion badly borne. A slight rise or balance line meant that the process was well borne, or resolving, or diminishing. The descending line meant that they were dealing with a child or infant and the process was of a mild or resolving character. Other interpretations of the lines were given and many charts shown. Some interesting cases were cited. In one a patient entered the hospital with a temperature of 105° and a diagnosis of appendicitis with perforation. Operation was refused. This patient remained under observation for some time. The general process resolved and he left the hospital without losing his appendix. The last observation showed a descending line. He showed another chart with a downward curve. The patient had a temperature of 102°, and a diagnosis of a gangrenous appendix, and here he noted an exception, where one could have pus without increase of the polynuclears, the condition being absolutely safe.

Dr. Howard C. Taylor said that the subject of blood count had a great deal of clinical interest to him, and in a large experience in abdominal cases the blood count was made, both total and differential, and there was no question in his mind as to its value. The point Dr. Ditman and others had made, that there was little value to be attached to a single count, he agreed with. A temperature of 103° in itself did not mean anything, but a temperature of 103° meant something when considered with the blood count. If one studied the temperature curve for hours or days in conjunction with other symptoms it would be of value. There was no doubt but the blood count was of great value when considered with other symptoms. There were pitfalls to be encountered, but the same was true of other signs and symptoms. Typhoid fever might run a typical course, and again it might run an atypical one. This was true of blood counts. In considering gynecological cases he said that an ovarian cyst was not necessarily accompanied by leucocytosis; but it was found when there were certain complications, as from a twist of the pedicle and irritation of the peritoneum, then we would get a leucocytosis without the presence of pus. In later stages the collection of pus might be shut in by a thickened wall; then we got no absorption and no leucocytosis. The leucocyte count in fibroids was interesting; in simple, uncomplicated fibroids one got no leucocytosis; but when the fibroids underwent changes, or became gangrenous, then one got a leucocytosis. He had in mind a patient with a count of 7,000. For one week before operation, without any change in the temperature or pulse, the leucocytosis was 15,000. At operation there was found a small fibroid, two inches in diameter, but gangrenous. One rarely had in fibroids sudden hemorrhage severe enough to cause a posthemorrhagic leucocytosis. The hemorrhage in fibroids was usually a slow and prolonged one, extending over weeks and months. With regard to ectopic pregnancy, if unruptured there was no leucocytosis; but if ruptured there might be a marked leucocytic count. He had had one case with polynuclears 89 per cent. and over, the total count being 30,000. Dr. Brewer had another such a case, the polynuclears having been 95 per cent., the total count 40,000 and over. In both these cases the abdomen was filled with blood. If the blood should become encapsulated four or five days after the hemorrhage the leucocytosis would rapidly diminish. In pyosalpinx of acute form there was a certain increase in the total count, and in the differential; in old cases, with the collection of pus encapsulated, both the total and differential counts would be practically normal. If the condition was acute, with a certain amount of exudate and absorption, one might find an increase in the total and differential counts.

Dr. W. Travis Gibb said he was recently called in consultation to see a woman, 24 years old, who had a temperature of 102°, and with all the symptoms of appendicitis. She was sent to the sanatorium, and by the time she arrived there her temperature was 105°, altogether too high for the amount of symptoms she had. With such a temperature he hesitated about operating. Another gynecologist was called in and advised operation. She had 3,000 leucocytes and 67 per cent. polymorphonuclears. By the time report was made a few typhoid spots appeared. Two months ago he saw a woman with a temperature of 104.5°, with a marked rigidity on the right side. The attending physician made a diagnosis of appendicitis. He confirmed the diagnosis, but added that he thought there was some trouble with the gall-bladder. She was sent to the sanatorium with a temperature of 105°. There were 27,000 leucocytes and 93 per cent. polymorphonuclear cells. Operation was advised. She was pregnant. Her condition became worse and, at operation, the appendix was found acutely inflamed, but without any pus or gangrene. The incision was enlarged and nothing was found in the gall-bladder. The fetus was viable. The appendix was found to be swarming with staphylococci. Immediately after operation the tempera-

ture went down. She aborted on the third day, and the temperature then became normal. In this case the blood count was the guide to operation.

Dr. C. Clarence Sichel said he performed appendectomy for a perforated appendix with localized abscess, and the patient did well for two hours, when the temperature suddenly jumped to 105°. Leucocyte count at that time was in the neighborhood of 20,000, and the polymorphonuclears about 65 or 75 per cent. The wound was found to be clean. This condition of affairs continued for about forty days. At autopsy there was found a small metastatic abscess in the lungs. Throughout the entire course of the disease there had been no marked difference in the leucocyte count, averaging about 25,000, and the polymorphonuclears about 75 per cent.

Dr. Sondern, in answer to Dr. Ditman's statement, said that those figures were not meant to be taken as rules, a fact he distinctly stated at the time he published them. The statement he made at that time was based on cases examined up to that time, numbering about 1,200. The figures given really applied to those cases. If the cases were tabulated now they would give averages different from those given then. So far as a blood examination would take the place of the bedside diagnosis, that was absurd; no diagnosis should ever be made in the laboratory to the exclusion of the bedside findings; laboratory findings were simply aids in diagnosis; such a blood examination was an aid in spite of all the pitfalls and exceptions enumerated.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held November 19, 1906.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Report of the Committee on the Death of Dr. William K. Otis.—By Dr. Robert W. Taylor, Chairman.

Report of the Committee on the Death of Dr. Edward A. Wheeler.—By Dr. Frank C.Raynor, Chairman.

Report of the Committee on the Death of Dr. William P. Brandegee.—By Dr. Edward B. Dench, Chairman.

Morphology a Necessary Factor in the Study of Pathogenic Protozoa.—Professor Gary N. Calkins of the Department of Zoology of Columbia University made a brief address on this subject, illustrating his remarks with lantern demonstrations. He stated there was a growing tendency to drag protozoal research into the somewhat narrow lines of bacteriological technique, and so to limit the normal development of that knowledge. In the determination of an organism, the old-time condition "it must move" seemed to have given place to the more modern one that it "must be cultivated," and in the effort to do that, with the usual outcome of failure, there was some danger that this important field of medical science might be neglected. It was a great achievement to have succeeded in cultivating a protozoon on artificial media, and Dr. Novy and his collaborators were to be congratulated on their results with the flagellate trypanosoma: perhaps, some time, some of the intracellular parasites could be similarly cultivated, but it was not necesary to wait for this before studying them. Professor Calkins showed on the screen a diagram representing the variations in vitality of a free-living protozoon, *Paramecium caudatum*. A single one was isolated in its normal culture habitat, hay infusion, and put into a moist chamber. By the next day it had divided twice. These four organisms were similarly isolated, and four lines of paramecium protoplasm were thus started. On the following day, each of these four had divided, and one from each was similarly selected and isolated as before. In this way the paramecium protoplasm was followed continuously day after day and generation after generation for a period of twenty-three months, or until the protoplasm died from unmistakable protoplasmic old age in the 742 generation. This long period of generations did not represent the normal life cycle of the paramecium, because, owing to the use of artificial stimulants, the vitality was renewed three times, and the 742 generations thus represented four complete life cycles. In any one of these cycles we could trace three well-marked periods of vitality, and each period was characterized by certain peculiarities which could be recognized and by which the stage of the organism in its life cycle could be determined. Thus, there was an initial stage of great reproductive energy, followed by a stage in which the vitality began to wane. It became very plastic, its usually firm and consistent membrane becoming soft and miscible, so that two organisms on coming in contact would fuse. There were also certain nuclear changes by which one could identify this stage in the life cycle. Finally, the last stage was characterized by vacuolar degeneration, gradual breakdown of the cell parts, and death from old age. These three periods in the life cycle of the protozoon, the speaker said, thus simulated the periods of youth, adolescence, and old age in higher animals, and justified his view that the entire cycle and not the single cell should be made the basis of species and genera, and that the whole congerie of cells and not the single one should be regarded as the individual organism. All protozoa passed through similar cycles of vitality, and in all of them it was possible to make out the three periods which were particularly easy to follow in paramecium.

Dr. James Ewing said that while his observations upon the study of pathogenic protozoa were not in close accord with those of Professor Calkins, he did not care to enter at this time into a discussion of that phase of the subject, and would prefer to emphasize the importance of enlisting the cooperation of zoologists and biologists in this work. One of the most encouraging signs of the development of medical research at the present time was that pathologists were recognizing more and more the value of these allied branches of science, and their possible bearing upon the solution of the unsolved problems of medicine. For example, the *Spirochæta pallida* had been seen by some other observers, but its significance as the etiological factor of syphilis had not been suspected until Schaudinn, a zoologist, identified it as a significant structure, and upon the morphology of the organism alone he was apparently able to settle the question of the causation of syphilis.

Dr. C. Am Ende said a similar series of coccobacteria was described by him in the early seventies as the germs of horse influenza. They were round cells, choking with nuclei with nucleoli and spores with sporules, which dispersed with the bursting of the cell and showed all transition forms, from spirule to bacterium. The reaction of this and nearly all other species of pathogenic bacteria to boric acid, similar to that of infusoria and distinct from that of real fungi, demonstrated that they were protozoa. The speaker recalled the fact that the Klebs-Loeffler bacilli varied in form and virulence, and that some contained numerous deep-staining nuclei. Furthermore, Welch described in post-mortem findings necrotic areas with deep-staining dots.

Is Food Containing Sulphites Injurious to Health?—Dr. E. E. Smith, in this paper, said he had pointed out, in a previous article, that the matter of the expediency of using a particular food preservative called for the consideration of three factors, namely: 1. Was the preservative itself injurious to health? 2. Did the preservative lead to injurious conditions in the food to which it was added? 3. Did other considerations render it expedient to permit its use in food? The present paper had to do with the first of these factors in regard to sulphurous acid and the sulphites. The action of the sulphites might be considered

under the following heads. a. In the gastrointestinal tract; b. on the blood; c. on body nutrition; d. on the kidneys. There were three modes of action in the stomach. First, the sulphites tended to neutralize the gastric hydrochloric acid, since by reaction with it they yielded a chloride and sulphur dioxide. This action was, of course, shared by all alkalies, so that as far as the mere act of neutralization was concerned, we were not justified in branding sulphites for that property more than other neutralizing agents, such as, for example, sodium bicarbonate. Indeed, this latter substance entered into the reactions of neutralization even more readily than sulphite. If this action constituted an essentially injurious quality, it must be conceded that so far as neutralizing the gastric juice was concerned, all antiacids were equal offenders. We knew, however, that in the processes of secretion the stomach possessed a relatively wide range of physiological adaptation. The fact of a substance possessing a neutralizing capacity did not alone constitute an essentially injurious quality, since it merely called forth a physiological adaptation. It was only when the neutralizing capacity bore a certain quantitative relation that it became injurious. Dr. Smith said he was not aware of any evidence that peptic digestion was retarded by the presence of sulphites in food, and it might be stated that unless the retardation was reasonably well marked, the action in that particular would probably be within the limits of the physiological adaptability of the organism. In answer to the objection that the sulphites were an irritant to the gastric mucous membrane, the speaker said that such a property was, of course, not peculiar to the sulphites, but was possessed by all diffusible solutes. Chloride of sodium was probably quite as great an offender in that regard. That property, however, was purely dependent on the quantitative relation. In dilute solutions, salines did not possess this property. In other words, we had an action which was not due to an essentially injurious quality of the substance, but which was merely and entirely dependent upon the quantitative relation. Furthermore, there was no reason for believing that the sulphites in food were at all irritating by reason of the sulphur dioxide liberated. It had been maintained that the sulphites produced injury in the blood by causing anemia and by removing oxygen, but the speaker said there was no evidence to that effect. There was no question but that sulphites which gained entrance to the blood were oxidized to sulphates, and to that extent removed oxygen from the blood, but this was so trifling that it could practically be disregarded. Summarizing, it was seen that the injurious action of excessive amounts of sulphites was similar in kind to the harmful effect of other salines, and that such action was due to the quantitative relation and not to any essentially injurious quality of the sulphites; that in the amounts added to food it was not as yet known that harmful effects were produced; that the action of the sulphites in the body afforded opportunity for further experimental study, especially as to the possiiblity of gastric irritation, ferment inhibition, and the production of renal degenerative changes. So far as their action was known, it was their abuse in experimental investigation and not their use in food that had led to harmful results. In conclusion, Dr. Smith said it was not the purpose of his paper to champion the use of sulphites in food, but simply to present the subject for unbiased scientific discussion.

Dr. Willis G. Tucker of Albany, N. Y., said there was much popular misconception concerning food adulteration and the use of preservatives and coloring agents. Many people, including some physicians, obtained their ideas on these subjects largely from the newspapers and sensational articles in the magazines. While there were certain evils in the preparation of our food products which ought to be corrected, nothing was to be gained by deluding the public, and physicians and health officials should not tell people that brewers put nux vomica and cocculus indicus into beer, or that cheap whiskey was a mixture of fusel oil and aqua fortis. Such statements and many others quite as absurd would be found in standard works, so-called, and in recent contributions to high-class reviews and popular magazines. Food preservatives had been used from time immemorial because not many foods could long be kept without them and remain fit for use. When we inveighed against the use of chemical preservatives, we should not forget that salt, acetic acid, and the creosote in wood smoke were as truly chemicals as borax or benzoate of sodium, nor should we entertain the notion that manufacturers of food products vied with each other in their attempts to prepare unwholesome foods, and found strange delight in the use of injurious adulterants and preservatives and poisonous colors. As a matter of fact, precisely the reverse was the case. Ignorant or unscrupulous persons might sometimes use poisons in food, but such intances were rare, and most of us might expect to live out our lives unshortened by poisonous food adulterants, preservatives, or colors. The chief evils against which we should guard were the commercial frauds of substitution, sophistication, and the employment of cheap but harmless makeweights or adulterants; the use of low-grade or inferior material, uncleanliness in the manufacturing processes employed, and, in the case of drugs, the sale of articles of insufficient strength or inferior quality, due often to carelessness in preparation or to decomposition resulting from long keeping or improper preservation. The sulphites, in one form or another, had been used as food preservatives for many years. The sulphuring of wine casks was a very ancient practice, and sulphite of lime had been used for years in preserving cider, and Dr. Tucker said he had never heard of any one suggesting that harm resulted from the practice. The sulphites, bisulphites, and hyposulphites were all more or less employed, more particularly in certain canned goods, like corn, and in meat products, such as sausages and chopped meat. The speaker said he could not learn that there was a tendency to use these agents in increasing quantities, and while he did not think their excessive and indiscriminate use was to be favored, he did not believe that their employment at the present time called for special repressive measures. Such quantities as had recently been reported as found in canned vegetables and in certain wines, ranging from three to 250 milligrams to the kilogram or liter were not very alarming. A great advance would be made if we could secure the proper labeling of food articles, so that compounded, artificially colored, and chemically preserved foods could be distinguished, and purchasers enabled to exercise their discretion when they did their marketing.

Dr. H. W. Wiley of Washington, D. C., gave a brief résumé of the results of the experimental work that had been done in this connection in the Bureau of Chemistry of the U. S. Department of Agriculture. He stated that the administration of sulphites and sulphurous acid in the quantities necessary for the preservation of food produced a noticeable effect upon the consumers, and generally of a hurtful character. A tendency was manifested in every instance to a feeling of illness, loss of appetite, and generally a bad condition. In some cases these symptoms were masked, and not clearly marked; in others they were extremely well defined and easy of detection. The occurrence of this class of symptoms during the administration of the preservative, and their gradual disappearance during the after-period seemed to be conclusive evidence that they could have been due only to the effect of the preservative itself. In many cases uneasy sensations and even pain were developed in the stomach and other parts of the digestive tract, and there were complaints of indigestion, commonly known as heartburn. There were also in some cases attacks of dizziness and palpitation of the heart. In a few cases nausea was developed to the extent of vomiting. The conclusion was inevitable that the administration of sodium

sulphite in the great majority of cases caused headache, sensations of dizziness, occasional nausea, pains in the stomach, and other unfavorable symptoms. In those cases in which sulphurous acid was given in an uncombined state, headache was very commonly produced; there was less tendency to vertigo, but a greater tendency to nausea, and a feeling of exhaustion and weakness. The most dominant symptom was that of headache. It could be stated in a general way that the administration of sulphurous acid in the form of sulphite tended to reduce the weight of the body slowly, and that this tendency was continued for a considerable time after the withdrawal of the preservative. On the other hand, there was a slight increase in the general weight of the body under the administration of the sulphurous acid in the uncombined form. The general effect upon the composition of the feces produced by the administration of the preservative showed that there was a marked tendency to increase the amount of water therein, and thus to act as a laxative. There was also a larger quantity of dry matter excreted in the feces under the administration of the preservative, showing a tendency to produce to that extent an interference with digestion and absorption of the solid bodies during the passage of the food through the intestinal canal. There was thus manifested a marked tendency of this preservative to derange the metabolic process, insofar as the feces were concerned, and this derangement could be regarded in no other light than that of an injurious character. The general effect upon the urine, and that most prominently noted, was in the increase of volume, thus showing a slight tendency to act as a diuretic. This tendency to diuresis was more marked in the cases where sulphurous acid was given in a free state than when it was combined as a sulphite. It was evident, therefore, that sulphurous acid produced a very markedly disturbing effect upon the excretion of the urine, and this could not be regarded in any other light than detrimental. The preservative also had an inhibiting effect upon the phosphoric acid metabolism; it increased the burden upon the excretory organs and the number of albumin reactions in the urine; it diminished the percentage of nitrogen excreted as urea, and slightly increased the percentage of nitrogen excreted in creatinin, thus showing a disturbance of the metabolic activities which could not be considered otherwise than injurious. and finally, sulphurous acid showed a marked tendency to reduce the number of corpuscles, both red and white, in the blood and also to diminish the intensity of the color of the blood.

Dr. J. G. Flanders of the N. Y. State Department of Agriculture said he was glad to hear that such an active interest was being taken by the medical profession in the subject of the healthfulness of food preservatives, and he expressed the hope that this mooted question would soon be settled.

The discussion was continued by Dr. Henry G. Piffard and closed by Dr. E. E. Smith.

Chicago Medical Society.

At a meeting, held November 21, 1906, Dr. Joseph A. Blake of New York City read a paper, by invitation, entitled "The Treatment of Diffuse Suppurative Peritonitis." The paper dealt with the operative and postoperative treatment of diffuse peritonitis, and not with the preventive treatment. The degree of peritonitis in the cases reported was of the type wherein the exudate extended over at least the greater part of the peritoneal cavity, accompanied with definite signs of inflammation of the peritoneum. The extent of the exudate was determined by the return flow irrigator, which method was found reliable. The series included seventy-eight cases of diffuse peritonitis due to appendicitis, contributed by Drs. L. W. Hotchkiss, C. H. Peck, W. Martin, and the author. Thirteen were caused by the perforation of gastric and duodenal ulcers and traumatic perforations of the intestines, all with extravasation of gastric or intestinal contents, contributed by Dr. Peck and the author, and eight cases of typhoid perforation operated on by the author. The series included all the cases of diffuse peritonitis occurring in their services since the treatment to be described was begun. All cases, no matter how severe, were given the benefit of operation. The principles underlying the operative treatment were (1) to remove as rapidly as possible through a small incision the cause of the inflammation; (2) to wash or irrigate the peritoneal cavity; and (3) to use as little drainage as possible and not to attempt to drain the peritoneal cavity. The postoperative treatment consisted in placing the patient in bed in a semireclining position, the administration of large quantities of saline solution by rectum, either by intermittent irrigation with two tubes or by continuous proctolysis; the washing out of the stomach and the absence of food until peristalsis had been established; the administration of morphine immediately after operation, but not after the first twenty-four hours; catharsis was not employed until peristalsis had been established. Washing of the peritoneal cavity was done by the author's double-current irrigator. By it irrigating was done rapidly, requiring from three to five minutes. The advantages of irrigating were the removal of extravasated intestinal contents, and of inflammatory exudates more quickly than can be done by drainage. Irrigating with hypotonic saline solution also prevented the absorption of toxins, not only by the removal of the toxins, but by instituting osmosis by which the water of the irrigating fluids was absorbed into the vessels and the circulation of the patient, while the toxic substances in solution were left behind. Irrigation could be considered as a rapid form of drainage and not attended by its dangers. Deep drains, leading to the peritoneal fossæ, were used only when some material had been left behind after washing, which would tend to prolong the inflammation, such as fibrinous exudates and blood. In all the cases the abdominal wound was drained, the drain passing just into the peritoneal cavity. This was found to prevent suppuration in the wound. In regard to the results in ninety-nine cases there were four in which secondary abscesses formed, two of which were drained, two were not drained. Of the seventy-eight cases caused by appendicitis fifteen died, a mortality of 19.2 per cent., of which seven were not drained and eight were drained. Two of these cases died of complications, the peritonitis having resolved; two were moribund and died shortly after operation; the others died of sepsis and the continuation of the peritonitis. Of the thirteen cases caused by perforation and ruptures of the stomach and upper intestinal tract, four died, a mortality of 30.7 per cent. One of these died of ileus due to adhesions, on the twenty-sixth day after operation; the other three deaths occurred in patients operated on thirty-six hours after perforation. Of the eight cases caused by perforation of typhoid ulcers, four died, a mortality of 50 per cent. In the stomach series, of the cases that recovered, four were drained to the line of suture in the stomach, one to the pelvis, and four were not drained. Of the cases that died, two were drained and two were not drained. In the typhoid series, of those that recovered, two were drained and two were not drained. Of those that died, all were drained. The improvement in the results in the treatment of diffuse peritonitis was due mainly to the rapidity of the operation, with consequently less injury to the peritoneum and shock to the patient; to the use of large quantities of fluids for the elimination of toxins; to giving rest to the intestinal tract, and possibly to the Fowler position. In regard to washing of the peritoneum versus draining, it was still an open question; but definite rules could not be laid down as to the treatment of all cases of peritonitis, as some required irrigation and some not; while, on the other hand, some needed draining and others did better without drainage.

Therapeutic Hints.

Exophthalmic Goiter.—

℞ Cocain hydrochlor.
Pilocarpin. hydrochlor.....āā gr. iss
Aquæ dest.....℥i
M. S. Three drops to the eyes as needed.

Neuralgia.—

℞ Mentholis.
Camphoræ.
Chloral hydrat.....āā ℥i
M. S. Apply locally.

Chromophytosis.—

Acid salicyl..... 2.0
Sulph. precipit.....10.0
Lanolini 70.0
Petrolati 20.0
M. Ft. Ugt. S. Apply locally.
—Brocq.

Chilblains.—

℞ Icthyol.
Bals. Peruv.....āā 10.0
Lanolin. 20.0
M. S. Apply locally.
Or
℞ Ol. camphor..... 5.0
Menthol 0.1
Glyc. tann., 10 per cent.....10.0
Lanolin. 20.0
—*Correspondenzblatt für Schweizer Aerzte.*

Chronic Bronchitis.—

℞ Menthol 0.5
Guiacol 10.0
Tr. eucalypt..... 0.45
Spt. vin. rect. dil..... 20.0
Aq. dest.....160.0
M. S. To be used as an inhalation.
—*Correspondenzblatt für Schweizer Aerzte.*

Erysipelas.—

℞ Tinct. iodi.....℥vi
Olei camphoræ.
Ichthyolis .....āā ℥iii
M. S. Apply locally two or three times a day.
—Smolitcheff.

Cystitis.—

℞ Potassi bromidi.
Sodii bromidi.....āā ℥ii
Extr. belladonnæ fol.....gr. iv
Extr. buchu.....℥i
Syr. sarsaparillæ comp..... ....q.s. ad ℥iv
M. S. Tablespoonful three times a day after meals.
—Pepper.

Tuberculous Enteritis.—

℞ Methylene blue.....gr. ¾
Milk-sugar .....gr. iii
M. S. One capsule of this amount three times a day.
—Renon.

Hemoptysis.—

℞ Hydrastinin. hydrochlor..... .....gr. ss
Quin. hydrobrom.....gr. i
Extr. belladon.....gr. 1-5
M. S. One pill of this composition twice daily.
Or
℞ Calcii chloridi.....℥i
Tr. opii.....♏xxx
Syr. aurantii.....℥i
Aq. menth. pip.....℥iv
M. S. A teaspoonful every two hours.
—*The Medical Press.*

Pneumonia in Adults.—

℞ Pot. iod.....gr. v
Liq. ammon. cit.....℥ij
Spir. æth. nit.....℥ss
Spir. ammon. arom.....♏xx
Aq. chlor.....ad. ℥ss
Ft. mist.
S. One tablespoonful, diluted, to be taken every hour for six doses, and subsequently every three hours.
—Ewart.

Chronic Rheumatism.—

℞ Potassi iodidi.
Sodii salicylat.
Vin. colch. sem.....āā ℥ii
Aq. q.s. ad.....℥iv
S. One tablespoonful four times a day.
—*Maritime Medical News.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending December 15, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	354	179
Diphtheria	289	42
Measles	163	8
Scarlet Fever	185	11
Smallpox	5	—
Varicella	140	—
Typhoid Fever	51	15
Whooping Cough	71	9
Cerebrospinal Meningitis	3	13
Malarial Fever	.....	.....
Totals	1261	277

Transitory Ophthalmoplegia in a Patient with Arteriosclerosis.—Henri Claude has observed a man sixty-eight years old without previous symptoms who suddenly developed diplopia, accompanied by disturbances of equilibration. There was no paralysis of the extremities. Examination some days later showed a diminution in pupillary reaction, diplopia, a slight divergence of the ocular globes, and a diminution of the movements of the latter. There was also a slight ptosis of the two eyelids. No other nervous trouble was detected, save the abolition of the patellar reflex. There was no sign of nephritis or diabetes. The amelioration of the ocular symptoms was quite rapid, and now there remains only a slight paresis of the external rectus of the right eye and a diminution in convergence. These ocular symptoms appear to have been caused by ischemia of the neuclei of the third, fourth, and sixth pair of nerves. The cause of the trouble was arteriosclerosis.—*Gazette des Hôpitaux Civils et Militaires.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended December 14, 1906.

SMALLPOX—UNITED STATES.

		Cases.	Deaths.
Florida, Duvall County, Jacksonville	Nov. 25–Dec. 1	1	..
Madison County	Nov. 25–Dec. 1	1	..
Illinois, Nine Counties	Oct 1–31	88	3
South Bend	Nov. 25–Dec. 1	10	..
Iowa, General	Nov. 1 30	.	1
Louisiana, New Orleans	Nov. 25–Dec. 1	2	..
North Carolina, Greensboro	Nov. 25–Dec. 1	1	..
Ohio, Toledo	Nov. 18–24	1	..
Utah, Salt Lake City	Nov. 1 30	1	..
Washington, Spokane	Nov. 25–Dec. 1	1	.
Wisconsin, Milwaukee	Nov. 18–Dec. 1	26	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Oct. 23–27	2	..
Canada, Nova Scotia—Cumberland County	Nov. 5	..	Epidemic
Ecuador, Guayaquil	Nov. 1–15	..	23
France, Paris	Nov. 18–24	8	..
India, Calcutta	Oct. 21–27	..	3
Italy, General	Nov. 15–22	5	..
Milan	Nov. 9–15	1	..
Mexico, Veracruz	Nov. 18–24	1	..
Persia, Chiraz	Sept. 1–30	..	Present
Guiarrouz	Sept. 1–30	.	Present
Turkey, Constantinople	Nov. 1–18	..	1

YELLOW FEVER.

Cuba, Habana	Dec. 5	3	..
Cruces	Dec. 5–11	3	..
Ecuador, Guayaquil	Nov. 1–15	.	4
Mexico, Veracruz	Nov. 20–26	1	..
West Indies, Barbadoes	Dec. 7	1	On S.S. Maranhense

CHOLERA

India, Bombay	Nov. 7–13		3
Calcutta	Oct. 21–27		28
Rangoon	Oct. 28–Nov. 3	..	2

PLAGUE.

Egypt, Alexandria	Nov. 4–12	2	..
Minieh Province	Nov. 4–11	1	..
Port Said	Nov. 4–11	2	2
Suez	Nov. 1–15	1	1
India, Calcutta	Oct. 21–27	..	10
Japan, Formosa General	Oct. 1–31	32	23
Mauritius	Oct. 19–Nov. 3	50	39

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Original Articles.

ON THE SENSIBILITY OF ABDOMINAL ORGANS AND THE INFLUENCE OF INJECTIONS OF COCAINE UPON IT.

[illegible]

(From the [illegible])

We wish to present a preliminary communication based on animal experimentation on the subject of abdominal pain. Those who have not followed the recent surgical literature on the question of sensibility of abdominal organs are probably not aware of its present status. We might say that it is a perplexing situation. On the one hand there is no fact which is more real than intraabdominal pain. Peritonitis, appendicitis, enteric, biliary, and renal colic, etc., are frequent phenomena in the physician's daily work. On the other hand we are confronted at present with an accumulation of reliable surgical evidence that intraabdominal organs feel neither pain nor other sensations. The discussion of that problem is not of recent date. Since Bichat stated nearly a hundred years ago that he has seen dogs eating their own intestines, many experimental reports have appeared in support of the view that the abdominal organs are devoid of the sensation of pain; but there were just as many reports supporting the opposite view. We are not going to discuss here these contradictory statements of old. The physiological literature of the last few decades contains hardly any investigation on that subject, and in many leading textbooks of physiology there is not a word on visceral pain. The latest large handbook of physiology by Nagel contains a short chapter on that subject, but it is based nearly exclusively on the surgical writings of Lennander. It is the surgeon who now deals with that subject, and for good reasons. For the last quarter of a century surgeons perform, as we all know, very many laparotomies, and since the introduction of infiltration anesthesia by Schleich some of these operations were carried out without general anesthesia. There was then apparently an excellent opportunity of studying the sensibility of abdominal organs—the tranquil and wide-awake patient with a wide-open abdomen could give a better account of sensations than the semi-narcotized dumb beast. Many surgeons have made in recent years more or less systematic observations on the subject in question, but none has carried out a more careful, painstaking, scientific study of our problem than G. K. Lennander, the excellent Swedish surgeon. His observations and conclusions are laid down in a number of articles published in German periodicals. A few years before Lennander, Bier formulated his experiences in a very brief statement to the effect that the intestines can be cut, squeezed, burned, etc., without causing any pain to the patient. Lennander performed a large number of laparotomies under local infiltration anesthesia. Special aids were employed to study the reaction of the patient at every step of the operation. All the numerous observations gave uniformly one result: stomach, intestines, omentum, mesentery, spleen, liver, gall-bladder, kidneys, bladder, uterus, etc., are completely devoid of sensation of pain, and of any other sensations. Only the parietal peritoneum feels pain. According to Lennander the painlessness applies to the normal organs as well as to the inflamed. Many of the earlier observers and a few of the more recent writers who entertained a similar view with regard to the freedom from the sense of pain of the normal organs assumed that inflamed organs feel pain. Most of the present writers, however, seem to accept the view of Lennander also with regard to the inflamed organs.

So far, we had to deal with well observed facts. To the urgent question, What, then, causes the pain in a variety of conditions in the abdominal cavity? Lennander answers as follows: Some pains are caused by pressure, sliding, or pulling of the parietal peritoneum; some other pains are caused by pulling the mesentery, and thus irritating the posterior wall of the abdominal cavity, which is provided with pain fibers derived from the spinal nerves. In other conditions the pain is caused by a lymphangitis and lymphadenitis which reaches the nerves of the posterior wall; and, again, in others some irritating toxic products or chemicals, like hydrochloric acid in gastric ulcer, reach the lymphatics of the posterior wall. In short, all pains come either from the parietal peritoneum or from the spinal nerves of the posterior wall of the abdominal cavity. Other writers offer some slightly different explanation, which, however, we shall not discuss here.

That is the view which is now held by authoritative men practically without any contradiction on the subject of pain and sensibility in abdominal viscera. Internal organs do not feel more pain than dead tissue or our hair and nails. It is obviously a far-reaching view, not only from a theoretical, but also from a practical standpoint. There could be no sense in examining for a painful stomach, a painful liver, a painful appendix, etc., if they are devoid of sensibility; methods in examinations, interpretations, abdominal localization, etc., would have to undergo a radical change.

Casual experiences which we gathered in experimentation on the abdominal viscera made us feel that the last word was not yet spoken on the question of pain in the abdominal organs. We have, therefore, investigated this subject in a series of experiments carried out at the Rockefeller Institute, and we wish to lay before you in a preliminary communication some of our results which we believe are of some theoretical and practical interest.

Our experiments were carried out, or, rather, are still being carried on, on dogs and cats, chiefly on the former. We have employed various methods. The animals were well narcotized by ether, the ab-

domen opened, and immediately closed by temporary ligatures held together by clamps, and when the animal was partly out of anesthesia, one or more of the clamps were taken off, thus permitting one or more of the intestinal coils to come out. These, as a rule, were kept moist and covered with towels saturated in warm saline solution. In other cases the entire animal was kept in a saline bath of 39° C., the viscera being well covered with the warm salt solution. In still other animals the abdomen was opened under local cocaine anesthesia. The presence of sensation of pain was tested by pressing the organs with the fingers or with thumb forceps; by touching them with heated test tubes and by stimulation with the faradic current, and watching the reactions of the animal to these irritations. In all the stimulations great care was taken to avoid pulling the mesentery or touching the parietal peritoneum. We have tested the various parts of the gastrointestinal canal, the spleen, the kidneys, uterus, bladder, etc., but our present statement refers essentially to the gastrointestinal canal which we have studied mostly.

All the experiments lead up to one unmistakable result, which can be stated in a few words: the normal gastrointestinal canal possesses the sensation of pain.

However, that result alone was not yet satisfactory to us. We could not doubt for a moment that the actual observations of Lennander and other surgeons of high standing were perfectly correct. Why, then, this difference in their observations on man and our experiments on animals? Can there be such a fundamental difference between man and beasts? This is not very probable. But besides the difference in the subjects of the observations there was a difference in the conditions under which both observations were made. Lennander operated essentially under Schleich's infiltration anesthesia. Schleich's mixture, as Lennander employed it, consisted of five centigrams of cocaine, one centigram of morphine, and two hundred cubic centimeters of a normal salt solution. It seemed advisable to us as a further step in our investigation to study the possible effect of these ingredients upon the sensation of pain in the abdominal organs. We began with cocaine. The hitherto known effect of this drug is its local anesthetic effect. Lennander and other surgeons employed it for this very quality to deaden the pain during the incision apparently without the remotest idea that the drug could also affect the sensibility of the distant isolated gut. We, nevertheless, decided to test it. After establishing the undoubted sensitiveness of the intestines, etc., two centigrams of cocaine were injected into the tissues of the abdominal wall, near the incision. We were then surprised, indeed, when we discovered that a short time after this injection all sensations disappeared from the intestines; even a very strong electrical stimulus no longer produced any reaction or effect. After thirty or forty minutes the sensations returned. Such observations were then repeatedly made, and invariably with the same result.

Now we could hardly think that the cocaine crept over by capillarity or by some other manner to the intestines, and the observed anesthetic effect was a local one. Neither did it seem probable that the cocaine crept along the spinal nerves to the spinal cord and there came in contact with the pain-carrying nerve fibers from the intestines. The most reasonable explanation was that the anesthetic effect was produced through the circulation. That would mean that cocaine had not only a local, but also a general anesthetic effect. This assumption was easily tested. The cocaine was now injected in parts distant from the abdominal cavity, in the thighs, arms, pectoral muscles, etc. The anesthetic effect upon the intestines was prompt and complete just the same.

In further experiments we have established that one centigram was sufficient to bring out the desired effect, and this even in large dogs weighing 14 kilos.

We have, then, thus far established two facts: that the gastrointestinal canal possesses the sensation of pain, and that the subcutaneous or intramuscular injection of a comparatively small dose of cocaine is capable of abolishing this sensation for some time.

We believe that we are now justified in offering the following interpretation of the surgical observations. While we have not the slightest doubt of the correctness of the facts, namely, that when operating under Schleich's infiltration anesthesia, the abdominal organs are completely anesthetic, we suggest that this anesthesia is due essentially to the general effect of the cocaine employed, and not to a normal absence of sensation in these organs.

Of many details of our investigations which are by no means finished we shall mention here only a few which might have a practical bearing.

In the course of the investigations we exposed some intestinal coils to the drying effect of the air in order to bring on some degree of inflammation, and we then found that inflamed organs are distinctly more sensitive than normal ones; in fact, the sensitiveness is often greater than that of the skin. Now Lennander and other surgical observers stated that in their experience also inflamed organs are completely anesthetic. We have, therefore, tested the effect of cocaine upon the exaggerated sensitiveness of inflamed intestines and found that a somewhat larger dose of cocaine, say three centigrams, will completely abolish all sensations also from inflamed organs.

Another interesting point is the observation that the parietal peritoneum also loses its sensation by a hypodermic injection in any part of the body, but the anesthesia sets in here later and disappears earlier than in the internal organs. It is possible also that the degree of the anesthesia is lower, but we are not yet ready to make any positive assertion on that point.

There is a striking difference in the rapidity of the onset of the anesthesia between an intramuscular and a subcutaneous injection of the cocaine. When injected intramuscularly, the anesthetic effect might be already complete after two or three minutes. Dr. Auer and one of us (M.) reported some time ago on the rapidity of absorption from the muscular tissue of such drugs as curare, adrenalin, and morphine. We can now add cocaine to this group.

An interesting and new fact is the observation which we made on the effect which the injection of a small dose of cocaine exerts upon the psychical condition of the animal; it promptly quiets its excitement. The animals, which were very restless, howling, and crying, became perfectly quiet one or two minutes after an intramuscular injection of cocaine. It may be claimed that the quietness was due to the abolition of the pain. We have tested it on etherized but not operated dogs. On awakening from the ether they howl just as much as operated animals; the howling is not due to pain, but to the ether intoxication. An injection of cocaine quiets them promptly. The psychical effect seems to last longer than the anesthesia of internal organs. The injection has no narcotic effect, the animal is apparently wide

awake, and follows one with his eyes. The lid reflex is not abolished, but the cornea is anesthetic, and the pupil is widely dilated. Whether the general sensibility is also reduced, that question we are not yet ready to answer for the present.

We may add that we made a number of observations dealing with the anesthesia of the intestines reported to have been observed in cases in which cocaine was not employed; but we do not care to embody them in this communication. Our studies are, in fact, as stated above, still in progress.

Résumé.—Our communication may be summed up as follows: The prevailing view based upon exact surgical observations is that the abdominal organs, whether normal or inflamed, possess no sensation of pain. We have found in animal experimentation that the sense of pain is present in normal organs, and that it is considerably augmented in inflamed organs.

We found, further, that a subcutaneous or intramuscular injection of cocaine is capable of completely abolishing this sensation in normal as well as in inflamed organs.

We therefore offer the suggestion that the anesthesia of the internal abdominal organs observed by the surgeons was due to the use of cocaine.

We have finally found that the injection of a small dose of cocaine has a calming influence upon the excitation of the narcotized and operated animals.

It is obvious that both new observations with regard to the effect of cocaine are capable of practical application in medicine.

SCHLÖSSER'S TREATMENT FOR TRIGEMINUS NEURALGIA.*

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It is unnecessary to describe to the members of this society the clinical picture of trigeminus neuralgia, with which we are all unfortunately familiar. I say unfortunately, because the disease inflicts upon the patients the most horrible suffering, which quite frequently leads to suicide, and because thus far all operations, with the exception of gasserectomy, have proved valueless in so far that, if they ever did any good, it was only for a very short while; and even Krause's operation, with its high mortality corresponding to its seriousness, does not prevent recurrences.

Any proposal of a new method is therefore sure to attract the attention of surgeons, which doubtless would have been the case with Schlösser's treatment also, if his first publication had not happened to be somewhat buried in the report of the Ophthalmologische Gesellschaft of 1903, where surgeons are not likely to look for information.

Schlösser, Professor of Ophthalmology in the Royal University of Munich, published again, in the *Berliner klinische Wochenschrift*, No. 3, 1906, a paper on the treatment of neuralgias by alcohol injections, to which Dr. George W. Jacoby called my special attention. We were both equally strongly impressed with the proposed method of treatment, and during my visit last May to Munich I was shown and taught the method by Professor Schlösser in the most courteous manner.

As long as we know practically nothing about the nature of trigeminus neuralgia—the microscopical examination of excised nerves shows nothing—it seems improbable that one should be able to devise a methodical systematic treatment of the disease. Nevertheless, Schlösser has found in the course of his experiments since 1900 that alcohol, especially in the concentration of 80 per cent., is detrimental to nerve tissue. Thus, an injection of about 1 or 2 c.c. of 80 per cent. alcohol into a sensory nerve will produce, after a short period of pain, a complete anesthesia, which disappears after a number of days, usually about five or six. It is a strange fact that, together with the anesthesia, the tendency to neuralgic attacks disappears, that is to say, the feeling returns, but not the pain. This is, in few words, the *raison d'être* of the procedure.

Permit me now to describe, in short, the technique. To make sure that one really injects into the nerve affected with neuralgia, Schlösser injects into the foramen through which the respective branch emerges into the face, namely, for the first branch the foramen supraorbitale, for the second the infraorbitale, and for the third the dentale inferior. For this purpose Schlösser has devised for his syringe a set of needles of such thick tubing that the edge does not cut at the point of the needle. In that way no arteries, or even veins, are injured by the injection, incredible as it may seem. This point is of special importance, if the injection has to be made into the ganglion Gasseri, in case all three branches are affected. It is impossible to describe the technique exactly, at least in a short paper. It must suffice to say that, in case of an injection into the supraorbital foramen, the needle, being pushed sagitally along the sometimes not very well-defined foramen, must not penetrate the periosteum of the orbit; otherwise the alcohol injected would produce a very pronounced and possibly dangerous retrobulbar edema.

The injection into the second branch is really the easiest, and does not involve any danger.

The injection into the third branch presents the most difficulties; at least, it has given me most trouble. The use of the curved needle devised for the third branch has been given up by Schlösser to a great extent, for reasons which I can appreciate, as it is extremely difficult to feel around the corner, so to speak, in an operation where everything is dependent on the sense of touch.

I may mention here that a successful injection into the inferior dental foramen invariably produces a more or less pronounced tetaniform spasm of the pterygoid and masseter muscles, a mild form of lockjaw, which may last from several days to several weeks. As it is only partial, the patients, who are more or less accustomed to this state of affairs, are quite willing to put up with the condition, if warned beforehand.

To inject into the foramen ovale we use the following procedure: The longest of the three straight needles is pushed through the cheek of the afflicted side about opposite the last molar, the index finger of the left hand is inserted into the mouth as a guide behind the last molar, and the needle then shoved under the periosteum upward along the external pterygoid plate until it is arrested, which takes up about 2¼ inches of the needle. If the handle of the needle, so to speak, is still further lowered, another quarter of an inch can be gained in pushing the needle still further upward toward the base of the skull, when it is definitely arrested. If we feel our way then, backwards, scraping along the bone for about three-eighths of an inch, we feel how the needle enters the foramen ovale, where the injection takes place. It would lead a little too far if I would try to explain how the foramen rotundum is reached without injury to the neighboring parts; but it can be safely done.

*Read before the Surgical Section of the Academy of Medicine at its stated meeting, December 7, 1906.

One understands at once that the technique is a peculiar one, and has to be acquired, as far as possible, on the cadaver, although one is surprised at the difficulties one meets after apparently mastering the technique on the cadaver. I wish to express here my thanks for the great kindness with which Dr. Haynes has put his cadaver material and other specimens at my disposal in my attempts to learn the technique.

But the technical difficulties, great as they are, are not the only ones. The principal thing is the clinical experience which enables us to judge which branch to treat, one or several, or when to attack the ganglion. This is one of the reasons why Schlösser so far has not described his method in detail, because he feels that if it is to become the common property of surgeons and physicians, the minutest rules will have to be given to meet all purposes. This he is doing now by writing a treatise, which will be published the beginning of next year, and of which he has asked me to prepare an English edition.

The injection is done without narcosis; first because it is really not overpainful, and secondly, because one needs the help of the patient in determining whether a small test-injection produces a tingling sensation along the course of the nerve.

The result of a successful injection is at once apparent; for a minute or two there is a sharp, burning pain, similar to a mild attack, to which the patients, who are accustomed to such suffering, do not much object. After an hour or so, there is sometimes quite severe pain for one or two hours, interrupted by typical attacks. Three to four hours after injection, at the very most, the patients are surprisingly comfortable. In one of my cases, the patient, who had attacks every two minutes, who needed a day and night orderly to prevent him from committing suicide, was after the first successful injection free from pain for the first time in years, and slept all night without the administration of any drug, while previously all known sedatives and anodynes, given in dangerously large doses, had proved of no avail. This first injection is usually followed after twenty-four hours by a second one, if the edema is not in the way; a third one the next day, and, if necessary, a fourth one a few days later. Then these patients are cured until the recurrence sets in. This takes place after ten to twelve, to fourteen months. Then the attacks are much lighter, and yield to one or two injections.

This brings me to another point, and that is that since we know that all treatments, even including gasserectomy, are liable not to prevent recurrence, that treatment is the best which permits repetition.

The injection, if executed by a specially trained and skilful surgeon, guided by experience, is without danger, and in its effect is little short of marvelous.

My own personal experience is, in consequence of the short time since I learned the method, naturally limited. The time elapsed since I treated my cases is much too short to judge personally when recurrences are liable to appear. In this respect I have to rely upon the experience of Dr. Schlösser, whose clinical faculties and sane judgment have impressed me very strongly. I have had opportunity to see with him two recurrences, one after eleven, the other after sixteen months; in both cases the patients gladly came back before their condition had become really bad, to submit to repetition of the treatment, to which the attacks promptly yielded.

The treatment is, of course, not limited to trigeminal neuralgia. There is no reason, for instance, why we should not inject the minor occipital nerve if the neuralgia is situated in its region.

If only for the sake of completeness, I wish to mention that Schlösser has extended his method to the treatment of tic convulsif as well as tic douloureux, when he partly paralyzes the facial nerve by injection in the region of the pterygoid process into the surrounding tissue of the nerve. In these cases the dosage, as well as the avoidance of the sheath of the nerve itself, seems to be especially difficult, so as not to paralyze the nerve in question too long; but even here, with the exception of two cases, in which a paralysis resulted for a period up to four months, which afterwards yielded to electrical treatment, he had complete success. Besides that, he has treated mixed nerves, like the sciatic. He claims, and I have every reason not to doubt his word, that even here he has had no serious mishaps with any lasting injury to the motor fibers of the nerve. But, as I have had no personal experience as yet with these nerves, it must suffice to call your attention to the possible scope of the treatment.

I am quite willing to assume the blame of basing my paper upon only such a limited experience as I have had, all the more as I have not had a single failure. In fact, if I had not had more than one single case, cured for the time being, that is, free of attacks, I would not have hesitated to call your attention to this ingenious treatment, which promises to make all operative procedures for these unfortunate sufferers unnecessary.

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THE *X*-RAY *VS.* SURGERY IN SARCOMA, WITH REPORT OF CASES.*

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WHILE sober judgment and experience have finally definitely condemned the *x*-ray in the treatment of carcinomatous conditions, except in the case of superficially placed epithelioma, to the rôle of a palliative in inoperable cases, its use in sarcoma is still more or less an open question. The writer's experience, extending over a period of time sufficient to observe and treat recurrences, and to feel at least encouraged in other cases that recurrence may happily not be looked for, may prove of some slight value in adding something to the solution of this vexed question. Before proceeding to an analysis of the cases and cause of results, I should like to be placed upon record as believing that all neoplasms of whatever kind and wherever situated, with the possible exception of superficial epithelioma, in which a plastic surgical procedure will not result satisfactorily, should at once be subjected to operation. There are, however, many cases in which, owing to the flat refusal of the patient to submit to operation, to the fact that the tumor is already found inoperable on first examination, and also to the further fact that in a certain class of tumors the cancer, small in itself, will require a grave or disfiguring operation for its removal, the surgeon is compelled to weigh the chances of radiology in effecting a cure. In explanation of the more favorable results obtained by the ray in sarcoma than in carcinoma, I will state what I believe to be the action of the ray in these two classes, which may serve to elucidate an obscure point.

We know that in the *x*-ray tube we have two principal classes of rays useful in therapeutic work. The cathode ray, which has merely the effect of sunlight intensified, and which reacts to the ordinary laws of light, *i.e.* producing hyperemia and sclerosis, not

*Read at a meeting of the Surgical Section of the New York Academy of Medicine, December 7, 1906.

penetrating a dense medium, and so not extending in effect more than 6 mm. below the surface of the skin. The *x*-ray, on the contrary, penetrates all media with intensity depending upon the density, has a selective action upon highly organized tissue, and produces upon epithelial cells first a stimulation, and secondly by overstimulation, a destruction by necrosis, and fatty degeneration of the cell elements. It also causes an obliterating endarteritis by splitting up and destroying the endothelial lining of the terminal blood-vessels, and so deprives the growth of nourishment. It will readily be seen that all structures from the skin down will be more or less subject to the same influence, with a resulting destruction of tissue fatal to our case. As a matter of fact, however, by the time the ray has penetrated to the depths of the tumor, only the first effects of stimulation and, to a slight degree, the endarteritis is effective, and, instead of a destruction of the tumor, stimulation results, with more rapid growth and formation of metastases. As for the disappearance of masses of glands in many cases rayed, pathological examination by Dr. Henry Brooks of glands in cases rayed, and afterward operated upon by myself, have shown that the glands which have disappeared are the seat of nonmalignant inflammation; in no cases where the glands were involved in the carcinomatous process did we find any change.*

The action of the ray in sarcoma is the same as in carcinoma, but owing to the different reaction of tissue the result is far different. The stimulation in these cases causes the changing over of the embryonic type of connective tissue into the adult type, a change from preponderant cells to a tumor mostly composed of fibers; the obliterating endarteritis diminishes the amount of nourishment, and the final result is a fibroma, with possibly latent sarcoma cells included in the mass.

This, I think, will explain the results reported by Pusey, Coley, and others, results with which I entirely agree, as a perusal of cases below will show. Nearly all cases of sarcoma treated by the *x*-ray recur, and in one of my cases this was even true for the third time; but I am somewhat more optimistic than some observers, in that I have found many react to the ray just as kindly the second or the third time as the first. Whether I shall be obliged to go on treating these patients for the rest of their natural lives, or whether they will finally cease to be favorably affected as some of them already have, I have no means of knowing, but at any rate if I can prolong for one or more years in apparent health even a small fraction of these patients, I shall feel that in the *x*-ray we have a remedy which, the knife proving impossible, is better than any other so far suggested.

If we accept as true the theory which I have named above, it follows that in treating our cases we will employ a tube as rich in *x*-rays and poor in cathode rays as possible. This means a very high tube, lighted by a current of considerable amperage, and produced by a coil or static machine of many plates, a small static machine not being effectual in lighting the tube. The distance should be considerable, never nearer than six inches, and usually nine or twelve, to prevent the action of the remaining cathode rays upon the skin. Reaction, as proved by the diminution in the size of the tumor, is usually slow at first. This depends, of course, upon the relative softness of the tumor or preponderance of cell elements. The softer the tumor the quicker the response. In many cases several months have elapsed before there was an appreciable diminution in its size. When our treatment is complete, if we look for an entire disappearance of our growth, we shall be disappointed, for a fibroma will remain. I am in favor of keeping my patients under observation for a considerable time after cessation of treatment, at first once a month, and later once in three months for several years, and resume the ray immediately in case of any change in the remaining mass.

*I have treated this subject more at length in a report of cases of carcinoma of the breast *x*-rayed and afterward operated upon by myself, published in the *Post-Graduate Magazine*, December, 1906.

Case I.—Admitted May, 1903. Pathological examination reveals lymphosarcoma. Examination shows an enlargement of the entire cervical region, beginning posteriorly at the mastoid, extending to the symphysis, and inferiorly to the clavicles. The mass seems to consist of innumerable glands, mostly discrete. The enlargement is so pronounced as to present an almost unbroken contour from the angle of the jaw to the sternum and clavicle. The mediastinum is flat on percussion. The patient has an aneurysmal cough. Enlarged glands are felt in both axillæ. No enlarged inguinal glands. No enlargement of the spleen.

By July the cough and dyspnea had entirely disappeared. The neck had diminished markedly in size, and many of the glands had completely disappeared. There was great improvement in the general health. Clavicles could now be outlined, and the contour of the neck was plainly visible. Patient insisted upon going to the country, although warned that such a procedure would probably prove fatal.

In September the patient returned, with dyspnea and cough as bad as ever. Glandular enlargement also increased about one-half over last examination. Treatment resumed as before. On January 1, 1904, the growth had to all appearances disappeared.

On July 1, 1904, the patient returned for treatment. There was a tumor behind the right ear as large as an egg. The glands above both clavicles were much enlarged, but there was no general cervical enlargement as before. Cough and dyspnea have returned.

May 1, 1905. The patient has ceased attendance at the clinic. At last appearance there were practically no glands to be made out. The cough had disappeared and her general condition was very good.

I have been unable to keep in touch with this case, but my prognosis is bad. The most remarkable feature of this and other cases of lymphosarcoma, pseudoleukemia, and splenomyelogenous leukemia is their rapid reaction to the *x*-ray, but unfortunately their recurrence is just as rapid, and, with the exception of Senn's case, I can find no authenticated case in this country that has remained well long enough to be safely ranked as a cure. The late reports from the German clinics* are quite favorable. I have been able to collect nineteen cases of reported cure, although the length of time that patients have remained without symptoms is not stated. In all these cases of true and pseudoleukemia a rapidly diminishing number of white cells and return to normal of other cell elements is a feature, but after a time in the cases I have seen this has been followed by a destruction of red cells and anemia of grave character.

As we should expect from our accepted theory of the action of the *x*-ray, a toxemia is a regular feature of these cases when the ray is pushed too hard, and invariably follows when the masses have rapidly disappeared. This is a grave danger, and

*Escherich's clinic.

the onset of symptoms of intoxication should be the signal of immediate suspension of the rays until their complete subsidence.

Case II.—This case was presented at a meeting of the society last spring, and is one of melanotic sarcoma. A woman, seventy-four years of age, who came to our surgical clinic two years ago, with a lesion upon the heel about the size of a quarter, ulcerated with a hard indurated border. Pathological examination confirmed the diagnosis of melanotic sarcoma. Amputation was suggested, but refused, and, as a last resort, I subjected her to the *x*-ray. The tumor very rapidly diminished in size, and disappeared at the end of the seventh month. I have been unable to discover any metastatic deposits. Of course, it is as yet too early to claim a lasting cure, nor would I have advised the *x*-ray except as a last resort.

Case III.—Recurrent sarcoma of the glands of the neck. This patient was operated upon three years ago. She presented herself at my clinic in March, 1905, with a growth incorporated in the scar, about the size of an English walnut. The patient was subjected to the action of the *x*-ray, and in April of last year I reported the case as one with disappearance of tumor. In November, 1906, the patient returned, suffering great pain in region of the ear and shoulder. No tumor could be made out, but, believing that pain is due to pressure from a growth, I have again begun treatment.

Case IV.—Admitted to clinic July, 1903. Examination disclosed a tumor on the right side of the head, about the size of a large egg. Pathological diagnosis, spindle-cell sarcoma involving the dura mater. By January, 1904, the tumor was hardly raised above the level of the scalp. Skin and subcutaneous tissue were necrotic, and sloughing over an area about the size of a dime, the result of pushing *x*-ray treatment.

In April, 1904, the patient was transferred to a Baltimore hospital. Improvement was very marked. An irregular depression alone remained. Both tables of the skull were eroded by growth.

November, 1904. A note from the patient informs me that he is quite well and that the wound is healed. While I do not at all count this as a cure, I present the record of the case as showing what can be done for a time at any rate in this class of malignant conditions.

Case V.—This patient was admitted to the clinic January, 1903, with a mass about the size of a child's head in the left side of the abdomen and pelvis, hard, nodular, and firmly attached to the inner surface and crest of the ilium. The patient was exceedingly cachectic and emaciated, about forty pounds under weight. Chronic intestinal obstruction had been caused by the tumor by mechanical action. An exploratory celiotomy revealed a spindle-celled sarcoma of such size and so adherent to the surrounding structures as to be inoperable. Diagnosis made by Dr. Brooks. We began treating this patient with the *x*-ray within a few days after operation, not waiting for the wound to heal completely, although primary union seemed established. The first effect of our ray was to break down this cicatrix, and within two weeks our wound was as widely opened as though no sutures had been employed. I might say, in passing, that this is a common experience if newly healed wounds are treated with the ray. We, however, persisted in our treatment, suspending the same only once for two weeks on account of a small burn, the result of the use of a low tube by an inexperienced assistant at close range.

January, 1903. Patient's strength and nutrition have improved. At the present time he has ninety-five per cent. of hemoglobin, weighs one hundred and ninety pounds, five pounds under normal. Tumor has practically disappeared. Bowels are normal. Seems in perfect health.

December 1. Patient returns to clinic with a recurrence of the tumor, about the size of a grapefruit, with beginning cachexia. Treatment resumed as before. On April 1, 1904, the tumor had again disappeared except for cicatricial tissue. The patient seemed to be in perfect health.

September, 1904. Patient has once more returned, with a recurrence about the size of a lemon.

January 1, 1905. Twelve weeks' treatment has been sufficient to produce a disappearance of the second recurrence.

October, 1906. To date there has been no further recurrence. A small mass of fibrous tissue about the size of a large walnut remains.

This is certainly a case in which the patient was doomed within three months of his first appearance at the clinic in January, 1903, and yet to-day he is alive and well.

Case VI.—Diagnosis: Recurrent sarcoma of the breast. Admitted May, 1903. Patient had a radical operation three months ago. Recurrence began before healing was complete. Examination showed an ulcerated area about three inches in diameter in the site of the wound, involving all the tissues down to the fascia covering the chest wall.

July 1. The ulcer has disappeared. No further evidence of recurrence.

March, 1904. Patient returns with an ulcer about the size of a quarter, surrounded by scar tissue. Treated as before.

June 1. Ulcer has again disappeared. The site of the wound seems perfectly healthy.

October, 1906. Patient remains well up to the present time.

Case VII.—Admitted November, 1903. About one year ago the patient noticed a fusiform swelling on the lower part of the right leg on the outer side, just above the malleolus. A section was removed and found to be osteosarcoma. High amputation was urged, but refused by the patient.

January, 1904. Under treatment the growth has increased in size. The patient's general health is much depreciated. Amputation again advised and refused.

On March 1 the growth had markedly diminished in size. The patient's general health had improved. Weight had increased ten pounds and anemia had diminished.

November. Patient has been under treatment since September 1, more as a precautionary measure than anything else, as no tumor can be distinguished either by palpation or the fluoroscope. Gain in weight about twenty pounds. Patient discharged with warning of a possible recurrence.

In March, 1905, patient returned to the clinic with a rapidly growing tumor at the site of the old cicatrix. Having been about the clinic so long, and become a sort of assistant, he was allowed to treat himself. This has proved a warning to me in allowing inexperienced assistants to focus the tubes, as in six weeks' time he developed a third-degree *x*-ray burn. Treatment had to be suspended, the tumor rapidly developed, increasing very greatly in size. The patient became cachectic and failed rapidly, and in April I performed a high amputation of the thigh. This healed kindly, and the patient's health seemed quite restored. He soon, however, developed a mass of inguinal glands, which were removed by Dr. Edward Peterson, and were found

to be sarcomatous. Upon my return early in September I removed a second recurrence, but the patient rapidly developed metastases in the cord, lungs, liver, etc., and died in October, 1906.

Whether the rapid growth of the recurrence in this case was caused entirely by the faulty treatment or whether it was inevitable I hesitate to say, but I feel that the prognosis in osteosarcoma is more unfavorable than in any other type, with the possible exception of melanotic sarcoma.

We have found in tuberculous conditions that it is rather easy to gain control of the process when involving the glands or synovial tissues, but radiographs show no change in the bones after any amount of treatment. As the tuberculous tissue is much less resistant to treatment than sarcoma, we would argue that in osteosarcoma our prognosis would be still more unfavorable.

Case VIII.—This patient was referred to me by Dr. Peterson after operation for sarcoma, involving the skin of the forehead in the median line just below the line of the hair. A prompt recurrence involving the outer and middle tables of the skull suggested the futility of further operation, except an extremely radical one. The eroded area, when I saw the case, was about the size of a half dollar, and the involved area extended about one-half inch beyond. Treatment with the *x*-ray in the usual manner was begun September, 1905, and after seven months I exhibited the case as one with entire disappearance of symptoms. The skin was smooth and sound, and there were no traces of the tumor to be seen. The patient remained in perfect health until September of this year, when she returned with a recurrence about the size of a dime over site of cicatrix. She has been under treatment as before, and has yielded just as kindly to the ray.

Case IX.—Recurrent sarcoma, involving the orbit, referred September, 1904, by Dr. Roosa after enucleation of the eye. At the time of operation it was found impossible to get beyond the involved area in the orbit, and when I saw the case the orbit was nearly filled with a grayish mass of sloughing tissue. Pain was extreme, so that opiates had to be used during the first six weeks of treatment. After this time pain was almost entirely relieved and the mass rapidly broke down and discharged. All evidences of malignancy disappeared after forty treatments, and the patient was discharged with advice to return on the slightest recurrence of the symptoms.

In March, 1905, the patient returned with a history of pain in the frontal region. As no growth could be made out, and the sinuses by fluoroscopic examination appeared normal, I was inclined to believe that the pain was due to cicatricial contraction. Treatment was administered at intervals for three months without relief, but with no further evidence of tumor. In the summer of 1906 the patient still showed no evidence of new growth, but the pain continued.

Case X.—Recurrent sarcoma, also involving the orbit. Referred by Dr. A. E. Davis in October, 1903, after an operation for enucleation of the eye. In this case the growth had made further progress when first seen, and involved the antrum and left nasal fossa, and had eroded the plate of the superior maxilla. The prognosis was very bad. The patient showed little improvement for months, finally disappearing in April, 1904. In September of the same year he returned, and I was greatly surprised to find not only no extension of the process, but that parts of the tumor had disappeared, and that the granulations looked healthy in places. He continued his treatment until January, 1905, when the neoplasm rapidly increased in size and involved the adjacent areas, and he died with a pronounced cachexia.

Case XI.—Sarcoma of the Pelvis. Recurrent. Referred by Dr. Robert T. Morris. The patient was operated upon in the fall of 1904 for a growth which proved to be sarcomatous, springing from the right ilium about the size of a muskmelon. The tumor promptly recurred, and when I saw the case in September, 1905, it had grown to occupy the entire right side of the abdomen from the ribs to the crest of the ilium, and extended down somewhat into the pelvis. Operation was refused. The patient was failing rapidly in flesh and looked quite cachectic. Treatment with the *x*-ray was at once begun, and continued without intermission three times a week for one year. In September, 1906, a mass, probably cicatricial in character, about the size of an egg, alone remained. The patient's health and flesh were normal, and he was doing a full day's work. I am now having the man report at intervals of a month.

Case XII.—Sarcoma of the Pharynx. This patient appeared in the clinic in April, 1904, with a mass under the angle of the left jaw, extending toward the mastoid, and projecting into the pharynx above the tonsil. Sarcoma was suspected, but as patient refused operation the *x*-ray was applied in the usual manner until October, 1905, when, the mass not diminishing in size and the pain becoming unbearable, the patient was prevailed upon to accept operation. The operation proved very difficult, it being impossible to remove the growth entirely. On pathological examination it proved to be sarcoma. Since the operation the tumor has recurred in spite of further applications of the *x*-ray.

Case XIII.—Mixed tumor, fibrosarcoma and adenoma of the parotid gland. Admitted to treatment November, 1904. Patient had had a small growth in the parotid region for five or six years. Operated upon in October, 1904. It was found impossible, however, to remove the growth without destroying the facial nerve, so intimately incorporated was it in the tumor. The growth was the size of a walnut. By June, 1905, the tumor had diminished more than one half. In September, 1905, two small nodules about the size of a bean remained.

I did not see the patient again until April, 1906, when I found some enlargement of the growth. Treatment was begun once more, and continued until June 1, with the result of once more reducing the mass to its former condition. In September, 1906, an examination of the patient revealed only a very small mass, probably connective tissue in character.

Case XIV.—Sarcoma of the glands of the left side of the neck, operated upon by Dr. Samuel Lloyd; recurrence. At the time I saw this patient, January, 1905, he also had a deposit in the left pleura of considerable extent. He was suffering great pain in his side and back, was quite cachectic, and seemed a hopeless case. I consented to use the ray, thinking we might relieve his suffering. In this case I administered the treatment for fifteen minutes over the chest, also for same length of time over the cervical glands, and used a specially constructed tube for ten minutes additional, to try and get at the sphenoid. The case being hopeless, I disregarded the toxic effect of prolonged dosage, thinking only of the analgesic effect. Much to my surprise, the pain in the chest and difficulty in respiration diminished rapidly, the glands in the neck also decreased greatly in size, until in September, 1905, had it not been for the pain in the head ascribed to the growth in the sphenoid, the patient

would have been in fair condition, having regained much of his lost flesh. Treatment was continued during the winter three times a week, but the pain in the head became so violent that it was necessary to use morphine in considerable quantities. I do not think we ever affected the growth in the head by the ray.

In March, 1906, the patient died. At the time of his death the glands in the neck had nearly disappeared, and the pain and growth in the pleura were practically absent. On percussion I was unable to make out more than a thickening of the pleura.

In nearly all the cases presented I administered thyroid extract in dosage as large as it could be tolerated as part of the routine treatment, and found that the cases were more favorably affected and resolution of the masses was more rapid under its use.

Of the cases presented, five patients are dead or unimproved, six have no further symptoms of malignancy, and three are somewhat improved.

This does not include all the cases of sarcoma treated during the past four years. Many were treated for too short a time to form any opinion as to the result, some disappeared after several months with apparently favorable results, but we have been unable to keep in touch with them. Quite a number were so evidently hopeless when seen that it would be unfair to include them in this list, which contains only those which we were able to keep under observation for a considerable period of time. I think the cases presented fairly represent the work done and results obtained.

In conclusion, I wish to reiterate that this paper is in no sense a plea for the *x*-ray in sarcoma, but rather an effort to place the agent in its proper place. In these days when overenthusiasm and extravagant claims have done so much to discredit the entire range of radiotherapy, I wish if possible to point out its narrow but nevertheless positive field of usefulness in this condition.

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NOTES ON FEVERS IN THE TROPICS.

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HOLUALOA, KONA, HAWAII.

RESIDENT PHYSICIAN NORTH AND SOUTH KONA; IN CHARGE THE DOCTORAGE; MEMBRE DE LA SOCIÉTÉ DE MÉDECINE ET D'HYGIÈNE TROPICALES, PARIS.

If the tropics have not produced the investigator and discoverer himself, warm countries have at least furnished him with an incentive as well as the material and conditions necessary for the successful prosecution of his work. It was a French surgeon at Algiers who discovered the parasite of malaria, and Ross of India who demonstrated its complete life cycle. Celli, of a subtropical country, added valuable contributions, aided by Nott, Koch, King, Flügge, Pfeiffer and Manson. Koch sought the jungles of Africa, and young Manson lost his life in malarial regions, whither he had gone in search of scientific data.

Hawaiian Fever.—At the last annual meeting of the Hawaiian Territorial Medical Society, Drs. Mori and Kuramoto of Honolulu made a short but interesting report on work they had done in the investigation of some of our obscurer fevers.* They said:

"About twenty years have elapsed since Japanese people began to immigrate to these islands, and during this period about a thousand of them fell as victims of a species of typhoid fever, which occurred sporadically and epidemically. Dr. T. Iwai designated the fever as 'Hawaiian fever,' when it occurred with a severe epidemic type at Hilo, eighteen years ago, finding a slight difference from typhoid fever in its clinical aspect.

"Generally speaking, the clinical symptoms of Hawaiian fever are those of a mild infection of typhoid fever, but in analyzing the symptoms the former differs from the latter in the following respects: (1) In typhoid fever there are premonitory symptoms of a few days' duration; in Hawaiian fever there were none. (2) Typhoid fever is characterized by a gradually increasing daily rise in temperature. In Hawaiian fever the rise is more sudden and reaches its acme in from three to four days. At the fastigium the remissions are marked in Hawaiian fever, while they are very slight in typhoid fever. In typhoid the fall of temperature is gradual, the descent being steplike. In Hawaiian fever the fall, in the largest proportion, is sudden, and only in a few was the descent by lysis. (3) The tongue in typhoid is dry, brown, and furred, while sordes is not uncommon. In Hawaiian fever the rule is that the tongue is moist and covered with a white coating. (4) The spleen is not palpable usually in Hawaiian fever. (5) The tympanites is not extensive nor distressing in Hawaiian fever, as in typhoid. (6) Delirium is of rare occurrence in Hawaiian fever. (7) Emaciation is not extreme in Hawaiian fever.

"In October, 1903, Kuramoto isolated a species of bacillus resembling the bacillus typhosus from the feces of a fever patient and named it the 'Yasuda' bacillus after the name of the patient. Thinking the Yasuda bacillus to be the pathogenic germ of Hawaiian fever, Kuramoto tested the agglutination reaction of the sera of many fever patients on Yasuda bacilli with positive results. But he was rather amazed when he found that the sera of some patients had an agglutination on both Yasuda and typhoid bacilli. During September, 1904, Dr. Shiga, the discoverer of dysentery bacillus, passed this port and gave a culture of B group of the paratyphoid bacillus.

"Now, enough materials have been in our possession for comparison, and Kuramoto thinks that the morphological character of Yasuda bacillus resembles the bacillus typhosus, but differs in the following biological points: (1) Yasuda bacilli produce an alkalinity in the litmus milk. (2) Yasuda bacilli agglutinize by the sera of Hawaiian fever patients in the dilution of over 1 to 100, but no agglutination by the sera of typhoid patients. (3) Dr. Uchida thinks that the Yasuda bacillus rather resembles Conradi's B group of paratyphoid morphologically, but only differs in the point of not producing gas in glucose agar.

"During the past two years 142 fever patients were admitted to the Japanese hospital in this city, and they could be classified into the following three groups: (1) Fifty-three Hawaiian fever, which only had the agglutination reaction on Yasuda bacilli. (2) Thirty-seven typhoid fever which had genuine Widal reaction. (3) Fifty-two double infection, probably, which had agglutination reaction both on Yasuda and typhoid bacilli.

"But whether the reaction of the third group due to the double infection, or the group reaction, is the subject to be investigated, the following question and phenomena are to be investigated: (1) Is Yasuda bacillus quite an independent bacillus, intermediate between the typhoid and colon bacillus? (2) The relation of the agglutination of typhoid, paratyphoid, and Yasuda bacilli to the sera immunized by each bacilli. (3) Pfeiffer's phenomena of the bacilli of the three species."

*"Preliminary report on 'Hawaiian Fever' Research." By Drs. I. Mori and K. Kuramoto. Trans. Hawaiian Terr. Med. Society, 1905.

To conservative students there may seem here an overeagerness to establish new series and nomenclature, but no one will deny the value of the enthusiasm shown. "Hawaiian fever," even if the class be definitely differentiated, would hardly be a good name for a disease that may not belong to Hawaii alone. The name had better be expressive of some phase of the disease. While the morphological findings are extremely interesting, they are far from conclusive, and the clinical differences are not so variant that they cannot be included under some one of the forms of typhoid fever.

Malaria.—Early in 1899 the Pathological Society of London examined a case of Blackwater fever and began a discussion that extended to most of the medical societies. The disease was first described by a French physician in Madagascar. Men on the ground commenced making observations, and positive opinions came from little towns as obscure as Batanga in Africa. In May, 1902, Dr. Curry, appointed to investigate the diseases of the Philippines, reported two cases of hemiglobinuric fever, and in August of the same year a new variety of anopheles was described by the discoverer, Dr. Ludlow. It was called the *Anopheles philipinensis*. Allied hemorrhagic fevers prevalent among whites in Texas are shown to be different from ordinary malarial fevers. Dr. Shropshire has demonstrated this by a careful record of cases. The study of the many forms of malaria, or at least of its many manifestations, particularly as to symptomatology, is continued by Dr. Penn of Tennessee, while Dr. Hoppel of the same State shows conclusively that his one hundred cases of fever were not typhoid, though his conclusion as to their nonmalarial origin is not so well founded. In 1904 Powell of Bombay reported on the examination of 3,413 cases of fever, finding parasites in 2,542. In the remaining 761 cases "definite diagnosis by clinical methods was made in 531, leaving 214 cases of fever whose cause is uncertain."

"Here, then, are at least this number of cases of indeterminate fever," says the *Journal of Tropical Medicine* (May 1, 1906), "which only a few years ago would undoubtedly have been ascribed to malaria. But what of the 531 cases diagnosed by 'clinical methods,' and what real ground is there for assuming them to be malaria at all?" James Cantlie in a recent paper says very truly: "Another point that presents itself is the comparative rarity of serious cases of malaria in tropical practice. Far more than nine-tenths of those met with are what are commonly spoken of as 'touches of fever,' lasting from a day to a week or even more. Most of these are undoubtedly malarial—they are, moreover, mostly fairly amenable to quinine. Every now and again, however, a severe prolonged case of fever presents itself, in which quinine has no effect whatever."

Dr. E. V. Watkins, from observation in two soldiers serving in the Cuban war, is convinced of the "simultaneous occurrence of typhoid fever and malaria in the same patient." This was demonstrated by Widal's reaction and the finding in one case of the estivoautumnal and in the other tertian parasites in the blood. (MEDICAL RECORD, June 25, 1904.)

Dr. W. C. Gorgas, Chief Sanitary Officer of the Canal Zone, Panama, made some interesting statements in regard to malaria before the last annual meeting of the American Society of Tropical Medicine. He said that while the percentage of deaths is not nearly so great in malaria as it is from some other diseases common in the tropics, yet the amount of physical incapacity caused among laborers by malaria is far greater than that from all the other diseases combined.

Malta Fever.—Of Malta fever the *Journal of Medical Research* (July, 1901) says: "There is reason to believe that the disease will soon exist in the United States, for its existence in the Philippines has been conclusively demonstrated and cases have been reported from Porto Rico, and from both these places patients suffering from the disease have returned to the continent. Typhoid fever, malaria, and rheumatism were readily excluded." The study of the disease has been rendered easier by the work of Drs. Strong and Musgrave, who, without preconception of any sort, followed scientifically the clinical aspects of some Manila cases. Later, Dr. Stanley, Health Officer of Shanghai, reports the examination of a large number of fever cases. "During 1904 nine specimens of blood from suspected cases of Malta fever were examined, and seven of these gave the Widal reaction with the Malta fever organism. Of 27 specimens from suspected cases of Malta fever, 10 gave the Malta fever reaction. Clinically, the cases were reported as corresponding to Malta fever."

Lieutenant Kennedy of the Royal Army discovered in a patient with Mediterranean fever organisms "identical in character with the *Micrococcus melintensis.*" Of Mediterranean fever several monographs by officers living in India give valuable information which is very recent.*

So far as Malta fever is concerned, there may be no great danger of its spread, but for clinical as well as scientific purposes it deserves careful study, because its early stages are so easily confounded with malaria, and, later, it so closely resembles chronic rheumatism. It is just possible that Malta fever and not rheumatism is what ails so many "rheumatics" down South. Drs. Musser and Sailer have shown its prevalence in Porto Rico: "The serum reaction of the disease is so reliable and the test is so easy of performance that all cases with doubtful fevers in the Southern States should be subjected to it."

Hawaii offers a rich field for the study of fevers.† Typhoid is a good name to placard indeterminate epidemics with, but, to many of us, it is far from satisfactory. In such limited epidemics as those on Molokai and Hawaii, how much could be accomplished by the careful work of a man who had time to investigate them? I have no doubt that, as in the fevers called "calentura," so well described by Dr. Foxworthy of the Philippines, we would find in them neither *Bacillus typhosus* nor *Plasmodium malariæ*, and we might help to clear up a variant type of fever not uncommon among Hawaiians, marked by contagion, persistence, recurrence, and often a fatal ending.

A fever, called by Dr. Doherty "Manila fever," occurring during the hot months of April and May, resembles a fever which has been prevalent in Kona (and probably Waipio), Hawaii, during warm, dry seasons.

Dr. Bacones says that Manila fever is not found outside of Manila. Out here in the country an experience with about 25 cases, presenting many typhoid symptoms, confined to neighbors, with a mortality of about 9 per cent., might well incline the attendant to term the manifestation typhoid. At the

*"Mediterranean Fever: Isolation of the Micrococcus Melitensis." By Capt. Geo. Lamb and Ass't Surg. M. Kesava Pai.

†It is only fair to the writer to say that these remarks about fevers were made before he knew of the investigations being carried on by Drs. Mori and Kuramoto.

same time he hesitates over the failure of his test reaction, and with the clear typhoid source theory in mind, wonders how typhoid fever can originate without antecedents.

Is the fever which some of us have observed in the presence of high temperatures on leeward Hawaii siriasis? Or is it cerebrospinal fever, or tuberculous meningitis? Pain, vertigo, headache, thirst, mental confusion, and paralysis occur in course. Siriasis occurs in coast regions of the South, South America, Australia, and in the hot, dry countries generally.*

Yellow Fever.—It hardly needed the recent report of the French Commission to confirm the observations of Reed, Lazear, Carroll and Agramonte that *Stegomyia fasciata* is responsible for the spread of yellow fever. But the report contains most valuable data, as: "The mosquito can only acquire power of infection during the first three days of the patient's illness. Twelve days must elapse after the mosquito has imbibed the virus before its bite can infect human beings. The infected mosquito retains its power of infecting man as long as it lives—namely, twenty to thirty days. *S. fasciata* requires human blood for the development of her eggs. The first generation of the offspring of an infected mosquito seems capable of transmitting yellow fever fourteen days after reaching full development."

Though Dr. Findlay told us twenty years ago that the mosquito was an agent in the transmission of yellow fever, we did not learn much about it or its methods until Drs. Manson and Ross, with unabated tropical enthusiasm, made the matter clear as day. But Dr. Ross, who has received the Nobel prize for his work, gives due credit to America: "The discovery of at least one mode of infection of yellow fever—a discovery of the highest importance to mankind—emanates from America."

Sanarelli's faithful work provoked further investigation, and though his theories were found to be erroneous by Dr. Reed and his associates, his methods of work were approved. Perhaps in all great discoveries those who point the way, who suggest possibilities to others, deserve the most credit. It takes a man of rare genius to look across the misty spaces—the man who penetrates the fog after he has been told what he will probably find is no more than many other men. Of the labors of members of the United States Public Health and Marine Hospital Service in Mexico, Guiteras in Cuba, and Salembi and Simonds in South America, Dr. Blumer says: "New discoveries in medicine have led to more rapid and more brilliant results."

Dengue or Breakbone Fever.—While the symptoms of this "specific and highly infectious" fever are well known to us in Hawaii, we have added nothing to the meager information supplied by medical science thus far. Dr. Manson says that most all tropical countries have been visited by dengue; that it occurs in widespread epidemics, extends with rapidity, assuming pandemic characters about once in every twenty years. It is most frequent in the West Indies. If it goes north it does so only in summer, like the birds, and while not a fatal disease it is very painful and often leaves a patient to the prey of more serious diseases.

The etiological factors of the disease still remain unknown. Drs. Sutton and Carter have studied it in Panama, and Dr. Graham claims that the mosquito transmits it, yet despite its occasional prevalence in the Southern States and the severe epidemics of 1892 and 1903 here and in the Philippines, we must classify it as little understood.

*Swollen Head Fever.**—This title need not cause a smile, though the name is one which we are wont to look upon with levity. It is reported by Dr. W. J. Goodhue, resident physician at the Leper Settlement on Molokai: "This is the second epidemic of the kind which has occurred at the Settlement, the first happening about four years ago during the incumbency of Dr. Oliver, who unfortunately left no notes. In conversation with one of the Sisters—who has been with the lepers here for over twenty years—I learned that she had never seen this phase of the disease. Dr. Oliver expressed himself to her as being puzzled at this 'new disease.'

"Swollen head fever is an acute epidemic, painful inflammatory fever, in which the head and face become greatly swollen and in which the lymphatic and glandular system become characteristically involved, especially the cervical, and sometimes the axillary and inguinal as well. This ailment is a distinctively leprous fever—differing materially from 'leper fever' in its symptoms, temperature curve, course, prognosis, and treatment, but due to the same specific virus, somewhat modified and more active. While the bacilli are not found normally in the blood of lepers, I was enabled to obtain a specimen from three of my most characteristic cases, in the blood of two of whom I was able to demonstrate the bacilli. I am confident that during the acute exacerbation of the temperature when the patient's chill shows the activity of the elements of infection, the bacilli are liberated in great numbers in the blood, to be disseminated throughout the system. The appearance, contagiousness, and temperature resemble erysipelas so closely that I was led to search for the germ of this disease as well. While the affection proved to be highly contagious, not one of the score of nonlepers (kokuas) constantly exposed to it became infected, showing conclusively that leprous tissues are necessary for its propagation and activity. Further investigations will be made in this line when opportunity offers.

"The onset is usually sudden and begins with a severe chill. This chill is succeeded in about half an hour by rapid rise in temperature, the thermometer in the mouth registering between 104° and 105° F. The submaxillary and auricular glands about this time become enlarged and painful to the touch, as well as the skin all over the head and face. Swelling begins on the head or face, or both, on the same side as the enlarged glands, and gradually extending to the other side, when the whole face may become so enlarged and disfigured as to be unrecognizable, especially in the numerous cases in which the patient's eyelids become so swollen that in many cases they cannot be opened, and the unfortunate endures temporary blindness in addition to his other miseries. About the third day the swelling extends to the glands of the other side of the face, and these, with adjacent tissues, reach their maximum size and severity in about three days more, when they remain stationary until between the eighth and ninth day. The swelling gradually subsides, the pain disappears, and the temperature, having followed very closely the glandular infiltration and swelling, rising rapidly to 104°-105° or thereabouts with the first invasion and then jumping to 104 4-5° or 105 4-5° F. with the second invasion, drops rapidly to 99° F., or normal, upon the first subsidence of the inflammation.

*Report of Board of Health, 1904.

*"There have been small epidemics of typhoid fever in the Pelekunu and Halawa Valleys, Molokai, Waipio Valley and Waimea Hawaii, and also in the Kona Districts. Those affected were nearly all Hawaiians." Report L. E. Pinkham, Pres. Board of Health, 1905.

"In about 15 per cent. of the cases, however, the axillary and inguinal glands become involved during or immediately after the subsidence of the primary swelling, diffuse hypodermic swelling, and infiltration of adjacent skin and superficial tissues, progressing rapidly and extending along the lymphatic channels to the extremities. Occasionally it is circumscribed and may encircle an arm or leg. The skin of the affected area is very much congested and sometimes deeply pigmented. Here numerous millet seed to lima bean sized blisters form, which break and leave a raw, angry looking surface, slow to heal. The temperature takes a fresh rise up to 102° F., remaining almost stationary until the skin becomes nearly normal again. When this complication occurs, the patient does not become convalescent for from ten days to two weeks later. In the uncomplicated form the patient is convalescent from the acute symptoms in two weeks.

"Suppuration in the cervical glands may have occurred (and did occur in 9 per cent. of my cases), in which convalescence is somewhat delayed; but in every instance the patient is slow to regain his former tone and vigor, and reconstructive tonics are required. After the fever has left, the patient's hair all falls out, and desquamation of the skin occurs in the face, neck, and ears.

"In the aged and debilitated the prognosis is grave. In strong children and adults the mortality is very low."

THE BURSTING OF THE STANDARDIZATION BUBBLE.

By WILLIAM J. ROBINSON, Ph.G., M.D.,
NEW YORK.

When manufacturers of galenical preparations began to announce that they were offering assayed or standardized fluid extracts and tinctures, they showed that they no longer could disregard the constantly growing demand on the part of the medical profession for a certain amount at least of accuracy in therapeutics. They no longer could disregard the fact which was becoming gradually more and more patent to the discriminating part of the profession, that in many cases the use of the uncertain galenicals was nothing short of criminal. Standardization was a step in the right direction. It showed a desire to give the profession preparations of more or less uniformity. But standardization is merely a step, a single step, in the evolution of an exact and definite materia medica, and to stop there would be to rest on a broken reed.

I believe the arguments I am about to present are absolutely unanswerable, and I should be pleased to hear what can be said in their refutation.

First, I shall show the absurdity of standardization. Let us take aconite, for instance. The Pharmacopœia gives an extremely troublesome method for standardizing the fluid extract of aconite so that each 100 c.c. of the fluid extract may contain 0.4 grams of aconitine. Now, what is all the trouble for? Either aconitine represents the virtues of aconite, or it does not. If it represents the virtues of aconite, then why not use aconitine *per se?* For even the most enthusiastic believer in galenicals will admit, that if we have an active principle which fully represents the parent drug, the administration of such active principle is in every way preferable. We need only mention the smallness of the dose, convenience of administration, absolute exactness of the dose administered, unchangeability, invariability through evaporation, etc. If, on the other hand, the aconitine does not represent the full activity of aconite, if the aconite possesses something else of value besides the aconitine, something mysterious, which cannot be isolated and standardized, then to what purpose is the standardizing for aconitine?

In the case of other drugs the absurdity is still greater. Pilocarpus, for instance, contains two principal alkaloids, pilocarpine and jaborine. The action of jaborine is directly antagonistic to that of pilocarpine. Now, of what good is it to know how much pilocarpine a certain fluid extract contains if we do not know how much jaborine it contains? Suppose the fluid extract of pilocarpine does contain 0.4 per cent. of pilocarpine, as the Pharmacopœia directs. Of what good is it if we do not know whether the amount of jaborine it contains may not entirely overshadow the action of the pilocarpine? It is clearly evident that a fluid extract with but 0.3 or 0.2 per cent. of pilocarpine, but a very small amount of jaborine, may still prove more efficient than a fluid extract of 0.4 per cent. of pilocarpine, but a very large percentage of jaborine. Will any honest standardizer kindly answer the above arguments?

I have shown briefly but conclusively the absurdity of standardization. I shall now show what a broken reed standardization is, demonstrating its utter unreliability, and in many instances its utter worthlessness.

Let us assume for the present, for the sake of argument, that standardization really standardizes, that when a fluid extract just finished is stated to contain a certain percentage of alkaloids, it really contains that amount. What guarantee is there that the same percentage will be contained in it a month or six months, or a year later? Are not the temperature, exposure to air, evaporation of menstruum very liable to cause the precipitation or decomposition of the active principle contents, or change their relative proportion? That this is not merely a possibility or probability, but an actual fact, will be seen from the statement made by one of America's foremost wholesale druggists.

The New York Board of Health has recently been investigating the condition of the drugs purchased directly from the wholesale trade. The investigation disclosed the shocking fact that 72 per cent. of all the drugs purchased from the wholesale trade were below standard, and but 28 per cent. came up to the Pharmacopœial requirements. Many fluid extracts were found practically or entirely devoid of alkaloidal contents. Mr. William Jay Schieffelin referring to the Board of Health findings, made the following significant statement: "Some of the extracts which the Board of Health reported below standard were found to be of proper strength when made, but the active principle had deteriorated. This led to the suggestion, which has been approved and adopted by the manufacturers, that a dated label be placed upon all such extracts, and that they be sold in small containers, so that the druggist can constantly have a fresh supply."

Here is a statement that the active principle in galenical preparations may and often does deteriorate. If this is the case, of what value is standardization? Suppose a fluid extract of cholchicum did contain when made 0.5 per cent. of colchicine, what guarantee have we as to how much it contains now —when six months or a year old? It is well known that many fluid extracts and tinctures are kept on the druggist's shelves for years, and to offer such galenicals to the physician as reliable weapons in the fight against disease, because at some time in the past they were standardized, is farcical in the extreme.

But let us look a little closer into the subject of standardization. The average physician, as well as the average pharmacist, is under the impression that the processes of assay are something definite, perfect, immutable. That when a person states that a certain galenical has been standardized to contain a certain amount of active principle, that it is always so, must be so. The well informed have always known that it is *not* always so; that standardization depended a good deal upon who the operator was and upon the method adopted. In other words, two equally competent operators using the same method of assay might obtain a different result, and the same operator using different methods of assay would obtain different figures. We also knew that several assay methods of the Pharmacopœia were either unreliable or entirely *unworkable.* But something has recently happened which will, or should open the eyes of a good many who worship at the shrine of standardization. At the last annual meeting of the American Pharmaceutical Association held at Indianapolis, Prof. H. M. Gordin of the Northwestern University School of Pharmacy, universally acknowledged as one of our foremost authorities in alkaloidal chemistry and standardization, threw a bomb into the Pharmacopœial committee on assays by declaring publicly that several of the Pharmacopœial assay processes were "completely unworkable." In his paper entitled "Some Alkaloidal Assays," he makes the following statement (*American Journal of Pharmacy,* p. 458, October): "While most of the methods adopted in the U. S. P. of 1900 for the alkaloidal assay of drugs and galenicals are very good, there are a few among them that either do not work at all or are so complicated that they will hardly ever give concordant results in the hands of different chemists. To the first class belong the assays of aconite root, its fluid extract, and the fluid extract of ipecac. In these assays we are directed to filter the first acid liquids obtained in the method, but as these liquids are very thick and slimy they soon clog up the filter and the assays cannot be finished. To the second class belong . . . the assay of extracts of physostigma and conium, and a few others."

In another paper entitled "The Alkaloidal Assays of the U. S. P. of 1900" (see same issue, page 454), Prof. Gordin makes the following statement: "Some of the assay methods of the Pharmacopœia are completely unworkable. Such, for example, are the assays of aconite root, its fluid extract, and fluid extract of ipecac root, in all of which we are directed to filter the first acid liquids obtained in these assays, but as these liquids are very thick and contain sticky resinous substances, the filters are very soon completely clogged, and the assays cannot be finished. This is in accord with my own experience and the experience of several teachers and students in our school."

Now, if our foremost authority on standardization finds many of the Pharmacopœial processes either entirely unworkable or capable of giving discordant results in the hands of different workers, what may we expect from the ordinary chemists in the galenical departments of our various wholesale drug houses?

And in parentheses I would ask this rather indelicate question: How did the various wholesale drug houses standardize, for instance, their fluid extract of aconite according to the U. S. P., as they declare on their labels they did, if, according to Prof. Gordin and other most competent chemists, the assay process was entirely unworkable and could not be finished at all?

Prof. Gordin was not alone in his strictures on the U. S. P. methods of assay. Prof. J. M. Francis, Prof. A. B. Lyons, and other speakers agreed with Prof. Gordin, and pointed out serious defects in many of the methods. The subject seemed so important that Prof. Rusby of the New York College of Pharmacy introduced a resolution demanding that the processes be revised, and that a supplement to the Pharmacopœia be issued (see *Bulletin of Pharmacy,* October). This proposition, which is an open accusation of incompetent work, was naturally opposed by the chairman, who suggested as an alternative that the criticisms be referred to the subcommittee on assay processes for such action as the latter might deem necessary. And, we might add, the assay processes of essential oils met with similar criticisms, and the chairman of the subcommittee on assays of essential oils confessed that the processes were admitted without verification as to their workability or correctness! To summarize:

Standardization is useless: (1) When the active principle fully represents the drug it requires no argument that standardization is useless, and worse than useless, because the active principle offers indisputable advantages in (*a*) smallness of dose, (*b*) convenience of administration, (*c*) exactness of dose, (*d*) freedom from objectionable and irritating inert material, (*e*) nonchangeability (*f*) nonvariability, (*g*) and more rapid absorption. (2) When the active principle does not represent the drug in every respect, standardization of one active principle is worse than useless, because it gives no information as to the absolute and relative amount of the other active principles, and does not provide for the removal of antagonistic principles.

Standardization is unreliable, for even if the galenical preparation, when made, contains the exact percentage of active principle, the latter soon begins to deteriorate; changes in temperature, exposure, evaporation, cause a change in the menstruum, which in its turn produces precipitation, etc. That such deterioration is actual, and not hypothetical, has been publicly acknowledged by one of the most prominent manufacturers of galenical preparations.

Standardization is unscientific and imperfect. Processes of assay as found in the Pharmacopœia, which one would expect to be reliable and to give definite results, have been declared by the highest authorities to be unpractical, utterly unworkable—and to give discordant results in the hands of different chemists.

All this being the case—and that it is the case is publicly acknowledged by the manufacturers of galenicals and adherents of standardization themselves—is not the question legitimate? What is it all for? Why not go to the root of the matter, give up most of the galenicals, and use, wherever feasible, the active principles instead?

A PLEA FOR THE SIMPLE ROUND-LIGAMENT VENTROSUSPENSION.

By B. S. TALMEY, M.D.,

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In retrodisplacements of the uterus there is more or less a torsion of the broad ligaments, which causes an obstruction of the blood supply, and thus a passive hyperemia of the entire genital apparatus. The result is a hypertrophy of the myo- and endometrium and the great variety of vexatious symptoms.

When we consider the multitude of these symptoms, as the discomfort, the sense of weight, inabil-

ity to walk without pain, backache, pain in the lower abdomen radiating down the thighs and hips, vesical and rectal tenesmus, pain at menstruation, dyspepsia, palpitation of the heart, neuralgia, headaches, and the irritable type of nervousness which is characteristic of retrodisplacements, we must not

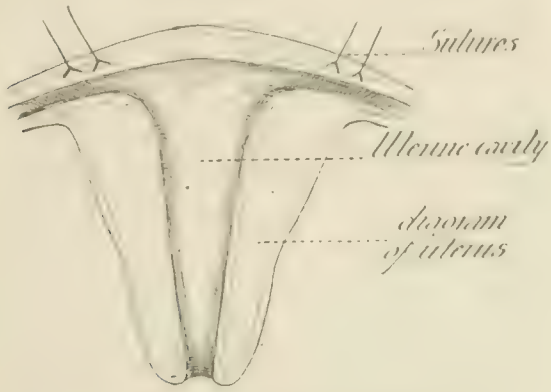


FIG. 1.—Kelly's suture above the uterotubal junction.

wonder that the physician was always on the alert to discover means for the correction of these displacements. Before our present operative era the correction was possible only by means of pessaries, and medical ingenuity invented a great variety of these instruments.

In 1877 Koeberle first conceived the principle of suturing the stumps of the tubes and ovarian ligaments to the tissues of the abdominal incision after castration. Three years later Tait tried to cure a retroversion by suturing the fundus to the abdominal wall after he had removed the diseased ovaries. Olshausen recommended in 1886 the attachment of the pedicles of the tubes and ovarian ligaments to the sides of the abdominal wound with inabsorbable material after castration. In his second case Olshausen secured the uterus to the abdominal wall by passing the sutures through both cornua uteri at the attachment of the round ligaments and the tissues of the abdominal incision. He claims that this method offers a stronger hold of the uterus than suturing only one pedicle, and, on the other hand, that it secures a better mobility of the uterus.

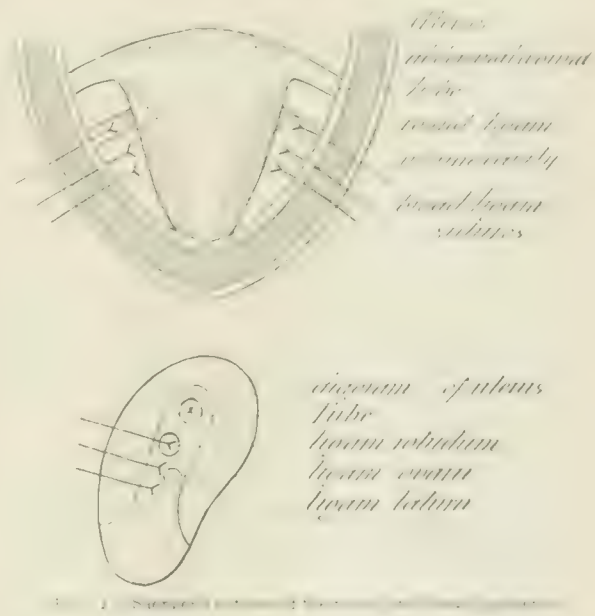
Kelly, in 1887, also recommended that both tuboovarian pedicles be utilized to attach the body of the uterus to the anterior abdominal wall. If the operation be performed simply for retroflexion, without removal of the appendages, Kelly advises the sutures to be passed including only the round ligaments or, better, above the uterotubal junction.

In 1888 Saenger recommended the use of three silkworm sutures through the round ligament and the anterior lamella of the broad ligament bilaterally, near the edge of the uterus, attaching the same to the recti muscles on both sides of the incision. He advises the grasping of a large part of the anterior leaf of the broad ligament to secure a better hold of the uterus without diminishing the mobility of this organ in case of pregnancy.

Some time after his first article on hysterorrhaphy Kelly advised suturing only the ovarian ligament to the anterior abdominal wall for the purpose of gaining a more normal, anteflected position of the uterus without fearing the approximation of the anterior face of the uterus to the abdominal wall. At that time Kelly did not recommend the passing of sutures into the muscular tissue of the fundus. Yet in the present Kelly operation an area of uterine parenchyma is included in the two silk sutures of the peritoneum of the abdominal wall.

I must confess that I am still of the same opinion as Kelly formerly held, that the passing of sutures into the muscular tissue of the fundus, in cases where ventrosuspension is indicated, *i.e.* in the childbearing woman, is altogether objectionable. It does not lie in the power of the surgeon, once he has sutured the fundus, to say whether his operation will turn out to be a ventrosuspension or a ventrofixation. Either he keeps the uterus in contact with the abdominal wall by means of a pessary in the vagina, then in a great many cases he will have a solid fixation instead of his intended suspension; or he allows the uterus to fall back towards the pelvis, drawing the peritoneum into a narrow, funnel-shaped depression. In this way a dead space is created which may be the cause of a suppuration, changing again the suspension into a fixation. Beyea, for this reason, includes a few fibers of the rectus muscle in the sutures, thus obliterating the space between the peritoneum and rectus. Maunsell tries to obliterate the dead space by approximating the sides of the funnel-shaped depression by a few sutures, thus preventing immediate contact of the uterus and the abdominal muscles. But even these modifications cannot entirely prevent the operation from turning out to be a fixation. We simply cannot estimate beforehand the length of the band, be it fibrous or peritoneal, after the stretching has taken place. If it is stretched too far it may in time reproduce the former deformity, especially after a pregnancy, if by good fortune the pregnancy went to full term. On the other hand, if the adhesions remain short, there is the same danger of dystocia as found after fixation. In Kelly's operation, suspending the uterus by the posterior wall to the abdomen, apart from the just-mentioned objections, an unnatural anteflexion is simply substituted for the retroflexion.

Efforts, therefore, have been made to utilize the round ligaments for the correction of the displacement. The round ligament grows *pari passu* with the development of the uterus in pregnancy, and will contract again after delivery, returning to its primitive condition. For that reason Alexander tried to utilize the round ligaments in the operation bearing



his name. But the Alexander operation has several drawbacks. In the first place, he utilizes the distal or weak, attenuated portion of the ligament, which, after stretching, may often lead to the former displacement. Then, the abdomen not being opened, the surgeon is unable to ascertain the condition of

the adnexa. But the most important reason why the Alexander operation never became very popular is the difficulty often met with in finding the round ligament in the inguinal canal. Not very seldom I found the ligament consisting of a few fibers only. Sometimes the ligament at this place is not thicker than a violin string, and surely cannot keep the uterus in the anteverted position. Furthermore, the operation cannot be utilized when the uterus is kept in its retroflected condition by adhesions.

Now, the intraabdominal round ligament suspension of the uterus does away with all these objections. Here the proximal or strong portion of the ligament may be retained as a support; the adhesions, if there be any, can be freed, and the operation does not offer any particular difficulty. Ferguson, with whom the idea originated, and Gilliam, who popularized it, advocate the ventrosuspension by implanting the round ligaments in the abdominal wall. To be sure, I have no substantial objection against this operation except that the slit in the muscle may become the road for a hernia. Yet, whenever I think of this operation the popular version of Goethe's immortal verses comes into my mind:

"Warum in die Ferne schweifen
Siehe das Gute liegt so nahe."

Why increase the difficulties of the operation by implanting the ligaments in the recti muscles, if the simple suturing of the round ligament to the abdominal wall, with only a slight modification of the method originally recommended by Olshausen will do the same service as the complicated Gilliam's operation?

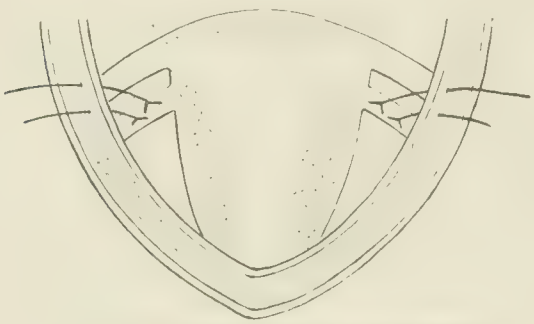


Fig. 1.—Two sutures through each round ligament.

For the last six years the method I adopted of suspending the retroplaced uterus in women of childbearing age is as follows:

The abdominal incision of about 6 cm. is made in the linea alba, beginning immediately above the pubis; the two recti muscles are separated with the fingers, the peritoneum is incised, the uterus located, adhesions, if there be any, freed, and in order to avoid wounding the anterior face which will be for some time in contact with the abdominal wall, the uterus is grasped at its posterior surface by a tenaculum and held in position.

I then try to locate the round ligament. It is easily found in a distance of 4-5 cm. from its insertion into the uterus. While near the uterus the fibers are often scattered and hard to be located; they are united in a single whitish cord that may be recognized through the peritoneal covering at the above-mentioned distance. I grasp, therefore, the round ligament at this point and follow it to the uterus. Here, at its proximal end, I insert the first suture of chromicized catgut and pass the same through the rectus muscle about 2 cm. from the abdominal incision and about 3 cm. above the symphysis. I then insert another suture through the round ligament one centimeter distally from the first and pass it in the same way through the rectus muscle. Both sutures remain for the time being untied until the same procedure is followed on the other side. The sutures are then tied and the abdomen closed.

The second suture marks the only difference between the original method recommended by Olshausen and my modification. Olshausen passes the second, and sometimes a third, suture beneath the round ligament through the anterior lamella of the broad ligament. In this way the uterus is not only suspended by the round, but also by the broad ligament, while in my modification the round ligament, in a distance of one centimeter, the space between the two sutures is the only attachment to the abdominal wall.

After the operation I place a pessary within the vagina to keep the uterus in place. The pessary remains in the vagina until the patient leaves her bed. When the patient is in a vertical position the intraabdominal pressure tends to keep the uterus in the anteverted position.

This is, in short, the method I used for the last six years in a number of cases without a single failure. I was able to follow most of my cases for years, and I always found the uterus in the normal anteverted position, thus affirming Kelly's statement of 1887 that the simple suspension of a large, heavy uterus by means of two ligatures was sufficient to hang it up for a year. Now, while I do not claim for this method any advantage over the Gilliam operation, as far as the results are concerned, I do claim greater facility for its performance.

The uterus in this operation rests in the beginning upon the bladder until the ligaments have somewhat stretched. Yet I never experienced any dysuria in my patients, I suppose for the reason Kelly has given, that the female bladder physiologically expands like a saddle bag, as it has to do in every pregnancy.

As to the possibility of incarceration of the bowels between the uterus and the anterior abdominal wall, I never met with such a mishap, and I regard the possibility as very remote.

Furthermore, this operation in no way causes any impairment of the reproductive capacity of the patient. During pregnancy the ligaments, just as in a normal case, take part in the general hypertrophy of the genital organs, causing no complications of gestation and labor whatsoever. After parturition, involution takes place in the round ligament, just as it does in the other genital organs, and they continue to support the uterus in its normal anteverted position.

The chief advantage of this method is the fact that the operation is universally applicable and entirely satisfactory under all conditions, and that the uterus is placed in the most physiological position, being held forward by its normal supporting structures in the most natural way.

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A Warning.—The alleged death from excessive cigarette smoking of a thirteen-year-old boy in London is being used as a horrible example by British reformers.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE INNERVATION OF THE UTERUS.

THE last few decades have witnessed remarkable progress in the study of the nervous system, and organs which even a comparatively short time ago were regarded as "nerveless," because no nerve structures could be demonstrated, have been shown by modern histological methods to be plentifully supplied with these elements. Our knowledge of the peripheral nervous system is still far from complete, however, and considerable indefiniteness exists with regard to certain features; thus, what is looked upon as a plexus of nerve fibrils by one investigator is defined as connective tissue by another, and tissue elements interpreted as ganglion cells by one writer are denied any nervous function by another. Not even the gross anatomical relations have been fully determined and explained in certain organs, among which the uterus may be cited as an important example. Anatomists, physiologists, and gynecologists have each in turn endeavored to throw some light on this subject, but unfortunately these efforts have failed in their purpose in most respects. Aside from the purely scientific interest which attaches to a more complete knowledge of the nervous system of the uterus, it has also a practical value, for in this way many questions still unanswered would be finally solved. Among these is the etiology of labor itself, for surely the nervous system must in some manner institute this phenomenon, and the pains are probably the result of nerve stimulation, but of the way in which this is transmitted to the smooth muscle fibers we are almost totally ignorant. Equally important is a more definite knowledge of the nervous connection between the uterus and the ovaries, for the close relation between these two organs undoubtedly depends on a nervous basis. And finally, when we consider the close association between the uterus and the remaining organs in the female subject, a more perfect understanding of the nervous relations would be of untold value. That these relations are not limited to physiological factors, but also include the pathological, is proved by numerous and well-known examples.

Although the course of the nerves outside of the body of the uterus is no longer the subject of controversy, but little is known of their distribution within the tissues of the organ itself. This subject has been made the basis of an investigation in both man and some of the lower animals by Labhart (*Archiv für Gynäkologie*, Vol. 80, No. 1), and the conclusions he presents are worthy of note as a contribution to an important practical matter. The course of the nerve fibers in the uterine tissues, their termination in the myometrium, as well as in the mucous membrane, and the presence of ganglion cells in the substance of the organ, were among the questions which the writer sought to solve. He has not yet accomplished this task, for although his anatomical deductions are of importance they still require to be supported by physiological experiment.

Labhart found in the uterus of the human subject a very complete network of nerves, the larger branches of which are distributed within the middle muscular layer and the smaller divisions around and into the fascicles. He did not succeed, however, in demonstrating satisfactorily the manner in which the nerve elements terminated in the musculature or the endometrium, nor were ganglionic cells found. He thinks that we have no reason to believe an intramural ganglionic system exists in the uterus, as has been claimed by a number of investigators who compared the uterus in this respect to the heart. Uterine contractions from our present knowledge seem to be due to one of two causes; they result from a stimulation of the cervical ganglion or as a reflex originating in some part of the body, including perhaps the uterine wall itself. They may also take place in a myogenous manner, as demonstrated by Kurdinowski on the recently extirpated uterus, in which the thermic and mechanical stimuli probably play a more important rôle than the electrical.

The facts just noted constitute an important contribution to the subject, although it still remains to demonstrate the actual manner in which the nerve fibers terminate and the anatomical relation between the nerve tracts of the uterus, and others in the body. As already noted, physiological tests are necessary to prove these anatomical findings, and these will doubtless soon be forthcoming.

THE TREATMENT OF THE INEBRIATE IN GREAT BRITAIN.

FOR many years the treatment of the inebriate in Great Britain was founded upon the belief that the victim of the habit was wholly responsible for the state in which he found himself, and that the only methods by which dunkenness could be checked were strictly repressive ones. Human interest was almost entirely lacking in the modes of treatment. However, of recent years, a great change has come over the manner in which inebriates are regarded, especially by the medical profession. A striking proof of this alteration is afforded by the report by Dr. Brathwaite, Inspector under the British Inebriates Act, which has just been issued. One point in particular dealt with in the report is worthy of notice, that, according to Dr. Brathwaite's view, while alcoholic excess is a prolific source of disease and of mental instability, disease and mental instability are even more provocative of the alcoholic habit. In fact, that the drunken habits of the people are in the main a result and not a cause of poverty, squalor, disease, and to some extent insanity. Methods which recognize the psychological and neurotic aspects of the question are now in vogue to some extent in Great Britain, and in all respects a very much more intelligent view is being taken of the whole matter of inebriety.

The report draws attention to the fact that the manner in which magistrates in police courts ordi-

narily deal with habitual drunkards is worse than useless as a means of radical cure. The drunkard is subjected either to a fine or to some days' imprisonment, neither of which serves any profitable end. The imprisonment, indeed, not only does not hinder the progress of mental deterioration, which is going on, but hastens it, and the conclusion reached in the report is that the British police-court treatment of habitual inebriates is irrational and inhuman, since it degrades the inebriate and tends to confirm him in his desired impulses and puts a cure beyond all possibility of accomplishment.

Another mode of treatment which has been in use in Great Britain for some years now, is the reformatory system. According to the report this system, as it has been carried out for the past twenty-five years in Great Britain, is too strict and not sufficiently discriminative. The principle appears to have been that inebriates should be practically beyond reform ere the attempt was made to reform them. The segregation of the hopeless and the comparatively hopeful classes of inebriate has been practised in Great Britain only during the past nineteen years, and has not been carried out at any time in a really effective manner.

The most pitiful, and to some extent the most alarming part of the report, is that which relates to women inebriates. These statistics show that women are not only more generally susceptible to alcoholic temptation, but also that they, as a rule, give way to this temptation at an earlier age. The women under detention in British reformatories for their drinking habits far outnumber the male delinquents, the numbers being, in fact, no less than 1,608 women and only 219 men who are inmates of such institutions.

The question of inebriety has been made the subject of discussion in the editorial pages of the MEDICAL RECORD quite frequently. The matter has been treated from many standpoints, and the view has been expressed that it is not wise to press the argument to an extreme point on either side. That alcoholism in some of its forms is a disease seems to have been proven beyond a doubt. It is not merely a vice, but an actual pathological condition of the brain. Whether the taint of alcoholism can be passed down from generation to generation is another matter entirely. Children of alcoholic parents may be and probably will be of a neurotic temperament, whose nerves are easily unstrung and who are apt to look for solace in strong drink. Once the habit is contracted by such as this it quickly develops into a disease. It would seem to be a reasonable view to take that severe treatment is not calculated to cure inebriates of this description. On the other hand, to treat the whole army of drunkards too well might be to place a premium on drunkenness, a result which would be disastrous in every way. The most rational mode of treating inebriates would seem to be to place them under the supervision of a physician, who is versed in psychology, who would decide as to the manner of treatment adapted to their several cases. The old belief, to which so many still cling, that inebriety is, in all instances, a vice which must be suppressed with a strong hand has been demonstrated to be wrong. Besides, it is not workable.

NASAL HEADACHE.

AMONG minor ills there is none productive of greater discomfort to the patient and annoyance to the physician than the symptom or complex of symptoms ordinarily known as a headache, and its treatment has called forth more remedial measures, both ethical and nonethical, than any other common illness. Notwithstanding this fact, its treatment is often a failure, and this can be traced as a general thing to the fact that the remedial measures are directed to the removal of the symptom rather than of the causative disease condition. The vague and uncertain disturbance of the economy commonly termed "biliousness," for want of a better appellation, was for years regarded as the basis for most headaches, but now intestinal toxemia, uricacidemia, eyestrain, and a number of other conditions are looked upon as factors at fault. In an article in the *Glasgow Medical Journal* for November, 1906, W. S. Syme calls attention to the fact that diseases of the nose may also give rise to headaches, and that to this etiological factor an insufficient amount of attention has been given. This may be due to the fact that the study of diseases of the nose is itself of comparatively recent development. And yet, as Syme points out, this organ from its position, its anatomical connections, and its functions, is eminently calculated to give rise, when it is the seat of pathological changes, to the symptom under discussion. For it is an established fact that the nasal cavities are in close proximity to the brain and its membranes; the venous channels of the nose are in direct connection with those inside the cranium, and the same may probably be assumed for the lymphatics; the trifacial nerve, the great sensory nerve of the head and face, is also in intimate relation to the nose or its accessory cavities during a large part of its course.

As all these reasons are active, we may, and actually do have, headache resulting from direct action of nasal disease on the brain and its membranes, headache from irritation of the trifacial nerve or its branches, and lastly, and perhaps most commonly, headache from a disturbance of the function of the nasal mucous membranes or of absorption by the latter of the products of suppuration. Syme quotes a number of instances to illustrate these varieties, and the recital shows very conclusively that a careful study should be made of every case to determine whether the nasal organ is involved in the production of the headache, even when there are no direct symptoms pointing in this direction. Eyestrain is without doubt the most frequent cause of periodical headaches, and probably in ninety per cent. of all such cases the attacks would be prevented entirely if the eyes were fitted with suitable glasses. Nevertheless eyestrain, as even the most enthusiastic partisans are quite ready to concede, is by no means the sole cause, and when its correction fails to remove this symptom other possible exciters of the reflex must be sought. In such case it is well to remember that the nose may be the offending member, and a recognition of the part which this organ may play will, of course, suggest appropriate local treatment, instead of internal medication applied to the relief of the pain.

Fat Necrosis of the Pancreas.

Of the many attempts that have been made to reproduce the lesions of fat necrosis of the pancreas those of Opie have, without doubt, been the most successful. Other observers, by injecting into the pancreas or into its ducts various caustic or irritating substances such as alkalies, acids, turpentine, oil, soaps, etc., have produced alterations more or less closely simulating the clinical picture observed in man, but Opie was able very accurately to reproduce the typical picture by introducing bile, that is, a substance normally present in the alimentary tract, into the pancreatic duct. Inasmuch as this is something that can easily occur in human beings during life Opie's experiments have been accepted as being more likely to afford a correct explanation of the clinical condition than any of those in which the introduction into the organ of large quantities of foreign substances has been necessary. Polya (*Berliner klinische Wochenschrift,* December 3, 1906) acknowledges the acceptability of Opie's theory, but is of the opinion that it is not adequate to explain all of the cases of fat necrosis that occur. Taking as the basis of his experiments the work done by numerous other observers which shows that the pancreatic juice when unmixed with intestinal secretion has little or no proteolytic power, Polya sought to produce fat necrosis in dogs by injecting duodenal secretion and trypsin into the substance of the pancreas or into the duct of Wirsung. It was found possible in all of these ways to produce fat necrosis, but the most successful method proved to be the injection into the pancreatic duct of intestinal juice taken from the duodenum. All seven of the animals that were treated in this way developed fat necrosis, which in one case was so extensive as to involve not only the intra- and retroperitoneal fat tissue, but also the subcutaneous fat of the abdominal wall, of the thighs, and of the pericardium and pleura. The author is therefore of the opinion that the activation of the trypsinogen of the pancreatic juice which occurs when this is mixed with intestinal secretion can cause the lesions of fat necrosis when the mixture is permitted to take place in the substance of the gland. This view has certain attractive features, to be sure, but further work will certainly be necessary to prove that it is more universally applicable than the theory of Opie, for in most of Polya's experiments a certain amount of bile must also have been injected into the pancreas.

Thyroid Grafts.

Although the earlier attempts to secure the permanent growth of transplanted portions of thyroid gland were followed by almost invariable failure several authors, particularly von Eiselsberg and Cristiani, have lately shown that if the necessary conditions are adhered to success can be obtained. These requirements as formulated by Cristiani demand that the bits of transplanted gland tissue be small but numerous, that only the gland of the same species of animal be used, and that the transplanted tissue must be living. To fulfill the latter condition not more than ten seconds must elapse between the moments of excising and implanting the graft. Cristiani and Kummer have recently reported in the *Münchener medizinische Wochenschrift* of December 4, 1906, a case in which not only was a permanent foothold obtained for the transplanted tissue in a case of goiter, but the graft grew *in situ* and produced perfectly normal gland parenchyma. This patient was a woman presenting a parenchymatous goiter of considerable size, in the removal of which it was possible to leave behind only so small a portion of thyroid substance as to give rise to some apprehension that a condition of cachexia strumipriva might result. Accordingly grafts were made and implanted beneath the right acromion process. These maintained their identity and even increased in size, so that at the end of about three years it seemed safe to remove one of them for microscopical examination. It was found that the glandular mass was composed of perfectly normal thyroid parenchyma, and the authors emphasized the fact that the graft was taken from the healthy tissue of a goiter, since this greatly facilitates the practical application of the procedure. Since it appears to be possible to produce new thyroid organs in man which permanently maintain their identity and are able not only to functionate, but even to increase in size, it is not impossible that the method will be found practically available for use in dealing with both myxedema and cretinism, and so effecting a permanent cure of conditions which otherwise demand the continuous and lifelong administration of the specific remedy.

Human and Bovine Tubercle Bacilli.

What appears like a very rational standpoint in regard to the relative positions of these two organisms is taken by Weber (*Deutsche medizinische Wochenschrift,* December 6, 1906), who expresses the following view: Human tuberculosis is, etiologically considered, not an entity, but is the result of two causative agents which are, however, closely related. The tubercle bacilli of the human type are the producers of tuberculosis in man and the organisms of the bovine type give rise to the tuberculosis of cattle. Infection with the bovine bacilli plays but a small part in comparison to the ravages of the human form and occasions only those varieties of tuberculosis, like primary intestinal and mesenteric infections, in which the portal of entry is to be sought in the gastrointestinal canal. This form, furthermore, is of the less importance, as the likelihood of its transmission from one person to another is extremely slight. Still the danger of bovine infection exists, and therefore it is necessary to observe all possible precautions in order to prevent the transmission of the disease from cattle to human beings through foodstuffs, notably milk. It must not be forgotten, however, that when we regard tuberculosis as a popular disease the chief danger comes not from infected cattle, but from tuberculous human beings, for according to our experience it is only man who serves as a source of bacilli of the human type.

The Dissemination of Tuberculosis.

It is a subject of common belief that the expired air of a tuberculous subject contains the active specific germs in sufficient number and degree of virulence to constitute an important factor in the transmission of the disease. In order to test the truth of this fact Huhs (*Zeitschrift für Tuberkulose,* Vol. IX, No. 2) examined a number of cases in the following manner: The patient was directed to breathe directly into the tube of a spirometer, at the end of which was placed a pad of sterile gauze through which the air was necessarily filtered. This gauze under perfectly aseptic precautions was then incorporated in the abdominal cavity of guinea pigs. None of the experimental animals developed any

evidences of tuberculosis, from which it appears that the expired air is free from virulent germs. These observations would seem to show quite conclusively that we have apparently nothing to fear from this quarter, but, as the writer states, increased attention must be given to those sources which have been repeatedly proven to be the active factors in the dissemination of the disease. The most important of these is the sputum, which, in the form of minute infected globules, is scattered broadcast during the act of coughing or sneezing. Prophylactic efforts should therefore be directed mainly to cautioning the patient to keep a handkerchief over the mouth and nose during these acts. If these excretions are then properly disposed of the chances of the patient doing harm to others will be greatly diminished.

Intestinal Absorption.

The results of some interesting experiments on dogs and the human subject on the processes of absorption in the small and large intestine have recently been published by Heile in the *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie,* Vol. 14, 1906. It was found that the small intestine completely absorbed egg albumin as well as cane and grape sugar, so long as the quantity was sufficient to meet the requirements of the body. When overfeeding is practised, however, a considerable portion of the food passes through into the large intestine without any absorption taking place in the small gut and this likewise occurs in the presence of catarrhal conditions in the latter. As these undigested food masses and certain products of the intestinal secretions pass on into the colon, varying amounts of the digestive enzymes are carried along which probably prepare some of the remaining portions of the food for absorption in the large gut. The large intestine itself is incapable of absorption, Heile maintains, so that rectal enemas containing albuminous materials are practically useless. The absorption of sugar and water from the large intestines is also claimed by the writer to be comparatively slight in amount, a statement which seems contrary to the general idea of this matter.

Anatomy in the Daily Press.

An interesting article entitled "Nature's Patent Office" appeared in the supplement of a recent issue of one of the leading dailies. In it the writer endeavors to show that many mechanical devices which are hailed as new discoveries have already been anticipated in the structure and functions of the human body. But, as so often happens when lay writers discourse on professional topics, some unique information is added. We are informed that the Adam's apple was the first storage cistern ever built, and it works with automatic regularity through health and sickness. It is a most important organ of the body, although for centuries it was considered a superfluous attachment. It regulates the flow of blood between the heart and the brain. When it ceases to operate somebody dies of apoplexy or a rush of blood to the brain. When the heart sends up too much blood to the head the Adam's apple steps in to check the flow and store it up for future emergencies. If the heart is temporarily weakened or put out of good running order the blood stored in this cistern is given up and sent to the brain. The perfect working of this little device is apparent when we consider how comparatively few die of rush of blood to the brain or from a deficiency of supply. We can only add the familiar headline, "Important if True."

News of the Week.

For a National Health Bureau.—Prof. Irving Fisher of Yale University announces that a committee has been formed for the purpose of considering the organization of a national bureau of health and of pushing the matter at Washington. The purpose of the committee is to urge upon the Federal Government the establishment of a national bureau of health to supervise the manufacture, distribution, and sale of food products. Among its members are: President Eliot of Harvard; President Hadley of Yale; Dr. Robert M. O'Reilly, Surgeon-General United States Army; Dr. William H. Welch of Johns Hopkins University; James R. Garfield, Secretary of the Interior; Charles P. Neill, Commissioner of Labor; Dr. Cressy L. Wilbur, chief statistician, vital statistics United States Census; Dr. Thomas Darlington, Health Officer of New York; Dr. Felix Adler, Dr. Daniel C. Gilman, Miss Hazard, president of Wellesley; Booker T. Washington; Dr. Lyman Abbott; Archbishop Ireland; ex-Secretary of the Navy Long, and Andrew Carnegie.

Red Cross Convention and Receipts.—The Senate in executive session on December 19 ratified the new Red Cross convention signed at Geneva by the representatives of most of the powers on July 6 last, providing for an extension of the international agreements regarding the treatment of the wounded and prisoners in warfare. The War Department has completed the auditing of the accounts of the National Red Cross Society for the year ending November 30, 1906. The total receipts for the year were $3,373,237, with a balance in the treasury of $2,381,334. Among the society's collections were $3,090,204 for the California earthquake relief funds, $224,249 for the Japanese famine funds, $12,758.25 for the Vesuvian volcanic disaster fund, and $8,943 for the Valparaiso earthquake disaster fund. A considerable balance of the California relief money is still in the Red Cross treasury, subject to the call of the California Relief Corporation.

Busts of Scientists to be Unveiled.—On December 29 the Board of Trustees of the American Museum of Natural History will hold ceremonies attending the unveiling of the busts of prominent American scientists presented to the museum by Morris K. Jesup. The ceremonies will take place at the museum, Seventy-seventh street and Central Park West, at 3 P.M. Among others addresses will be delivered by Dr. S. Weir Mitchell of Philadelphia on Benjamin Franklin; Baron Speck von Sternburg on Aexander von Humboldt (read by Count Hatzfeldt); Dr. C. Hart Merriam on James Audubon; Dr. Nathaniel L. Britton on John Torrey; Dr. Robert S. Woodward on Joseph Henry; the Rev. Edward Everett Hale on Professor Agassiz; Dr. Arthur Twining Hadley on James Dwight Dana; Dr. Hugh M. Smith on Spencer Fullerton Baird; Dr. William Keith Brooks of Johns Hopkins University on Joseph Leidy, and Dr. Henry Fairfield Osborn on Edward Drinker Cope.

Pasteur's Memory Honored.—According to the *New York Times,* one of the Parisian newspapers recently started a voting contest among its readers to determine the question of "Who is the greatest man in the history of France." At present Pasteur leads the balloting, with 215,725 votes, and behind him in order come, first, Victor Hugo, and, second, Gambetta, while Napoleon is a rather poor fourth, a result gratifying to men of science, but discouraging to conquerors.

Sleeping Sickness.—Prof. Robert Koch, who is at present in the Victoria Nyanza region in Africa studying the nature of trypanosomiasis, in a report to the German Imperial Ministry of the Interior reports great success in the treatment of the disease by means of subcutaneous injections of an arsenic preparation. He states that he has found that the *Glossina palpalis*, a fly which is a source of infection with the trypanosomes of the disease, lives in the undergrowth or water plants at the margin of lakes and feeds on dead water fowl, fish, and crocodiles, especially the latter. Koch availed himself of the offer made by the British Government to place at his disposal an empty mission house at Bougali, Sese Islands, northwestward of Victoria Nyanza, where there are now 900 patients under treatment with subcutaneous injections of the arsenic preparation. He has had patients under observation for two or three months, but on account of fear of relapses concludes that they must remain another two or three months under observation. It is stated that through the ravages of the sleeping sickness the population of the Sese Islands, which in 1902 was 30,000, has been reduced to less than one-half of this number.

Typhoid Epidemic in Scranton.—On one day recently four deaths from typhoid fever and forty-nine new cases of the disease were reported from Scranton, and the total number of cases thus far reported is over two hundred and fifty. It is believed that the water supply of the city is responsible for the epidemic, and the Elmhurst reservoir, which supplies the larger portion of the city, has been closed. All public taps have likewise been shut off. Two attachés of the State Bureau of Health, Dr. A. B. Moulton and F. W. Wetherell, an expert sanitary engineer, are in the city assisting the local authorities.

Model Charity.—At a recent conference with the members of the Illinois State Board of Charities, Governor Deneen outlined a comprehensive plan for placing the State institutions in the first rank. The following recommendations were threshed out and adopted as the program of the administration for the next two years: Model farms supervised by instructors from State Agricultural College, to be installed at every one of the State institutions for the feeble-minded, defective and insane. To abandon the old asylum for the criminal insane at Menard, as unfit for further occupancy. To establish a village of the simple, a segregated colony for improvable epileptics, modeled on those in Belgium. To establish camps for curable consumptives at all the institutions, and one general sanatorium. Appropriation of $15,000 for free distribution of antitoxin. The establishment of a school of psychopathy, at Kankakee, where physicians, beginning with those connected with the State institutions, may be educated in the recognition and care of the insane. All buildings erected in the future are to be fireproof.

Radium Classified as a Chemical Salt.—The disputed point as to the status of radium under the tariff law has been decided by the general appraisers to the effect that radium is a chemical salt, and therefore dutiable at 25 per cent. *ad valorem*. The importers have contended that it should be accorded free entry as a crude mineral, but General Appraiser Wilbur F. Lunt, who wrote the opinion, overrules the protest on the ground that the merchandise is radium bromide, and therefore must be assessed as a chemical salt.

Flat Car Wheels to be Repaired.—As the result of a conference between Dr. Darlington, Health Commissioner, and the officials of the Metropolitan Street Railway the latter have promised to do away with the needless noise occasioned by running cars with flat wheels. Hereafter as soon as a car wheel becomes flattened the car, on reaching the barns, will be fitted with new wheels and the flattened ones will be trued before being put into use again. Experiments are also under way to determine the value of a new steel wheel which it is claimed is less likely to become flattened than those now in use. If the company were to go a step further and replace the noisy and antiquated hand brakes with which the cars are now equipped by the much more efficient pneumatic brake not only would the street traffic be rendered more safe, but another very objectionable element of noise would be removed.

Congress of American Physicians and Surgeons.—The seventh meeting of this Congress will be held in Washington on May 7, 8 and 9, 1907, under the presidency of Dr. Reginald H. Fitz of Boston. On Tuesday, May 7, the subject for discussion will be "The Historical Development and Relative Value of Laboratory and Clinical Methods in Diagnosis." The president's address will be delivered in the evening of that day. On May 8 the subject for discussion will be "The Comparative Value of the Medical and Surgical Treatment of the Immediate and Remote Results of Ulcer of the Stomach."

Johnson County (Ia.) Medical Association.—The following officers were elected for the ensuing year at the recent meeting of this society: *President*, Dr. Henry Albert; *Vice-President*, Dr. Laura H. Branson; *Secretary and Treasurer*, Dr. J. A. Valenta.

Buchanan County (Mo.) Medical Society.—At its recent meeting this society elected the following officers: *President*, Dr. O. B. Gleaves; *Vice-Presidents*, Dr. S. F. Kessler, and Dr. W. J. McGill; *Secretary*, Dr. C. W. Fassett; *Treasurer*, Dr. J. M. Bell.

New York Academy of Sciences.—At the annual dinner of the New York Academy of Sciences an address was delivered by Dr. N. L. Britton, on "Considerations and Illustrations of Color in Plants." These officers were elected: *President*, Dr. N. R. Britton, Director of the Bronx Botanical Garden; *Secretary*, Dr. E. O. Hovey, Curator of the American Museum of Natural History; *Treasurer*, Emerson McMillin; *Editor*, Prof. E. L. Poor of Columbia University.

Newton County (Miss.) Medical Society.—The following were elected as officers at the recent meeting of this organization, held in Newton: *President*, Dr. J. B. Bailey, Conehatta; *Vice-President*, Newton county, S. B. Henton; *Vice-Pesident*, Neshoba county, D. J. Rush; *Secretary and Treasurer*, W. J. Chapman, Newton.

St. John (N. B.) Medical Society.—At the recent meeting of this society officers were elected as follows: *President*, Dr. Thos. Walker; *Vice-President*, Dr. Jas. Christie; *Secretaries*, Dr. Warwick and Dr. J. H. Scammell; *Treasurer*, Dr. J. R. McIntosh.

St. Louis County (Mo.) Medical Society.—Officers were elected as follows at the recent meeting of this society: *President*, Dr. F. E. Guibor of Maplewood; *Vice-President*, Dr. O. J. Jensen, Florissant; *Secretary and Treasurer*, Dr. W. R. Moore, Central.

Morgan County (Ill.) Medical Society.—At a recent meeting held in Jacksonville the following officers were elected for this society: *President,* Dr. E. L. Crouch; *Vice-President,* Dr. H. C. Woltman; *Secretary,* Dr. Allen King; *Treasurer,* Dr. E. F. Baker.

The Alumni Association of the German Hospital in the city of New York will hold its tenth annual banquet at the Café Martin, on Saturday evening, December 29, 1906.

Northern Tri-State Medical Association.—The thirty-fourth semiannual meeting of this organization will be held at Elkhart, Ind., on January 8, 1907. The president is Dr. Charles D. Aaron of Detroit and the secretary is Dr. Wm. F. Shumaker of Butler.

In Honor of Dr. Mary Putnam Jacobi.—Under the auspices of the Women's Medical Association of New York City a memorial meeting is to be held at the Academy of Medicine on the evening of January 4, 1907, as a tribute to the late Dr. Mary Putnam Jacobi. Addresses will be delivered by Dr. William Osler, Dr. Elizabeth Cushier, Prof. Felix Adler, Mrs. Florence Kelley, Dr. Charles L. Dana, Mr. Richard Watson Gilder, and Dr. Annie S. Daniel.

The Late Dr. W. K. Otis.—At the regular meeting of the Second Section of the American Urological Association, held in New York on Wednesday, October 24, 1906, the committee appointed to prepare a memorial on the death of Dr. W. K. Otis presented the following:

"The ties of lifelong intimacy which bound most of us to Dr. Otis, make his death a subject of grief to each individual. The usual set form of preamble and resolutions, therefore, were deemed inadequate by your committee to express our sorrow. "Billy's" demise is, to the older members of the association as if a much loved brother had gone from us. Your committee begs to submit:

William Kelly Otis' earthly career ended on September 22, 1906.

To the members of the American Urological Association, his death is a threefold blow.

Most of us knew him intimately from his childhood; by his decease we lose a consistent friend, a charming companion, a most estimable colleague.

To the Science of Urology his death means an irreparable loss. Cut off in the midst of his career, his inventive genius is stopped; the new and useful instruments he was continually devising must now be perfected by other hands. The advances in our work, he can no longer aid in developing.

The American Urological Association loses one of its founders, one of its most active coadjutors, one of its truest adherents.

Our association shares with the family of William K. Otis, with the profession at large, and with that world in which true manhood is understood and appreciated, that deep grief which the death of so noble a character inspires.

[Signed] Ramón Guiteras,
A. Ernest Gallant,
Ferd. C. Valentine,
Committee.

The Late Dr. William P. Brandegee.—The following resolutions on the death of Dr. William P. Brandegee were passed at an executive meeting of the Otological Section of the New York Academy of Medicine, on Thursday, December 13, 1906:

Whereas: Death has suddenly taken from us, in the prime of his life, our colleague, Dr. William P. Brandegee, a member of this Section, and one of its most faithful and enthusiastic supporters; and

Whereas: By his unselfish devotion to duty, and his professional ability, he has won the respect and admiration of all who were privileged to know him; therefore be it

Resolved: That in the death of Dr. Brandegee this Section has sustained the loss of one of its most valued members, whose personal character and professional career must remain a lasting stimulus to the highest and best aims of his colleagues.

Resolved: That our profound sympathy and condolence be, and hereby are, offered to the bereaved widow and family, and that a copy of these Resolutions be presented to them.

Resolved: That these Resolutions be inserted in the Minutes of this Section, and that a copy be sent to the Medical Record, and the *N. Y. Medical Journal* for publication.

[Signed] Dr. James F. McKernon,
Dr. John D. Tichards,
Dr. Joseph A. Kenefick,
Committee.

Dr. Emil Gruening, *Chairman.*

Obituary Notes.—Dr. William Herbst of Trexlertown, Pa., died December 22 at the age of seventy-three years. He was graduated from Jefferson Medical College in the class of 1855. He was well known as a botanist and for several years was professor of botany at Mühlenberg College.

Dr. Charles C. Odlin of Melrose, Mass., died on December 19 at the age of sixty years. He was one of the founders of the Melrose Hospital and was at one time president of the Massachusetts Medical Society.

Dr. Samantha Nivison of Hammonton, N. J., died on December 19. She was born in Mecklenburg, N. Y., in 1833 and received her medical degree from the Women's Medical College of Philadelphia in 1856. In 1862 she opened a sanatorium at Dryden, N. Y., and later also conducted a similar institution in Hammonton.

Dr. J. R. Coleman of Paducah, Ky., died on December 12 of nephritis at the age of forty-six years. He was graduated from the medical department of the University of Louisville in 1883 and had practised in Paducah for six years. He was at one time vice-president of the Southwest Kentucky Medical Society, and also of the West Tennessee Medical Association, and had been president of the Caloway County Medical Association and of the McCracken County Medical Association.

Dr. George M. Emrich of Chicago died on December 12 of acute nephritis. He was born in Brockville, Ill., 1853, and was graduated from the Chicago Medical College in 1873. He retired from active practice in 1893.

Dr. R. D. Clarke of Akron, Ia., died on December 10 at the age of sixty-four years. Dr. Clarke was born in Cortland County, N. Y., but his family soon removed to Wisconsin. He served in Company K Wisconsin regular infantry during the Civil War. He received his medical degree from Rush Medical College and had practised in Akron since 1867.

Dr. John R. Leigh of Clarksville, Va., died on December 12 at an advanced age. He was one of the best known physicians in his county and had been an active practitioner for over sixty years. He served with distinction in the Civil War.

Dr. Joseph H. Firestone of Freeport, Ill., died on December 14 of typhoid fever. He was born at Fredericksburg, O., in 1862, and was graduated from the Northwestern University of Chicago in 1897, since which time he had practised in Freeport.

Dr. Walter D. Clement of Toronto, Ont., died on December 11 at the age of seventy-six years. He had practised in Oxford County for forty years, beginning in Innerkip at the age of twenty-four and remaining there until thirteen years ago, when he moved to Woodstock. About three years ago he gave up active work and moved to Toronto.

Dr. Edward D. Cherry of Marboro, Va., died on December 16 at the age of eighty-three years. He was for many years one of the best known physicians in the county, but retired from practice some time ago.

Dr. Jeremiah R. Levan died at Philadelphia on December 17 at the age of seventy years. He was graduated from the medical department of the University of Pennsylvania in the class of 1861. He was medical director of the Fidelity Mutual Life Insurance Company.

Correspondence.

PROSTATECTOMY IN TWO STAGES.

To the Editor of the Medical Record:

Sir:—I notice in your issue of November 24 an editorial note upon my article in *The Annals of Surgery* on "Prostatectomy in Two Stages," and in the later issue of December 8, a letter from Dr. Howard Lilienthal claiming priority in the two-stage operation for the removal of the hypertrophied prostate.

I desire to answer this letter in the same spirit in which it was written, and to submit some other facts bearing upon the matter in question. In the first place I would call attention to the opening paragraph of my article, which reads: "It is not the object of this brief communication to present a novel operative technique or original method, but it is simply an observation of personal work performed in the past year, etc."

There is, therefore, no intention on the writer's part to claim priority. The work reported was confined to that of the *previous year*. I had, for several years, deliberately operated in two stages in similar cases, although I had never reported upon it, and I have not yet been able to find the date of my first operation.

In any case, I would call attention to the fact that Dr. Samuel Alexander wrote a paper (December 12, 1896) about ten years before the appearance of Dr. Lilienthal's paper, in which he calls attention to the advantage of preliminary perineal drainage prior to performing a complete prostatectomy, and, in this article, reports a case obviously operated upon some time before the date of publication. In a personal letter to me Dr. Alexander states that the value of perineal drainage in these cases he learned in 1883.

There is no intent on my part to disregard the work of Dr. Lilienthal along the same lines; and, had I known that there would be found in my paper any suggestion of a claim to priority, I would have stated these facts at the time of writing.

Charles H. Chetwood, M.D.
109 East Thirty-fourth Street, New York.

OUR LONDON LETTER.

(From Our Special Correspondent.)

GENERAL MEDICAL COUNCIL—HOSPITAL MANAGEMENT—ANEURYSM OF THE NECK—SARCOMA—CEREBRAL HEMORRHAGE—FAT NECROSIS—EXTERNAL VERSION—THE UNIVERSITY AND MEDICAL SCHOOLS—LUNACY.

London, December 7, 1906.

This is the last day for sending in voting papers for the election of three direct representatives on the General Medical Council. Some people think the vote will be made larger than usual, but those who have spoken to me about it seem very apathetic. The British Medical Association is of course trying to return its own nominees. One point against them is that they favor the notion of an annual impost on practitioners to keep up the Council. Many are not aware of this, but as soon as it is mentioned express opposition and even indignation. When hundreds find it so hard to get a livelihood it does seem too bad for their richer brethren to propose a tax on behalf of a Council that has never given satisfaction. Three other candidates unite on the plea that only a general practitioner ought to be chosen. There have been good general practitioners on the Council, but none of them, perhaps not all together, have done as good work there as Sir Victor Horsley—so the argument does not seem much. It was used, however, against one of the best candidates (who has withdrawn), although he had been some thirteen or fourteen years in actual general practice and fought the best battle against contract work before he became a consultant.

The session of the Council was concluded last week. The proposal to increase the number of direct representatives was again outvoted. The fact is this direct representation has proved useless and was a blunder at the time, stimulated by the British Medical Association in the hope of controlling it. Indirect representation was urged by others, that is that each corporation should give the voting to the members and not to its ruling committee. That would have been a real reform.

Yesterday Sir William Church presided at the conference on hospital administration. A scheme of twenty-five clauses intended to serve as model principles of hospital management had been drawn up, and it was actually proposed that the whole should be accepted *en bloc*—a plan wholly worthy of the methods of the British Medical Association, which so often succeed in stifling discussion. But before this course was moved Sir William Church spoke and especially enforced the opposition of the profession to the abuse of the out-patient department. He showed how that side of hospital work had gradually increased, and said that in 1682 the authorities of St. Bartholomews had complained of its cost, though at that time the patients must have been insignificant in number. Originally out-patients were confined to those who had been treated in the wards. Now every one fancied he had a right to such relief, and it was given to the great injury of the profession.

Sir H. Burdett then moved a general approval of the principles formulated by the joint committee, remarking that medical men insisted on a reduction in free treatment; it was certain some who received it could afford to pay for it. Hospitals had become desirable places of residence in illness. The poor looked on disease as only to be removed by drugs, and some mothers brought children for these when they only needed to be washed and fed. He advocated the establishment of provident dispensaries throughout the country.

The motion was seconded by Dr. Pope, who was followed by a number of speakers, who objected to vote on a series of recommendations as a whole, some clauses being objected to by some and others by other speakers and some being inconsistent with the institutions they represented. Thus Mr. Harben of St. Mary's Hospital desired the omission of the restriction on pay-wards. It was further proposed to omit the clauses which applied to the medical staffs as distinguished from lay-governors of hospitals. The clause, recommending the abolition of subscribers' letters of recommendation, was also objected to. Then an amendment was moved that the clauses be separately discussed, and this was supported by several speakers. The Chairman suggested the adoption of the general principles, but it was said this would lead to no action, and eventually it was agreed to appoint a committee to report further and to hold a conference annually.

At the Medical Society of London on the 26th inst., Mr. J. Berry related a case of large arteriovenous aneurysm of the neck in a young girl. It was as large as the fist and produced dyspnea, hoarseness, and palpitation. All the deep and most of the superficial veins of the right anterior and posterior triangles seemed to be involved; but on operating the main trunk of the internal jugular and the common carotid were not involved. The sternomastoid was divided, and the tumor dissected out. It was suggested that cricoid aneurysm of the scalp of traumatic origin might be composed of dilated, thickened, tortuous veins. As to this the President (Mr. Ballance) described cases which he believed were arterial, but in others he thought they might be both arterial and venous. Mr. Wallace said when veins and arteries communicated in the neck there was greater venous dilatation than elsewhere, *e.g.* the popliteal space. Mr. Spencer considered cricoid aneurysms of the scalp were arterial.

A case of sarcoma in the pterygoid region in a man of thirty was then described by Mr. G. W. Spencer. The tumor protruded behind and below the ramus of the inferior maxilla and also inward so far as to nearly close the fauces. Dyspnea, dysphagia, and insomnia were distressing. The tumor was encapsulated as was shown by mobility of the superficial structures and absence of glandular enlargement, as well as by the mucous membrane gliding freely over it, with no sign of induration or ulceration. A horizontal incision was made below the jaw and the tumor shelled out, and proved to be a fibrosarcoma. There was no hemorrhage and the pharynx was not perforated. Seen six months afterwards there was nothing abnormal but the linear scar. A similar case was described by Patrick Heron Watson, in 1869, who shelled out the tumor

through a free incision penetrating the mouth. Another was also removed by Sir F. Semon from the side of the pharynx. The patient had worn a tracheotomy tube for several years.

At the Clinical Society Dr. Walter Carr read an account of a case of hemorrhage into the prefrontal lobes which well illustrated the difficulties of diagnosis in such lesions. Diabetic coma, uremic coma, or apoplexy might have accounted for the case, and only at post mortem was its true nature shown. A small saccular aneurysm was found on the anterior communicating artery, and rupture had occurred into the left prefrontal lobe, the hemorrhage extending into the right lobe, probably only a short time before death. The patient had been admitted in a semicomatose state seven hours after sudden unconsciousness had set in. There was albumin and sugar in the urine. The aspect was not that of diabetic coma. In two or three days consciousness returned, but on the seventh day drowsiness appeared, temperature rose, and he died on the ninth day, comatose. The case shows that a small hemorrhage into the prefrontal lobe may be followed by recovery, having given no indication of so serious a lesion. This view is supported by a similar case mentioned by Dr. A. E. Garrod, when the patient died of a second attack, the first one having left a clot found at the post mortem.

Dr. J. Fawcett read a paper on acute peritonitis with fat necrosis, but no disease of the pancreas. At a laparotomy nothing was found except areas of fat necrosis on the great omentum and a little extravasated blood. Death occurred next day. No abnormal change was found in the pancreas, even under the microscope. Cultivations from the spleen and blood from the right heart gave pure growth of *Bacillus coli communis*. Most such cases are associated with pancreatic disease, but three others were reported from Guy's records of the last six years, though in none was the microscope used. The President, Mr. Clutton, thought we could not at present explain the presence and absence of fat necrosis, and said that in some cases of slight injury in which laparotomy had been done, extensive necrosis had been found and recovery followed.

Mr. Feddon related a similar case in which he found a brown fluid in the abdomen and the patient recovered. Mr. Spencer suggested the possible presence of accessory lobules of the pancreas. Dr. Bosanquet suggested a small hemorrhage at the border, and in support of this observed that hemorrhage rather than inflammation was the primary lesion in many cases, especially when fat necrosis and pancreatitis coexisted.

The Obstetrical Society discussed last month the methods of external version apropos of a paper by Dr. Rivers Pollock, who reported fifteen cases. He advocated suspension of the patient by the feet nearly or quite in the vertical position, a plan old enough, for Hippocrates recommended something of the kind. This position, Dr. Pollock said, led to disengagement of the breech from the brim, and it could be prevented from descending again by pressure, and the patient could then be placed on her back and the version completed. Dr. Champneys said the position of the legs was not important; it was the trunk and especially the pelvis which mattered. In the erect position the brim of the pelvis was inclined to the horizon at an angle of about 60 degrees. In the inverted position the angle would be the same. In the genupectoral position, properly arranged, it would be pointed vertically downwards. Could the inverted position be better? Dr. Herman said that in the Trendelenburg position the long axis of the uterus was horizontal. Dr. Herbert Spencer said that at about seven and a half months the operation was easy and could be done in a few seconds with the patient in the dorsal position. Later it became increasingly difficult, and was usually impossible at term or during labor. Raising the pelvis seemed likely to facilitate external version, but none of the cases related were at term, and it was then or in labor that difficulty was experienced. Dr. Williamson said he had tried the method in a modified form in a breech case. He could not dislodge it from the brim in the dorsal position, and then tried the Trendelenburg position over the back of a chair, when version was easy. A fortnight afterwards labor took place with a vertex presentation. Dr. Nepean Longridge had often done external version in breech cases; in three he tried the Trendelenburg position. He asked whether in the vertical position artificial liquor amnii might be poured into the uterus in cases in which the natural fluid had drained away. Dr. Pollock, in his reply, said he had tried the genupectoral position in one case, but the child was not disengaged from the brim, and it was not easy to reach it and push it towards the fundus.

Sir Arthur Rücker distributed the prizes at Charing Cross School on Wednesday and took the opportunity of telling the students that the relations of the London University to the medical schools are now much the same as those which subsist between the colleges and universities of Oxford and Cambridge. He was glad there had never been any friction between the schools and the university, which was not only a going but a growing concern. It had now 3,000 internal students and 8,000 other students. In the past five years its income had increased from £29,000 to £95,000.

The London Hospital has received £5,000 from Mr. J. A. Fielden, completing his gift of £32,000 providing an isolation block of eighty beds for infectious cases.

Yesterday Sir J. Crichton-Browne, who has been a Lord Chancellor's Visitor in Lunacy since 1875, gave evidence before the Royal Commission. He said the flagrant abuses and cruelties that formerly existed had been abolished by the vigilant supervision of the commissioners on lunacy, but that board was terribly overworked and the work must go on increasing. He did not believe the addition of the chancery visitors would relieve them. It would be a public calamity and a grievous wrong to the insane to interfere with the jurisdiction of the commissioners. It was a moot question whether insanity was increasing out of proportion to population; he inclined to think it was. Insanity was not one well-defined disease, but a group with nebulous margins, and it might be that the mass was expanding in one direction and contracting in another. Even if the increase was exactly in proportion to population that would not be satisfactory, for our civilization could not be of the right sort if we were carrying our diseases and infirmities with us. He looked to the time when the Board of Commissioners should be an integral part of a Board of Health, presided over by a cabinet minister. Meantime it was urgently needed to reinforce the commissioners. He suggested, inter alia, two additional members and a paid chairman of distinguished position.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

BRONCHOSCOPY—CIRCULATION IN THE EXTREMITIES—OSSIFYING MYOSITIS—PERFORATING GASTRIC ULCER—PUBIOTOMY—FAT NECROSIS.

VIENNA, November 25, 1906.

PROFESSOR HERMANN VON SCHRÖTTER recently performed the operation of bronchoscopy under conditions of unusual difficulty. The patient was an infant of eight months, suffering from the impaction of a spicule of bone which had penetrated into the right bronchus. The little patient had been brought into Escherich's clinic suffering from extreme dyspnea and v. Schrötter was called in as consultant. It was found that the right side of the thorax exhibited no respiratory movement whatever, and the diagnosis of foreign body in the air passages was made. On attempting to introduce a bronchoscope for the purpose of ascertaining the position of the obstruction v. Schrötter found that no instrument sufficiently small was available. A special tube with a diameter of only 3.5 mm. had to be made, but was furnished by the instrument maker the next day. By means of this instrument v. Schrötter was able to discover the body and to seize it with a suitable forceps. On attempting to withdraw it, however, it was discovered that the object was too large to pass through the lumen of the tube and the operator decided to remove the bronchoscope, together with the forceps and the foreign body. In doing this so much force was necessary that it seemed more than probable that serious injury to the air passages must have resulted, but this turned out not to have been the case. The infant immediately began to breathe freely and had soon recovered completely. The object removed was found to be a particle of bone 1.5 cm. long which the child had gotten into its mouth from a sausage that it had been sucking. The operation was performed without anesthesia.

A procedure for the purpose of ascertaining in cases of gangrene of the foot at what point the circulation is interrupted was demonstrated by Moszkowicz before the Gesellschaft der Aerzte. One patient was a waiter of sixty-seven years, who suffered from intermittent claudication. The second patient was a thirty-seven year old cobbler who had lost his fourth and fifth toes on the left side through gangrene attending Raynaud's disease. The test is performed by elevating the extremity for a short time and then applying a rubber bandage to the thigh sufficiently tight to produce complete anemia of the limb. After about five minutes the bandage is released. In a normal leg the circulation reappears instantly, but this does not occur in patients suffering circulatory disorders. In the patient with Raynaud's disease the cutaneous flush appeared quickly in the thigh, but did not at first proceed beyond the knee. In the course of a minute or two it could be seen gradually creeping down to the toes, until finally the circulation was restored in these also. The other patient manifested this delay in the restoration of the blood flow to a much less

degree, and in three cases of gangrene of the foot it could be observed that the flushing became checked at a definite line of demarcation and did not proceed beyond this point. The symptom was so pronounced that the speaker believed that by this means it was possible to determine at what level amputation should be done in cases of gangrene. In cases in which the circulation was only impeded, but not completely interrupted, the symptom could be used as a differential test, and the speaker also suggested that possibly its frequent repetition might favor the development of a collateral circulation.

A case of the unusual disease, progressive ossifying myositis, has been reported by Gustav Singer. Since the middle of the last century only sixty-six cases have been described and the present one is only the second observed in Austro-Hungary. The patient was a boy four years old who, since the age of eighteen months, had had bony growths develop in the various muscles. The muscles of the neck and upper back had been transformed into a rigid cuirass, rendering the head immovable. The muscles of expression and of mastication were not involved, but those of the back and thorax were ossified to a considerable degree and respiration was abdominal. The flexor muscles of the upper arm were converted into a thick plate of bone and the member was fixed to the trunk through the ossified fibers of the latissimus dorsi and pectoralis major. The muscles of the forearm and of the hand were not involved. The abdominal muscles were permeated by a recticulum of bony strands, but the glutei and the lower extremities were free from change.

Prof. Schnitzler has successfully operated on two patients suffering from perforation of gastric ulcers into the free abdominal cavity. One of these cases was particularly interesting, since the patient had already recovered from a similar perforation. While on the one hand this may be regarded as an instance of the effectiveness of modern surgery, on the other hand it is instructive since the second perforation occurred a year after a gastroenterostomy performed for the relief of the peptic ulcer. Schnitzler stated that recurrences of ulcer after gastroenterostomy, no matter how performed, occurred so frequently that the operation could no longer be regarded as a curative procedure. When stenosis was present, of course, the operation was justified or demanded, but in dealing with cases of simple ulceration without mechanical disturbances operative treatment was indicated only when persistent internal treatment had been without effect.

Heinrich Rotter has reported a case of pubiotomy which he considers is an argument in favor of the operation. The woman was a VI-para, but only the third child was born alive. She was only 145 cm. in height and presented evidences of early rickets. The anterior superior spines measured 25 cm., the iliac crests 27.5 cm., the external conjugates 17 cm. The woman desired a living child, and since she had had one spontaneous labor she was allowed to go to term. Pubiotomy was deemed the most suitable procedure, and by this means a living child was easily delivered with forceps. The child weighed 3,700 gm., and was 52 cm. in length. The pelvis was first encircled by a binder, but from the second to the eighth day was held together by adhesive straps. The legs were kept bandaged together till the eighteenth day. The incisions healed by first intention, the gait is perfect, and bony repair has taken place without any considerable amount of callus formation.

A case of fat necrosis has been reported by Sigmund Fuchs. The patient was a very stout woman of fifty-three years, who suddenly began to have severe pain in the upper part of the abdomen, accompanied by vomiting. Sugar and acetone were found in the urine, and on the forty-seventh day of the disease she died in coma. At the autopsy the diagnosis of fat necrosis was confirmed, and it was found that only the head of the pancreas still remained. The abscess resulting from the necrosis had ruptured into the stomach and given rise to metastases in the lung.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

NEW MEDICAL SCHOOL—LEPROSY IN A WHITE MAN—X-RAY TREATMENT OF LEPROSY—THE CHOLERA SITUATION.

MANILA, November 1, 19—

THE new Philippines Medical School, provision for which was made by Act of the Commission some months ago, is gradually assuming definite shape. The Board of Control has named the following persons as members of the faculty: For the Chair of Chemistry, Prof. Paul C. Freer, formerly of Michigan University; Chair of Pathology, Dr. Harry T. Marshall, formerly of Johns Hopkins University; Chair of Tropical Medicine, Dr. Richard P. Strong, of the Bureau of Science; Chair of Surgery, Dr. John R. McDill, formerly assistant to Dr. Nicholas Senn, now surgeon-in-chief of the St. Paul's Hospital, Manila; Chair of Hygiene and Public Health, Dr. Victor G. Heiser, P. A. Surgeon, Public Health and Marine Hospital Service, Director of Health; Chair of Medical Jurisprudence, Dr. Ariston Bautista Lim; and Chair of History of Medicine, Dr. José Albert. Soon after these gentlemen were named a meeting was held and Dr. Paul C. Freer was chosen dean of the faculty. It is hoped that the school will be open and ready to receive students at the beginning of the next scholastic year, which will be about the first of June. It is intended to procure the services of competent persons, from either the United States or Europe, to teach the subjects of anatomy and physiology. No separate building is yet available, but with the facilities of the Bureau of Education and of the new Civil Hospital, at the disposal of the Medical School, it is thought that there will be ample accommodation for the first few years. Especial care will be taken to make the course as practical as possible, and in order to do this five full years will be necessary before graduation.

With the exception of a soldier of the United States Army, who is now being cared for at Fort Screven, and who is supposed to have contracted leprosy in the Philippine Islands, the first case of leprosy known to have occurred in a white man in the Philippines was detected a few weeks ago in the person of G. P., who was employed as a clerk in the Insular Custom House. He was born in Germany in 1864, but lived in the United States for a few years prior to his coming to the Philippines. He has been a resident in the islands during the past six years. He was said to have been a man of temperate habits, with the exception of drinking a large quantity of beer daily, but not sufficient to produce intoxication.

There is not much light upon the manner in which he might have contracted the disease. During the past year he made his home with a respectable family, and so far as known no leper servants or others were known to be about the house. About two years ago, while a resident in the provinces, it is said he lived with a native woman as his mistress. Investigation is now being made in order to determine whether this woman had leprosy.

During the past year he had been complaining of symptoms similar to those of rheumatism, complaining more particularly of ill-defined pains in the feet and legs. He was given the ordinary rheumatic treatment, and while the symptoms seemed to disappear, he did not seem to derive much permanent benefit. About a month ago he became afflicted with a skin eruption, particularly about the face, which partook of the nature of hyperemia. The attending physician became suspicious and had skin scrapings taken which were examined microscopically and found to contain numerous leprosy bacilli. A number of microscopic examinations were made subsequently, and the leprosy bacilli were found in each instance. He was immediately removed to the San Lazaro Hospital, and after confinement at that institution for about ten days he suddenly died. At the time of his admission to the hospital there were no particular symptoms which indicated to the attending physicians that sudden death was to be expected. Up to 6 P. M. upon the day of his death he seemed to be in his usual condition. About 9 P. M. he complained of being unable to sleep, and requested a sleeping powder. He was given ten grains of trional. At 11 P. M. he was found dead in bed by an attendant. The postmortem examination which was made the next day showed that he had a dilated heart and a slight cirrhosis of the liver. No drugs or other substances were found in the stomach which would indicate self-destruction; in fact, it has not yet been satisfactorily determined what was the cause of death.

The new *x*-ray apparatus for the San Lazaro Hospital has now been installed, and the resumption of the treatment of lepers by the *x*-ray will be immediately begun. The two cases which have been mentioned heretofore, from time to time, and which were cured and remained so for a period of about nine months and then relapsed, will be again subjected to treatment.

There has been a great improvement in the cholera situation in the Island of Luzon. During the past week there have been only eight cases, as against several hundred a few weeks ago. In the City of Manila there has not been a single case reported for a whole week. In the province of Iloilo, on the Island of Panay, the situation is not so encouraging. The Bureau of Health reports that for the week ending October 27 there were 630 cases and 480 deaths. The health officials are almost powerless to accomplish anything owing to the belief of the masses that the disease is not cholera, and their consequent indifference to complying with the measures that are recommended for its eradication. During the past week, in some sections of this afflicted province, the preventive measures have received another setback, owing to a widely-circulated rumor that the Government officials were purposely distributing the disease in order to lessen the number of people.

It would scarcely seem possible that such stories should be given credence, yet such is the case. It is said that the origin of this rumor was due to the vaccination against smallpox which was recently commenced in that province by the Bureau of Health.

Progress of Medical Science.

New York Medical Journal, December 15, 1906.

Unusual Suppression of Urine.—H. D. Howe reports a case, his patient being a woman, age not given. She passed no urine for a period of twenty-five days, and died from anemia. There was no coma, and there were no general convulsions, though twitching and local spasms were frequent. The anemia was referred to a hydronephrosis following on blocking of the ureters with a carcinomatous deposit. Autopsy showed the left kidney to be a mere thin-walled cyst, containing about ten ounces of clear fluid. The thick abdominal walls, the thinness of the cyst walls, and its situation beneath the ribs, were the evident reasons for its being overlooked. There was no macroscopic evidence of kidney structure. The ureter was obliterated at the pelvic brim by a carcinomatous mass, originating from the stump of the broad ligament and involving the sigmoid and rectum. The right kidney showed true hypertrophy of the kidney structure, as well as great dilatation of the pelvis. It measured ten inches in length, four and a half wide and three thick, and contained nearly a pint of urine. There was a small carcinomatous involvement of the lower portion. As on the left, the ureter was entirely obliterated by a carcinomatous mass arising from the stump of the right broad ligament.

The Role of the Blood in Nutrition and Repair.—J. P. Arnold refers to the circulatory apparatus in some of the lower orders of life, noting that each body cell, except in the spleen, lies in a pool of lymph to all intents and purposes just as an ameba lies on the water. The products of digestion, the nutritive dextrose, fats, etc., together with water, salts, and oxygen, eventually reach the capillaries, and pass out through the stomata between their epithelial lining cells into the pericellular lymph spaces. The serum albumin and globulin, as well as the fibrinogen, pass out in the same way (osmosis), though less readily on account of the size of their molecules. From these substances added to the lymph, each cell takes up its own required nutritive material. The cell-waste is excreted into the lymph and carried away, although water, salts and carbonic acid gas are also carried away by the veins. Hence the cells live not in stagnant pools, but in a constantly changing lymph stream. Consequently, no cell in the body can be sick or diseased if it is supplied with the proper quantity and quality of lymph and has its waste products properly removed, excepting of course the results of injuries. As the proper quantity and quality of lymph depend upon the quality and quantity of blood, the conclusion may be stated as follows: No cell can be sick or diseased, except as the result of direct injury, if it be supplied with the proper quality and quantity of blood, and have its waste products properly removed. Even the result of direct injury may be brought within this conclusion, for an injury immediately alters the quality and quantity of blood in the injured part. The regulation of the proper amount of lymph is under the control of the vasomotor system. The quantity may be abnormally low from general loss of blood or from diminution of local supply from vasoconstriction or pressure. It may be abnormally high from plethora or excessive amount in localized areas from active vasodilatation or to the obstruction of the outflow through the veins and lymphatics. The quality may be abnormal from ingestion of poisons or improper foods, improper digestion, bad air, bacterial infections, failure of elimination organs, failure of the liver to destroy certain poisonous materials absorbed from the intestines, and to convert uric acid and other kindred waste products into urea or from failure upon the part of the ductless glands to properly elaborate their own characteristic secretions.

Aortic Aneurysm Treated by Introduction of Fifteen Feet of Silver Wire; Death After Four Months.—The salient points in the case reported by J. R. Eastman are embraced in the title of his paper. The patient was a male negro of forty-one years, who denied any specific infection. Full details of findings of physical examination are given. The wire was introduced through a fine trochar without anesthesia into a pulsating tumor in the fifth interspace to the right of the sternum, the trochar being passed directly backward for two and one-half inches, its proximal end being anchored to the skin by strapping. The introduction of the wire seemed to make the patient's pain worse, and three weeks later five feet of the wire were withdrawn. Orthopnea developed and gradually increased. The patient died at stool, death being accompanied by profuse hemorrhage from the mouth. Autopsy revealed a sudden dilatation of the aorta one inch from the heart. This dilatation practically involved the whole arch or the vessel and lung below the level of the arch, filling the space between the descending portion and the heart. At the point of exit of the aorta from the mass which was slightly above and to the left of the growth the vessel wall appeared to assume its normal structure and proportions. The dilatation which practically involved the whole of the arch was uniform, and the mass was spherical rather than spindle-shaped. Detailed autopsy findings are given, together with a photograph showing the site of rupture in the thickened fibrinous wall of the sac in which was partially imbedded the clump of silver wire.

The Fat Content of the Tonsils and Its Relation to the Processes of Metabolism and Infection.—J. Wright gives a résumé of the literature of fat in lymphoid tissue, and notes that his recent researches have led him to conjecture that some of the spaces frequently noted in such tissue are due to fatty degeneration and that this is one of the processes of tonsillar regression. It has been noted in the removal of faucial tonsils, involving forcible pressure that an oily fluid has exuded from the tissues which was not merely the result of an agglutinated lacuna. Examination was made of a tonsil on which there had been a white area supposed to be a gumma. This area was incised, and an oily fluid exuded. Sections of the tonsil stained with osmic acid showed a cavity formed by the metamorphosis of the lymphoid cells into fat or their granular degenerations and replacement by fatty matter. Examination of a series of unselected tonsils invariably revealed fat droplets in the cells, as well as in the intracellular spaces, both of the stroma and of the lymphoid tissue. Fat in the form of droplets may migrate into degenerating as well as into normal tonsils. It is natural therefore to conclude that some of the intracellular fat is normally derived from the passing food, but it cannot be said that it all comes from this source. As a control in a series of cases the tonsillar surfaces were smeared with butter a few minutes before tonsillotomy. In these cases the distribution of the fat was relatively exactly the same as in the other cases, but the increase in quantity was everywhere very marked.

Journal of the American Medical Association, December 22, 1906.

Renal Tuberculosis.—L. Freeman remarks that the old notion that renal tuberculosis was secondary to that of the bladder is now exploded and its hematogenous origin is very generally recognized. This view, supported by clinical experience, is also supported by the experimental findings of Baumgarten that tuberculous infection in the genitourinary system follows the flow of the secretions, from the testicles to the prostate and from the kidneys to the bladder. Renal tuberculosis is generally at first unilateral, and in spite of the fact that it may occasionally become latent for longer or shorter periods, its usual course is progressive, and experience has demonstrated that early nephrectomy, before involvement of the bladder occurs, is the best treatment for unilateral renal tuberculosis, provided the general condition of the patient permits. The existence of tuberculosis elsewhere, if not too far advanced, is not a contraindication; even bad cases of vesical tuberculosis may improve or recover after operation, as has frequently occurred in Freeman's experience. It should be remembered, too, that the tuberculous disease of the bladder is often only apparent, as a reflex from the kidney or the result of irritating discharges. The one essential to be kept in view is that the other kidney must be sound, both as to function and tuberculosis, and an occasional exploratory lumbar incision may be required, though, as a rule, this is ascertainable by other well-known methods. The weight of authority is against partial nephrectomy, and nephrotomy is never indicated except to relieve suffering in case nephrectomy is impossible. It cannot cure, and almost always leaves a troublesome urinary sinus. The removal of the ureter is not ordinarily indicated. If sinuses result they usually heal after nephrectomy.

Nose and Ear Suppuration and Facial Erysipelas.—C. F. Welty accounts for the special frequency of erysipelas in the face by its nearness to the source of infection in the nose or ear. The pus secretion produces an abrasion of the skin or mucosa and inoculation follows. This may also be conveyed by the handkerchief, or, more frequently, he thinks, by the finger. The reason for the so frequent recurrence of facial erysipelas is, he says, because the infection is always present and is practically never eliminated without operation. When streptococci can be determined in the secretion of the ear or nose it should be considered as an established fact that the erysipelas is dependent on them. The reason why 82 per cent. of facial erysipelas starts from the angle of the nose is thus explained. The reason that erysipelas does not occur in every case in which

streptococci exist in the secretions is best given by assuming immunity of modified virulence; not every case of exposure to other infections is followed by the outbreak of the disease. These opinions are supported by the results of the examination of some sixty cases of erysipelas in the city and county hospitals at San Francisco. Idiopathic facial erysipelas, Welty says, is a misnomer.

Retroperitoneal Cysts.—F. D. Donoghue summarizes some of the leading diagnostic points of Wolffian body cysts in substance as follows: A cyst derived from the remains of the Wolffian body develops back of the retroperitoneum and may push the stomach in any direction, or may develop behind and displace forward the aorta and vena cava. True pancreatic cysts would not be likely to do this on account of the relations of the parts. The greater the amount of substance secreted and the amount and number of products from the displaced ectodermal and mesodermal cells, the larger the cyst. Lateral mobility, which has been considered diagnostic of mesenteric cysts, is also characteristic of most tumors of the upper abdomen which do not develop from a glandular organ. A starch-converting ferment is not always present in undoubted pancreatic cysts and has been found in abdominal cysts not connected with the pancreas. Slowly developing obstruction to the pancreatic duct or from interstitial changes, may cause cystic degeneration of the pancreas. Pancreatic cysts are firmly fixed and reach a larger size. Three forms of so-called pancreatic cysts have been described; one, the true, small, firmly-fixed pancreatic cyst; another, the thin-walled, friable pseudocyst, full of pigmented material presenting below the stomach with areas of dullness above and below, and third, a thin, fibrous-walled cyst of large size, containing, as a rule, cholesterin fluid, freely movable, and can be enucleated; it resembles closely a parovarian cyst and develops in close relationship to the pancreas. These are the true Wolffian body cysts, standing in the same relation to the pancreas as do paraovarian cysts to the ovary, and he suggests for them the name "parapancreatic cysts." Aspiration should never be attempted on account of the danger of infection, either by puncture of some hollow viscus or by dissemination of cyst contents. His conclusions are given as follows: "The clinical picture of a cyst developing behind the peritoneum from embryologic remains, depends on the relations it finally assumes. Cysts from the Wolffian body are not uncommon in women. Movable cysts presenting in the epigastrium have usually been called pancreatic, although true cysts of the pancreas are rare (especially in women) and are rarely movable. Developing in the region of the kidney, they may be mistaken for hydronephrosis or may extend so low as to be considered ovarian. Retroperitoneal cysts are usually benign, unaccompanied by symptoms other than those of a mechanical nature.

Tetanus Neonatorum.—J. M. Anders and A. C. Morgan call attention to the wide distribution of infantile tetanus, its special frequency among negroes noticed by southern physicians, and the terrible infectiousness of the disorder in local epidemics. They say that in the light of our accurate scientific knowledge of this disease, the necessity of absolute asepsis in confinement cases, and especially in the care of the cord, should be insisted on. To this end the registration of midwives should be required by law. The medical colleges should give more attention to the subject and instructions as to the simple methods of prevention should be sent out by boards of health, charity societies, etc.

Hymenolepis Nana and Hymenolepis Diminuta.—Four additional cases of the occurrence of *Hymenolepis nana* to those already reported from the United States are published by W. H. Deaderick, who describes the parasite and the method of its detection. It may require, he says, repeated doses of male fern, the only remedy of value, thoroughly to expel the worms, and they are often difficult of detection in the feces after expulsion. They resemble minute opalescent shreds of mucus and the greatest care is needed to avoid overlooking them. He examined for them in a large flat baking pan, painted black, with perforations in one end so that the liquid feces could be retained or poured off without agitation. These cases were discovered during an investigation he was making as to the frequency of uncinariasis, and the finding of so many cases in a limited study leads him to think that the parasite may be of more common occurrence than has been generally supposed. He also reports a case of *Hymenolepis diminuta* in a child, the twelfth on record, discovered like the others while searching for the ova of uncinaria.

French and Italian Journals.

Lavage of the Ureter in Blennorrhagia.—Duchastelet in an address before the Association Française d'Urologie said the ureter, like the bladder, was more sensitive to distention than to contact. The lavage of the anterior ureter without use of the catheter was often painful, the sensitiveness being greater when the mucous membrane showed hyperemia from acute ureteritis and had ceased to be flexible. A rubber catheter, not larger than No. 12, could be introduced; by means of this the injection could be made at once, so that the liquid preceded the catheter into the ureter. Thus surrounded by the liquid, the catheter would hardly come in contact with the mucous membrane and the irritation excited by contact would be almost nothing. The use of cocaine should be exceptional. It prevented the gauging of the sensitiveness of an inflamed mucous membranes to distention while it did not prevent the resulting congestion and might be a source of infection. By the use of a liquid flowing freely back along the catheter, such as a very weak permanganate solution, ordinary treatment could be resumed in a few days.—*Le Bulletin Médical*, October 20, 1906.

Chronic and Multiple Abscesses Due to a Fungus.—Lesné and Monier-Vinard report that they have had under their care a patient with an unhealed abdominal abscess. When the patient entered the hospital the abscess was a crater-shaped cavity the size of a marble; the surrounding skin was purple and infiltrated, the edges sinuous, the bottom sanious and grayish. Two small nodules developed two days after the patient entered the hospital. One was on the anterior external surface of the right forearm, the other was in the right deltoid region. The one on the forearm, after lancing, soon resembled the abdominal abscess. After the one at the level of the shoulder was lanced, two stitches were taken and healing took place quickly. Cultures of the thick, yellowish, homogeneous pus in various media showed characteristics of the mushroom family. With morphological differences according to the media employed, an abundant mycelium was apparent. It consisted of entangled filaments and of rounded masses which were detached, sometimes from the body, sometimes from the filaments. These rounded masses appeared to resemble yeast.—*Bulletin et Mémoires de la Société Anatomique de Paris*, May, 1906.

Cervicofacial Actinomycosis.—Dubreuilh reports the case of a patient, with tumefaction of the right cheek accompanied by trismus and pain in an upper right molar. The tumefaction has continued six years, several abscesses having appeared. The patient is well developed bodily, but not mentally. On the right cheek is a large, hardened subcutaneous surface, not sharply defined, adhering to the deeper parts. This hardened surface includes the temple and the region of the masseter about the external auditory canal and extends also from the forehead to the edge of the inferior maxilla. Adhering to this surface are four small fluctuating projections showing a fungous growth. These protuberances when pressed discharge a clotted pus mixed with blood; the pus contains a large number of yellow grains varying in size from one-fourth of a millimeter to one-half of a millimeter. The patient has not been in the habit of chewing straw or oats, but has often slept on straw. The teeth are good, but the jaws are swollen. Treatment most of the time has consisted of iodide of potassium. A tumefaction still exists from which a drop of pus has been obtained containing round, whitish grains that show under the miscroscope the usual structure of actinomyces. The lesions, although not cured, are now somewhat better.—*Journal de Médecine de Bordeaux*, October 21, 1906.

Abscess of the Liver.—E. Micheleau in an article on hepatic suppurations, classifies sanguinous suppurations into those of arterial origin coming from the general circulation through the hepatic artery, and those of venous origin coming from the intestinal circulation by means of the portal vein. The lymphatics have little part in the disorder. If in a case of dysentery or directly after dysentery along with febrile phenomena pain is felt in the liver accompanied by prominence of the hepatic region, hypertrophy of the liver, fluctuation, a slight tinging of the conjunctiva, digestive trouble, slight edema of the lower limbs, and some other symptoms, arterial abscess of the liver may be diagnosed, although this does not always follow. The abscess rarely heals if left to itself. Only in exceptional cases is it encysted, and the pus reabsorbed. It is also rarely healed by spontaneous opening and discharge. The treatment must be surgical. Puncture of the liver with aspiration is dangerous and is now seldom employed. Laparotomy with incision of the liver is the comparatively simple operation for an abscess of the inferior surface. An operation for an abscess of the superior surface is delicate and complicated. Preventive treatment, which is advocated by certain authorities, consists mainly in the use of enemas from the first stage of the dysentery: large enemas of permanganate of potassium and nitrate of silver, and intestinal and hepatic antisepsis through doses of salol.—*Gazette des Hôpitaux, Civils et Militaires*, October 13, 1906.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held December 6, 1906.

THE PRESIDENT, DR. CHAS. L. DANA, IN THE CHAIR.

Xanthin as a Cause of Fever and Its Neutralization by Antipyretics.—Dr. A. R. MANDEL read this paper. He said that the etiological factors which had been advanced as to the cause of fevers had been mostly studied along lines having the products of metabolism as a basis. They knew that the metabolism in the body was markedly increased in fever and various products had been especially studied by various observers. If they had increased metabolism in fevers, they must expect an increased destruction of cells and tissues, and as among the chief products of cells were nucleoproteids, an increased cleavage of this body would lead to an increased production of purin bases. They knew that among the products of the cleaveage of nucleoproteids they had bases, purin bases, and pyramidin bases. In 1904, at the request of Dr. B. Farquhar Curtis, he examined the products of metabolism in aseptic fever and found a striking resemblance between the increase of purin bases eliminated in the urine and the course of the fever. In all the cases examined patients were given a purin free diet, consisting principally of milk, to prevent the introduction of any exogenous purin. They had found that the normal elimination of purin bases on a purin free diet varied from twenty to thirty milligrams. In one of the typical cases examined, a case of hernia, primary union, no infection, the purin bases rose and fell with the average twenty-four-hour temperature, and in this case he obtained as high as sixty milligrams of purin bodies. In a case of pneumonia the purin elimination was as high as sixty-seven milligrams and followed the temperature. In a case of typhoid fever they found purin elimination as high as sixty-four milligrams. The coincidence between the temperature and purin bases led him to make experiments to prove that purin bases, when introduced in the blood, would influence temperature. He concluded his paper as follows: (1) These observations indicated that in fever there was a distinct relationship between the rise in temperature and the appearance of certain incomplete products of cell oxidation as shown by the excretion of purin bases. (2) The supposition that these bodies were among the substances directly concerned in the production of fevers was strengthened by the fact that the administration of xanthin and caffeine in large amounts would produce a rise in temperature in otherwise healthy individuals. (3) That salicylic acid might neutralize temperature produced by xanthin, either by forming some chemical combination (not as yet established) or neutralize its action on the heat-regulating apparatus.

Dr. GRAHAM LUSK said that the waste of tissue and toxic influences in typhoid fever might be the equivalent of ten grams per day, and amounted to about three hundred grams of flesh day after day, and day after day. The body lost proteid tissue through toxic influences which could not be prevented by giving food of any sort. In pneumonia this toxic waste might be the equivalent of five hundred grams of meat per day; and when this was destroyed the purin bases passed into the blood. It was perfectly possible to eat five hundred grams of meat without rise of temperature. The purin bases of five hundred grams of meat under normal circumstances and in a normal person would be absorbed and pass through the liver, not being oxidized in the liver, but pass to the tissues and oxidized there to uric acid; then one-half the uric acid so formed in the tissues passed to the kidneys and so eliminated, while the other one-half passed to the organs for destruction. If there were no toxic influences one could imagine that when the purin bases occurred in metabolism, instead of being oxidized as normally, passed into the blood stream and passed in larger quantities to the heat-regulating centers, affected them, and so produced vasoconstriction and the other factors which accompanied heat rise.

The Effects of Water on Gastric Secretion as Shown in Dogs with Pawlow Fistula.—Dr. N. B. FOSTER read this paper. He said that if a large amount of fluid was taken with the meal, more acid secretion or a more prolonged digestion would be required. From the point of view of the physician, should drinking at meals be advised? No, because too much water demanded more gastric juice or a prolonged digestion. What he gave was a scientific basis for teaching the medical profession at the present time regarding the effects of the intake of water on gastric digestion under normal conditions, but not under pathological conditions; as yet they had no data on which to decide the latter.

Dr. A. V. S. LAMBERT explained what a Pawlow's stomach was. It consisted of a portion of the stomach segregated by a specially devised procedure, so that a normal connection was maintained between this segregated part and the pneumogastric nerve. A pouch was made from the greater curvature, leaving the lesser curvature and the pylorus intact, the nerves coming to the cardiac end remaining uninjured.

Dr. A. N. RICHARDS said that the most striking fact brought out was that if a certain amount of food was taken with a large amount of water, more juice and more acid were required to carry digestion on. Pawlow introduced two causative factors in the secretion of gastric juice: (1) the psychical, resulting from appetite, and (2) the reflex; cutting the pneumogastric prevented the secretion of gastric juice. The second factor was what he termed chemical excitation, and cutting the pneumogastric had no effect on the secretion of the gastric juice. Pawlow's idea was with regard to the second causative factor, that certain substances in contact with the mucous membrane of the stomach set up reflexly the secretion of gastric juice, and he advanced the same idea with regard to the pancreatic juice. In the latter the acid chyme passing through the duodenum called forth nervous reflexes setting up pancreatic secretion. Acid in the duodenum resulted in the introduction into the blood of certain substances which came in contact with the pancreatic cells, exciting the gland to activity. It had recently been shown that the same state of affairs existed in the stomach, *i.e.* from the mucous membrane in the stomach certain substances got into the circulation and called forth the secretion of typical gastric juice. The fundus yielded none of this gastric secretion. If a small amount of fluid food was introduced it would naturally remain in contact with that portion of the stomach, and would not be able to call forth secretion; but if one increased the bulk, one would expect more gastric secretion to be formed. To him this seemed a more rational explanation of the chemical secretion due to chemical stimulation of the gastric glands.

Experimental and Practical Work on Rabies.—Dr. D. W. POOR presented this communication, which was read by Dr. Ira Van Giesen. He said that the Pasteur method of treating rabies was established at the Research Laboratory in 1899 and the following figures gave an idea of the extent of the work done: In 1901 there were 29 cases treated; in 1902, 44 cases; in 1903, 71 cases; in 1904, 89 cases; in 1905, 122 cases; and so far in 1906, 291 cases had been treated or were still under treatment. Since January, 1904, the treatment had been mailed to 295 cases, of which 18 were severe, and 277 moderate or mild. Out of this number there had been but one death, a mortality of .3 of 1 per cent. During the same time 151 cases were treated at the laboratory, of which 22 were severe and 131 moderate or mild. In this number there was also one death, giving a mortality of .6 of 1 per cent. Dr. Follen Cabot had undertaken experiments to determine the effect of different caustics on rabic virus twenty-four hours after its entrance into a wound. These experiments in-

volved the use of 287 guinea pigs as test animals. The results of these experiments showed that with nitric acid 91 per cent. of the animals were saved, with the actual cautery, 67.6 per cent., with silver nitrate, 50.9 per cent., and by simple swabbing out of the wound, 31 per cent. Another question being investigated now was how to shorten the time required for the production of immunity in rabies. It was well known that the Pasteur treatment failed to protect occasionally when the patient had been severely bitten upon the head, because the virus reached the brain before the expiration of the time required by the treatment to immunize the patient, which was about four weeks. They had records of eight patients who developed rabies within this four weeks. If such cases were to be protected it was necessary first to destroy as much of the virus as possible, and to hasten the immunization of the patient, or prolong the period of incubation of the disease. This latter object might be accomplished by increasing the amount of antirabic immune body in the patient's blood as rapidly as possible without decreasing the resistance. He then cited a few results which indicated that it was possible to prolong the incubation period in guinea pigs by injecting them with immune serum. Another problem related to the making of a rapid diagnosis in animals supposed to be rabid. The microscopical method of diagnosis based on the pathological findings of Negri in 1903 had been greatly improved upon by methods introduced by Drs. Williams and Van Giesen, whereby smears from the brain and stained by a special method permitted of a diagnosis being made now in a few minutes. Dr. Williams had pursued the study of the pathology most extensively, and by investigations in comparative morphology and along other lines had accumulated a large amount of evidence to show that the so-called Negri bodies were protozoa and the causative agent of rabies. He believed that it was worth while for a municipality to provide for the thorough investigation of this disease, and for the treatment of those of its citizens who might be exposed to it, as was being done extensively of late in various cities; but he believed that in addition more attention should be paid to the other side of the question, the enforcement of legislation that would prevent the running at large of ownerless dogs, which kept the disease always with us.

Dr. W. H. Park said that many physicians did not know what to do when a person was bitten with a rabid dog. To-day physicians could have a very quick diagnosis made, whereas when they first started the Pasteur treatment and injected rabbits, it took weeks before they knew whether or not an animal was rabid. Dr. Williams, in trying to find the etiology of rabies, saw and described the Negri bodies even before Negri's article reached them. A safe diagnosis could now be made within twenty minutes. Dr. Van Gieson had prepared a stain which enabled them to do this much more easily. Even in animals decomposed almost beyond recognition they were able to find the bodies. Physicians would not remember the great need of proper cauterization of the wounds in these cases; the actual cautery or nitric acid which penetrated deeply should be used. The Pasteur treatment could now be mailed all over the country. The treatment was free to those residing in New York.

Eosin-Immunity in Tetanus.—Dr. Simon Flexner addressed the members of the academy on this subject. He said that one year ago he had studied the effect of injections of eosin into rats inoculated with the tetanus bacillus; he found that using a solution of eosin, of not too high a degree of concentration, injected successively on several days a very considerable percentage of the animals thus treated would be saved from death due to the tetanic infection. In some of these animals symptoms of tetanus developed; in others no symptoms whatever developed. All the animals inoculated in this way developed tetanus when not treated by eosin. Eosin in certain concentrations had the power to suppress the development of the spores of the tetanus bacillus. Eosin tended to detoxicate the organism and rendered the organisms inert as poisons. It prevented the development of spores, or else retarded or diminished this development. If these animals could be kept for a period of many months and then an attempt be made to reinfect them, interesting facts would be presented. Dr. Flexner showed an animal that had been inoculated three months ago with tetanus spores. The animal had been treated by injections of eosin, had developed no symptoms of tetanus, and recovered. Four days ago the animal was injected with the tetanus toxin which represented a distinct tetanic dose, and yet was less than a lethal dose. This dose was repeated. Two days after the second injection occurred the first appearance of tetanic symptoms, but on the side of the animal where the spores were not injected. This was an instance of a local immunity.

Dr. F. C. Wood said there were many theoretical questions that had not been answered. One was the method of action by which fluorescent substances produced lesions. Since the introduction of the *x*-ray and radium rays in the treatment of malignant growths this action was seen; the same necrosis was noted in animals injected with fluorescent substances and exposed to light as the necrosis produced by radium. The action of fluorescent bodies suggested the action of eosin on sensitized photographic plates; there was set free some energy due to the production of light. There was a possible liberation of energy by [illegible] there might be set free energy by the organism itself when treated with eosin.

An Experimental Study of the Sensation of Pain in the Abdominal Viscera.—Dr. S. J. Meltzer (with Dr. L. Kast) read this paper. (See page 1017.)

Dr. Joseph Collins said that the experiments of Dr. Meltzer went a long way toward solving the intangibility which surrounded visceral or abdominal pain, and, although apparently solving it, he really made the solution more difficult, because he left out of consideration the question of the intensity of the pain. If this visceral pain was of considerable severity it would be difficult to explain certain observations of dogs eating their own entrails. The experiments of Dr. Onuf and Dr. Collins showed that when the pylorus of the stomach, the inferior border of the liver, the gall-bladder, etc., were encroached upon there was at once the manifestation of pain in the animal. As bearing on Dr. Meltzer's experiments, one symptom or complex of symptoms now recognized was of great importance. This was the intense paroxysms of abdominal pain associated with splanchnic arteriosclerosis. Here the pain was not unlike that of angina pectoris. In this condition all the viscera being apparently normal acute agonizing pain might occur. This clinical fact would seem to bear directly upon the experiments of Dr. Meltzer and to corroborate the statement that the viscera throughout the abdominal cavity were in reality susceptible to painful stimulation.

Dr. Joseph A. Blake gave his practical personal experiences in regard to the sensitiveness of the peritoneum covering the abdominal viscera, and said that he had never been an exponent of operations based upon local anesthesia. Although he had not had so much opportunity for observing the sensitiveness of the peritoneum as others, his experience showed that when patients were operated upon under local anesthesia they experienced pain. When one reached the parietal peritoneum and pulled upon it as in hernia it was sensitive. In other operations, as upon the intestines or stomach, the patients suffered pain when the viscera were drawn upon. The pain was not so severe when the viscera were pinched or compressed, but only when drawn upon. It was hard to differentiate the pain from compression, or from tugging, or that caused by pulling. The visceral peritoneum was not so sensitive as the

parietal, or other tissues of the body. In inflamed conditions of the peritoneum the peritoneum was certainly painful. When drainage was introduced into the peritoneal cavity, such as gauze or substances in which the granulations might grow, the withdrawal of this drainage was exceedingly painful.

Dr. Willy Meyer said that his experience with gastrostomy, with enterostomy, with cecostomy, with incisions into the bladder preliminary to a prostatectomy, etc., caused him to corroborate the statements made by Lennander. For instance, pulling forward the stomach in gastrostomy was very painful to the patient, but the incision into the stomach itself did not cause pain. The visceral peritoneum seems not to be painful when handled, but the parietal was very sensitive. The intestines could be squeezed and treated with a very strong electric current without the slightest manifestation of pain. Dr. Meltzer had offered the explanation that cocaine worked upon the general nervous system, probably upon the brain, thus explaining why surgeons did not note the manifestation of pain in the patient when handling or cutting the intraabdominal viscera in cases operated on with the help of local cocaine anesthesia. He asked if he thought it was plausible that the very small amount of cocaine so often injected and used for local anesthesia would be sufficient to produce such an effect on the general nervous system. Dr. Meyer hardly thought so. He also called attention to the amount of cocaine used. If it were permissible to compare the weight of animals with that of men regarding the doses of the drug, it appeared that ten to fifteen times more cocaine was used in these experiments than corresponded to the medicinal doses allowable in our daily practice. Dr. Meyer considered it of great importance that Drs. Meltzer and Kast had approached this question in an experimental way, and he had no doubt that they would come to definite conclusions. At present he believed that further investigations were necessary to determine conclusively the correctness of Dr. Meltzer's findings.

Dr. Meltzer closed the discussion.

Election of Officers.—*President,* Dr. John A. Wyeth; *Vice-President,* Dr. Algernon T. Bristow; *Trustee,* Dr. Charles A. Dana; *Member Committee on Admissions,* Dr. J. Ramsey Hunt; *Member Committee on Library,* Dr. Henry S. Oppenheimer; *Recording Secretary,* Dr. John H. Huddleston; *Corresponding Secretary,* Dr. Charles Stedman Bull.

SECTION ON SURGERY.

Stated Meeting, Held December 7, 1906.

Dr. Samuel Lloyd in the Chair.

Two Cases of Cured Trigeminal Neuralgia.—Dr. A. V. Moschcowitz presented these patients.

Case I was in a man who had been under observation for three and a half years. When he first came to him in the spring of 1903 he had neuralgia involving mainly the inferior dental nerve. He resected one inch of this nerve, and the patient went home apparently cured. He was relieved of his symptoms for some months, when there was a recurrence of symptoms and he returned to the hospital. It was suggested that the best thing to do was to extirpate the Gasserian ganglion, but he again did a peripheral operation, resecting one and a half inch of the nerve. As he was not cured by the first operation, the proper thing to do was to attempt to prevent the renewal of the divided nerve. He, therefore, took silver leaf and packed the canal in the lower jaw. He was cured for eight months and again the old symptoms returned. The patient again returned to the hospital and he found a small quantity of silver foil still in place and a large quantity of cicatricial tissue. Again the canal was packed tightly with the silver. It was too soon to say whether the patient would remain cured although there had been complete relief of symptoms since the last operation. An *x*-ray picture showed the silver foil packing. There had resulted no facial paralysis at all.

Case II was that of a woman who was sent to him last June for resection of the Gasserian ganglion. When he examined the patient he found not only a trigeminal neuralgia including the three branches of the nerve, but a polypus as well. This was removed, but the patient was as bad as ever, and was then admitted to Mt. Sinai Hospital, and the operation performed last July. The nerve was divided at its exit from the foramen and in it he hammered a specially devised nail of rivet form, so entirely closing the foramen. She had remained free from pain ever since. The *x*-ray plate was shown.

Dr. William M. Leszynsky said that he had had the second patient of Dr. Moschcowitz under his care at the hospital and she had apparently made a perfect recovery under medical treatment, and had been free of symptoms for one year. While there was no spasm of the face, it was a typical case of trigeminal neuralgia involving all the branches. The treatment consisted of rest in bed, proper dieting, castor oil and strychnia injections. After two or three weeks she was up and around the ward and without symptoms, and was then discharged. Dr. Leszynsky said he had always held surgical interference as a *dernier resort.*

Dr. A. A. Berg asked if the cases presented were severe in character.

Dr. Moschcowitz replied that both belonged to the severe type of the disease. Attacks lasting two or three minutes were induced by touching the parts or efforts at mastication.

Schlösser's Treatment of Trigeminal Neuralgia.—Dr. Otto G. T. Kiliani read this paper. (See page 1019.)

Dr. George W. Jacoby said that any one who had any experience with trigeminal neuralgia recognized the futility of the various measures and methods advised during the last few years. These various methods advised he divided into surgical and medical. Among the former were resection of the nerve, revulsion, obstructive substances as shown by Dr. Moschcowitz, and direct attack upon the ganglion. In the first of these methods recurrences were so frequent that it could only be termed palliative. Some other methods were so dangerous to life that he did not think they were at all times justified in subjecting patients to them. Then there was the injection method, the injecting of various remedies, as nitrate of silver in the vicinity of the nerve, osmic acid, etc. Lately the method had been improved on by injecting directly into the nerve sheath after cutting down upon it. Schlösser's method he believed to be of great worth, although it seemed almost incredible that one could enter the foramina with the needle. The introduction of the needle into the foramen ovale was the easiest, requiring no special technical skill, but great care should be exercised in entering the foramen rotundum; there would be great difficulty here unless the handle of the needle was pressed well forward. He also referred to the dangers of injecting into the ophthalmic division of the fifth nerve in the sphenoidal fissure, where ran the third, fourth, and sixth nerve and the ophthalmic vein. By one injection one might inject in the foramen ovale and then into the Gasserian ganglion. But one should look out for motor paralysis of the motor root. By these injections one did not get paralysis but spasm. The spasm occurring after the injections (lockjaw) was not of long duration. The operation seemed to require a peculiar adaptability. Every case should be subjected to medical treatment before the surgical, but cases should not be delayed too long. Dr. Jacoby thought that they had in this operation a very thorough and noteworthy measure added to their therapeutic armamentarium.

Dr. A. A. Berg spoke of the great dangers incurred in the operation upon the Gasserian ganglion, although recent figures showed there was a comparatively low mortality.

Dr. Hartley's assistant's last twelve cases recovered. As a surgical section he did not think they should let pass unchallenged any statement that extirpation of the Gasserian ganglion was attended by such a high mortality as to preclude its application in the treatment of trigeminal neuralgia. All had seen temporary improvement follow the peripheral operation. He had seen severe cases operated upon several times and only temporary relief given. He called attention to the investigations of Dr. Spiller of Philadelphia with Dr. Keen; it was shown that if there was any organic basis behind, causing a fibrosis of the Gasserian ganglion in cases of trigeminal neuralgia, all peripheral operations must eventually not be classed as permanent cures. The Gasserian operation should not be given up; it was worthy of consideration in the desperate cases of neuralgia.

Dr. Moschcowitz said that the mortality of 24 per cent. was not a true one. With regard to the pathology in trigeminal neuralgia he said that he knew there had been examined five Gasserian ganglia in which the extirpation was the first operation that had taken place; these were examined by very competent pathologists and they found these ganglia to be perfectly normal. If a peripheral operation had been done it was possible that an ascending degeneration might have taken place. The majority of observers had found an endarteritis. Therefore, if the Gasserian ganglion was not the cause or the seat of disease, why remove it? In the peripheral operation it was necessary to prevent regeneration of the nerve, and the buttons he showed would do this.

Dr. Wm. Sohier Bryant said that apropos of the etiology of trigeminal neuralgia there were many cases due to intranasal disease, and many cases had been relieved by application of cocaine to the nose. Trigeminal neuralgia might be due to inflammation of the sinuses, by compression, by spurs, by irregular turbinates, or by functional disturbances of the vasomotor system.

Dr. Wm. M. Leszynsky thought the method of treatment advised by the reader of the paper which would relieve patients for ten months should be heeded; when recurrences occurred again the patient might be relieved for another ten months; this could be kept up all the patient's life and without any danger attached to it. He congratulated Dr. Kiliani upon the presentation of this method.

Dr. Robert T. Morris said that many patients came to him that had not had careful examination of the nose or eyes; many of these cases he had found did not require operation at all on the nerve. Within the past year he had had two cases of trigeminal neuralgia which were cured by proper attention to an accompanying eyestrain.

Dr. Kiliani said that the introduction of alcohol into the nerve sheath was not a peripheral operation. It was a fact that when alcohol was injected it hardened the tissues; after the anesthesia passed off, strange to say, the sensibility recurred but not the pain. Why this was so he could not answer. It was a fact that for ten or twelve months the pain disappeared.

The X-Rays Versus Surgery in Sarcoma.—Dr. Aspinwall [illegible] read this paper. (See page 1020.)

The Choice of Procedure in Cases of Loose Kidney.—Dr. Robert T. Morris read this paper. He said that too much, as well as too little, operating had been done for loose kidney, and asked what should be our choice of procedure in advising patients, and how should they proceed to operate in cases selected for operation. The following classification seemed to him to be a useful one: (1) Loose kidney present, but causing no disturbances. (2) Patients with major or minor psychoses associated with, but not influenced by, the presence of loose kidney. (3) Patients with minor or major psychoses precipitated or intensified by the presence of loose kidneys. (4) Patients with various gastrointestinal reflex disturbances, depending upon the influence of loose kidney through the large sympathetic ganglia. These were the cases that gave the most brilliant results. (5) Patients with direct local mechanical results from the influence of loose kidney. (6) Patients in whom loose kidney was only a part associated with other visceral ptoses. What treatment should be proposed for loose kidney cases? Abdominal supporters first of all in the panptosis cases. Abdominal supporters should be applied in cases where there was any doubt about the part played by a loose kidney. Some of these patients would get so much relief that they would not ask for operation; others were benefited just enough to prove that one must operate. Dr. Morris said he had tried all the type methods excepting the new one proposed by Longyear of shortening the nephrocolic ligament, and this seemed to be disposed of in the combination operation which was now employed. The combination operation included the suture of Goelet, which hung the kidney at just the right point, and the iodoform gauze packing of Senn, which disposed of the retroperitoneal pouch when secondary adhesion occurred after removal of the gauze. Patients were out of bed in two weeks after the operation. The only instruments required were a pair of scissors and a needle. The entire operation of fixation of a loose kidney could be done leisurely in fifteen minutes by the combination operation, and he had fixed both kidneys, completing the work in that length of time. Expeditious work was desirable in any sort of surgical work if it left no detail neglected, because it left the patient with natural resistance less impaired than it was after puttering operations. The combination operation was a speedy one, and it left no detail neglected.

Perforation of the Intestine by a Murphy Button.—Dr. Eugene H. Pool reported this case at the suggestion of Dr. Bull. There was a perforation of the intestine by a Murphy button two months after an otherwise successful pylorectomy, the perforation occurring some distance from the site of anastomosis. The patient was a woman, fifty-six years old, who gave a straightforward history of carcinoma of the stomach. Operation was performed on March 30, 1906. At the pyloric end of the stomach a large growth was found which was fairly movable, and a pylorectomy was performed. At the same time a gastroenterostomy was done with a Murphy button of the usual size, but with the flange on, as was suggested by Dr. Weir, and it was in all probability this flange that was the cause of the subsequent trouble. At the end of the fifth week she drove for two hours. On the forty-first day, without any apparent cause, she was seized suddenly with severe pain in the right iliac fossa, accompanied with chill and vomiting. Shortly afterward the temperature rose to 100.5°; pulse, 104. At this time there was local tenderness, rigidity, and general distention. The bowels had moved every day by enemata. The leucocytes were about 9,000 at this time, with polymorphonuclears 87 per cent. These symptoms in the right iliac fossa cleared up gradually, and four days from the onset of these symptoms she felt comparatively well and able to go downstairs. During the next five days there was occasional pain in the right iliac fossa and occasional nausea, and the patient was getting rather weak. At the end of the fiftieth day from time of operation she was seized with a similar attack, *i.e.* sharp pain, vomiting, chill, temperature 101.5°, pulse 124, leucocytes 33,000, and polymorphonuclears 93 per cent. The interesting point here was that the pain was referred to the left iliac fossa and none to the right. The patient became very weak, entered into collapse, and in a few days died. At the time of the first attack the *x*-ray showed the Murphy button to be in the right iliac fossa. At autopsy low down in the iliac fossa was quite a large abscess, four inches in diameter; by careful dissection a narrow tract was found two inches from the ilocecal junction, and an opening was noted through which could be seen the border of the Murphy button. No doubt during the first attack the button had perforated and been walled off, preventing the extravasation of feces and pus.

Dr. CONNER reported a similar case in which the woman gained forty pounds after the operation and had been perfectly well for a long time afterward. The anastomosis between the stomach and intestine by means of the Murphy button gave no trouble for a long time; then it was found that the stomach had twelve ounces of residual food, and the Murphy button was noted in it.

Dr. A. A. BERG said that at the Mt. Sinai Hospital in five years there had been eight cases of fatal perforative peritonitis after the use of the button. One of these occurred on the tenth day after a gastroenterostomy for the relief of bleeding from the stomach. A second case was recorded in which an end-to-end anastomosis was done for a strangulated hernia. The other patients, he believed, had had gastroenterostomies performed on them. Because of this experience Dr. Berg steered clear of the Murphy button.

Dr. A. ERNEST GALLANT said it was a question whether the flange on the button had anything to do with the difficulty in passing through the valve.

Dr. KILIANI warned against the Jaboulay button.

Dr. Pool closed the discussion.

Surgical Electric Burr.—Dr. WM. SOHIER BRYANT presented this instrument and illustrated its action.

Election of Officers.—*Chairman,* Dr. John F. Erdmann; *Secretary,* Dr. Edward W. Peterson.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

NERVENKRANKHEIT UND LEKTÜRE. NERVENLEIDEN UND ERZEIHUNG. DIE ERSTEN ZEICHEN DER NERVÖSITAT DES KINDESALTERS. Drei Vorträge von PROF. DR. H. OPPENHEIM. 8vo, 119 pages, paper. Verlag Von S. Karger, Berlin, 1907.

PATHOLOGY OF THE EYE. By J. HERBERT PARSONS, B.S., D.S.C., Volume III, General Pathology. Part I, 8vo, 1,128 pages, illustrated, muslin. G. P. Putnam's Sons, New York.

GENITOURINARY DISEASES AND SYPHILIS. By HENRY H. MORTON, M.D. Second edition, revised and enlarged. 8vo, 500 pages, illustrated, muslin. F. A. Davis Company, Philadelphia. Price, $4.00.

PULMONARY PHTHISIS. By H. HYSLOP THOMSON, M.D. 8vo, 188 pages, illustrated, muslin. William Wood & Co., New York. Price, $2.00.

CLINICAL LECTURES ON ENLARGEMENT OF THE PROSTATE. By P. J. FREYER, M.A., M.D., M.Ch. Third edition, 8vo, 154 pages, illustrated, muslin. William Wood & Co., New York. Price, $2.00.

RETROPERITONEAL HERNIA. By B. G. A. MOYNIHAN, M.S., F.R.C.S. Second edition, revised and in part rewritten, 8vo, 184 pages, illustrated, muslin. William Wood & Co.

DISEASES OF THE LUNGS. By JAMES ALEXANDER LINDSAY, M.D., F.R.C.P. (Lond.), M.A. 8vo, 509 pages, muslin. Second edition, enlarged and rewritten. William Wood & Co., New York. Price, $4.00.

MINOR MALADIES AND THEIR TREATMENT. By LEONARD WILLIAMS, M.D., M.R.C.P. 12mo, 383 pages, muslin. William Wood & Co., New York. Price, $2.50.

HIGH FREQUENCY CURRENTS. By H. EVELYN CROOK, M.D., B.S. (Lond.), F.R.C.S. (Eng.). 8vo, 206 pages, illustrated, muslin. William Wood & Co., New York. Price, $2.00.

THE MEDICAL EPITOME SERIES. PATHOLOGY, GENERAL AND SPECIAL. By JOHN STENHOUSE, M.A., B.Sc. (Edin.), M.B. (Tor.), and JOHN FERGUSON, M.A., M.D. (Tor.). 12mo, 285 pages, illustrated, muslin. Lea Brothers & Co., Philadelphia and New York.

THE PHYSICIAN'S VISITING LIST. 1907. Fifty-sixth year of its publication. 16mo, flexible leather. P. Blakiston's Sons & Co., Philadelphia.

INDICATIONS FOR OPERATION IN DISEASES OF THE INTERNAL ORGANS. By Prof. HERMANN SCHLESINGER, M.D. 8vo, 498 pages, muslin. E. B. Treat & Co., New York. Price, $3.00.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week ending December 22, 1906:

	Cases	Deaths
Tuberculosis Pulmonalis	320	171
Diphtheria	280	36
Measles	154	6
Scarlet Fever	184	13
Smallpox	6	—
Varicella	110	—
Typhoid Fever	62	10
Whooping Cough	101	11
Cerebrospinal Meningitis	6	10
Malarial Fever	..	..
Totals	1223	257

The Action of Alcohol in Chronic Poisoning with Lead, Mercury, and Antimony.—Cesare Biondi calls our attention to the fact that miners who work in mining ores containing lead, antimony, or mercury are intoxicated by an amount of alcohol which would have no such effect on persons in a normal condition. These persons are in a condition of chronic metallic poisoning and the alcohol has an unusual effect on the organs. These metals produce an alteration in the fine tissues of the nervous elements of the cerebral cortex. Alcohol produces similar alterations in the cerebral cortex in the fetuses of animals into whom alcohol has been injected. Its effect on the already poisoned nerve cells of the miner is much more marked than under ordinary circumstances. The metallic poisoning renders him unable to resist the effects of alcohol, and such persons should not be judged too harshly when they become intoxicated.—*Rivista Critica di Clinica Medica.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended December 21, 1906.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Georgia, Augusta	Nov 27–Dec. 10	16	..
Illinois, Chicago	Dec. 9–15	1	..
Galesburg	Dec. 2–8	13	..
Indianapolis	Dec. 3–9	1	..
South Bend	Dec. 2–8	3	..
Kansas, Topeka	Dec. 2–8	1	..
Louisiana, New Orleans	Dec 2–8	1	..
Minnesota, Fourteen Counties	Nov. 12–Dec. 10	56	..
Montana, Two Counties	Nov. 1–30	2	..
Missouri, Saint Joseph	Oct. 26–Dec. 8	3	..
Saint Louis	Dec. 1–8	1	..
Nebraska, Omaha	Nov. 15–21	1	..
New York, New York	Nov. 2–Dec. 15	18	..
North Carolina, Three Counties	Oct. 1–31	29	..
Ohio, Toledo	Dec. 2–8	3	..
Washington, Spokane	Dec. 4–10	1	..
Wisconsin, Milwaukee	Oct. 2–8	63	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Oct. 27–Nov. 3	5	..
Brazil, Bahia	Oct. 28–Nov. 10	15	..
Pernambuco	Oct. 16–30	..	15
Rio de Janeiro	Nov. 6–10	3	..
Chile, Iquique	Nov. 6–10	..	Present
Great Britain, Hull	Nov. 18–24	3	..
Manchester	Nov. 18–24	1	..
India, Calcutta	Oct. 28–Nov. 3	1	..
Russia, Odessa	Nov. 18–24	2	1
St. Petersburg	Nov. 17–23	20	1
Turkey, Beirut	Nov. 24	..	Present

CHOLERA—INSULAR

Philippine Islands, Manila	Oct. 13–Nov. 17	349	145
Provinces	Oct. 13–Nov. 17	1,037	730

CHOLERA—FOREIGN.

India, Bombay	Nov. 14–20	..	17
Calcutta	Oct. 28–Nov. 10	..	104

YELLOW FEVER.

Cuba, Marianao	Dec. 15	1	..
Mexico, Veracruz	Nov. 17–Dec 1	3	2

PLAGUE.

Brazil, Bahia	Oct. 28–Nov. 10	5	1
Pernambuco	Oct. 16–31	..	.
Rio de Janeiro	Nov. 4–10	34	12
Peru, Catacaos	Nov. 3	1	..
Mollendo	Nov. 3	1	..
Trujillo	Nov. 1–6	1	..

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